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**PRELIMINARY SUBSURFACE SOIL
AND GROUND WATER INVESTIGATION
WORK PLAN**

1726 Park Street
Alameda, California

January 30, 1992

prepared for

The Estate of John B. Henry
3312 Central Avenue
Alameda, California 94501

prepared by

TMC ENVIRONMENTAL, Inc.
13685 San Pablo Avenue
San Pablo, California

CERTIFICATION

I supervised the preparation of the Preliminary Subsurface Soil and Ground Water Investigation Work Plan dated January 30, 1992 for the Estate of John B. Henry property in the City of Alameda, Alameda County, California. The investigation used techniques and standards of care common to the consulting geologic profession in California. My certification as an engineering geologist by the State of California, Board of Registration for Geologists and Geophysicists, license number EG-1380, expires on June 30, 1992. This license is active and currently in good standing with the Board of Registration.

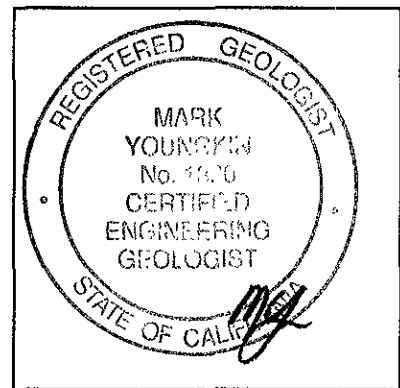
Certifying Professional:

TMC Environmental, Inc.
Vice President

Mark T. Youngkin

Mark T. Youngkin
Certified Engineering Geologist No. EG-1380

Dated January 30, 1992



Geologist Seal

This document, signed and stamped with seal, follows section 7835 of the Geologist and Geophysicists Act, Business and Professions Code, State of California and the requirements of the California Regional Water Quality Control Board, San Francisco Bay Region.

TABLE OF CONTENTS

**PRELIMINARY SUBSURFACE SOIL AND
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<u>DESCRIPTION</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 GENERAL SITE INFORMATION	1
2.1 SITE LOCATION	1
2.2 CONTACT PERSON	1
2.3 CONSULTANT OF RECORD	2
2.4 LEAD IMPLEMENTING AGENCY	2
2.5 SITE AND VICINITY DESCRIPTION	2
3.0 SITE BACKGROUND	3
3.1 PREVIOUS SITE USE	3
3.2 HISTORIC RECORD REVIEW	3
3.3 HISTORIC AERIAL PHOTO REVIEW	4
3.4 REPORTED VICINITY SITES WITH CONTAMINATION	5
3.5 NEIGHBORING SITE WORK	6
4.0 PREVIOUS SITE WORK	6
4.1 SOIL BORINGS AND CHEMICAL ANALYSIS	6
4.2 REMOVAL OF WASTE OIL TANK	9
5.0 PROPOSED PRELIMINARY SUBSURFACE SOILS AND GROUND WATER INVESTIGATION	10
5.1.0 PROPOSED SUBSURFACE SOIL INVESTIGATION	10
5.1.1 RATIONAL FOR SUBSURFACE SOILS INVESTIGATION	10
5.2.0 PROPOSED GROUNDWATER INVESTIGATION	10
5.2.1 RATIONAL FOR GROUND WATER INVESTIGATION	10
5.3 SCOPE OF SUBSURFACE SOIL AND GROUND WATER INVESTIGATION WORK	10
5.4 SCHEDULE OF GROUNDWATER INVESTIGATION WORK	12
6.0 PREPARATION OF A TECHNICAL REPORT	12
7.0 SAMPLING AND ANALYSIS PLAN	13
7.1 BORING AND WELL DRILLING OPERATIONS	13
7.2 SOIL SAMPLING	14
7.3 WELL CONSTRUCTION	15
7.4 WELL DEVELOPMENT	16
7.5 GROUND WATER SAMPLING	17
7.6 LABORATORY ANALYSIS	17
7.7 SAMPLE RECORDS AND CHAIN OF CUSTODY	18
7.8 DECONTAMINATION	19
7.9 STORAGE FOR DISPOSAL	20

8.0	QUALITY ASSURANCE AND QUALITY CONTROL	20
8.1	OBJECTIVE	20
8.2	SOIL BORINGS	20
8.3	SOIL SAMPLING	20
8.4	SAMPLE CUSTODY	21
8.5	LABORATORY QUALITY ASSURANCE	22
8.6	DATA VALIDATION AND REPORTING	22
9.0	SITE SPECIFIC SAFETY PLAN	22
9.1	INTRODUCTION	22
9.2	PROJECT DESCRIPTION	23
9.3	KEY PERSONNEL	23
9.4	PROJECT MANAGER AND SAFETY OFFICER RESPONSIBILITIES	23
9.5	SUB-CONTRACTOR RESPONSIBILITIES	24
9.6	FIELD TEAM MEMBER RESPONSIBILITIES	25
9.7.0	HAZARD EVALUATION	25
9.7.1	HAZARD EVALUATION: SOIL BORINGS	26
9.7.2	HAZARD EVALUATION: SOIL SAMPLING	26
9.7.3	HAZARD EVALUATION: PACKAGING AND SHIPMENT OF SAMPLES	26
9.8.0	HAZARD CRITERIA	27
9.8.1	HYDROCARBON VAPORS	27
9.8.2	ACTION LEVELS OF HYDROCARBON COMPONENTS IN PETROLEUM FUEL:	27
9.8.3	HEAT STRESS AND NOISE	28
9.9	PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS	29
9.9.1	SOIL BORINGS	29
9.9.2	PACKAGING AND SHIPMENT OF SOIL SAMPLES	30
10.0	WORK ZONES	30
11.0	DECONTAMINATION PROCEDURES	31
12.0	MONITORING PROGRAM	32
12.1	AMBIENT VAPOR READING	32
12.2	SAFETY AND HEALTH TRAINING	33
13.0	MEDICAL MONITORING PROGRAM	34
14.0	EMERGENCY RESPONSE PLAN	34
14.1	INJURIES	35
14.2	FIRE AND EXPLOSION HAZARDS	36
14.3	OPERATION SHUTDOWN	36
15.0	COMMUNITY PROTECTION	36
16.0	RECORD KEEPING	37
17.0	LIMITATIONS	37

TABLE OF CONTENTS CONTINUED...

PLATES

PLATE 1	SITE VICINITY MAP
PLATE 2	GENERAL SITE MAP
PLATE 3	LOCATIONS OF REPORTED VICINITY CONTAMINATION INCIDENTS
PLATE 4	SOIL BORING LOCATIONS AND RESULTS
PLATE 5	PROPOSED LOCATIONS OF SOIL BORINGS AND GROUND WATER MONITORING WELLS
PLATE 6	WELL CONSTRUCTION PLAN

ATTACHMENTS

ATTACHMENT 1	TANK REMOVAL REPORT
ATTACHMENT 2	LABORATORY RESULTS OF HAND BORING SOIL SAMPLES

**WORK PLAN FOR A PRELIMINARY
SUBSURFACE SOILS
AND GROUND WATER INVESTIGATION**

at
1726 Park Street
Alameda, California

1.0 INTRODUCTION

TMC ENVIRONMENTAL (TMC) is presenting this work plan to The Estate of John B. Henry, for the site located at 1726 Park Street, Alameda, California, hereafter referred to as the "site" in this work plan; see Aerial Photo 1 and Plate 1, Site Location Map.

Previous site work, performed by **TMC** (August, 1991), revealed the presence of petroleum hydrocarbons in the subsurface soils beneath the site. Details of this work are presented below. The purpose of the proposed work is to investigate for the extent of petroleum hydrocarbons at the site.

2.0 GENERAL SITE INFORMATION

2.1 SITE LOCATION

The site encompasses the southeast corner of the Park Street and Eagle Avenue intersection, and is located at the following address:

1726 Park Street
City of Alameda
County of Alameda
State of California
APN 70-192-01

2.2 CONTACT PERSON

The contact person for this site is:

Melinda Henry-Dare
3312 Central Avenue
Alameda, California
(510) 522-1228

2.3 CONSULTANT OF RECORD

TMC is the environmental consultant that wrote this work plan and is the consultant of record. The **TMC** contact person is:

Mr. Tom Edwards, President
TMC Environmental Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806
(510) 232-8366

2.4 LEAD IMPLEMENTING AGENCY

The lead implementing agency authorized by the California Regional Water Quality Control Board to oversee this site is:

Alameda County Department of Health Services
80 Swan Way, Room 200
Oakland, California
(510) 271-4320

2.5 SITE AND VICINITY DESCRIPTION

The site is currently developed, with an existing one-story building and asphalt-surfaced parking area (see Plate 2, Site Plan). An automotive repair business currently occupies the site. Visual reconnaissance of the site revealed the presence of three hydraulic hoists, an abandoned fuel dispenser island, pipe risers (likely tank vent pipes) attached to the shop building, various five and 55-gallon metal drums, an aboveground automotive waste oil tank (estimated to have a 500-gallon capacity), a soil pile (covered with plastic), parts degreaser bath, and surface petroleum-like residues on the surfaces of the concrete shop floor and surrounding asphalt parking areas. Additionally, two areas of the parking lot appeared to be patched, suggesting former underground tank locations. These items are also indicated on Plate 2. There was no obvious evidence of residues migrating from neighboring property onto the site.

Land use of the surrounding area is primarily commercial businesses. A car dealership borders the southern limits of the site. A tool manufacturing facility borders the eastern limits of the site. Automotive repair shops and gasoline stations are located north and west (across Eagle Avenue and Park Street, respectively) from the site. Public utilities service the site as well as the area. A ground water monitoring well was observed on the neighboring property located adjacent and south of the subject site. This well is indicated on Plate 2. There were no wells (monitoring or domestic) found on the subject site.

3.0 SITE BACKGROUND

3.1 PREVIOUS SITE USE

Reportedly, the site is the location of a former gasoline station, which operated through the mid 1970's. TMC assumes that underground fuel storage tanks were installed on the site as part of the station's operation. An automotive waste oil tank also existed on the site by Texaco. The site has been used as an auto repair shop since the mid 1970's.

Mr. Warren reported to TMC that an auto body repair shop formerly existed near the south eastern limits of the subject site. Mr. Warren indicated that the facility closed approximately two years ago.

3.2 HISTORIC RECORD REVIEW

TMC reviewed records at the Alameda Fire Department (AFD) and Department of Public Works (DPW). Files pertaining to underground storage tanks at the site were reviewed at these agencies. Information in these files indicated that underground fuel tanks were installed on the site. However, information in these files were non-conclusive as to the disposition, number, and location of underground storage tanks on the site. TMC found no documentation at these agencies pertaining to the removal of underground storage tanks from the site. From various discussions with Ms. Henry-Dare and the site's current tenant (Glenn Warren), it is the understanding of TMC that underground fuel storage tanks were removed from the site in the early to mid 1970's.

3.3 HISTORIC AERIAL PHOTO REVIEW

TMC reviewed available aerial photographs obtained through Pacific Aerial Survey (PAS), located in Oakland California. Eleven (11) sets of black and white, vertical angle, aerial photographs were visually reviewed under 8X magnification. Identification data for these photographs are as follows:

<u>Date Flown</u>	<u>Approximate Scale</u>	<u>Serial Numbers</u>
4-14-50	1 in. = 1,000 ft	AV-28-16-26
8-15-53	1 in. = 1,000 ft	AV-119-12-30
5-03-57	1 in. = 1,000 ft	AV-253-10-35
7-03-59	1 in. = 1,000 ft	AV-337-06-36
5-19-71	1 in. = 1,000 ft	AV-995-04-25
4-24-73	1 in. = 1,000 ft	AV-1100-06-27
5-29-75	1 in. = 1,000 ft	AV-1193-05-19
7-19-77	1 in. = 1,000 ft	AV-1377-05-28
6-22-81	1 in. = 1,000 ft	AV-2040-06-22
3-30-88	1 in. = 1,000 ft	AV-3268-06-28
6-12-90	1 in. = 1,000 ft	AV-3845-09-33

These photographs were examined for land forms, topographic features, structures, and tonal differences which might give an indication of the past land use of the site. The earliest photo available in the PAS library of the site was taken in April, 1950. Features in this and the subsequent photos are similar to existing site and surrounding conditions (i.e. existing buildings, roads, etc.). The April, 1950 photo, did reveal the presence of a building on the site south and adjacent to the subject site. This building was located near the south eastern limits of the subject site, and was not observed in subsequent photos.

In all the photos, dark features were observed on the surfaces of the parking areas of the site. These are believed to be surface stains. The nature of the suspected stains are not known. There was no obvious evidence of surface residues migrating from neighboring sites to the subject site. Barrel/drum-like objects and cars were also observed on the site in all the photos.

None of the photos revealed obvious evidence of open refuse pits or above ground storage tanks on adjacent properties that may adversely impact the site.

3.4 REPORTED VICINITY SITES WITH CONTAMINATION

A review of available records was performed at the California Department of Health Services (DOHS), located in Berkeley, California, California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), located in Oakland, California, and the City of Alameda Fire Department.

Documents reviewed at the DOHS include: Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), revised February 5, 1990; Abandoned Site Program Information System (ASPIS), revised February 4, 1991; Hazardous Waste and Substances List (a.k.a. Cortese List), revised March, 1990; and California Expenditure Plan for the Hazardous Substances Cleanup Bond Act, 1984, revised January, 1989. Documents reviewed at the RWQCB were List of Fuel Leak Sites, revised January 7, 1991, and List of Non-fuel Chemical Leaks, revised, March 5, 1991.

Information in these files reveal the existence of several sites with known chemical or fuel contamination, in the vicinity of the subject site. Sites within an approximate one-half mile radius are listed below, and their approximate locations are indicated on Plate 3, Locations of Reported Vicinity Contamination Incidents.

The following is a list of reported contamination incidents and cases within a one mile radius of the site.

Symbol No.
on Plate 3 Addresses of the Listed Contamination
Incidents

FUEL LEAKS

1	1725 Park Street
2	1911 Park Street
3	2501 Santa Clara Street
4	2100 Central Avenue
5	1541 Park Street
6	1200 Park Street
7	2425 Central Avenue
8	1260 Park Street
9	1555 Oak Street
10	1700 Park Street

3.5 NEIGHBORING SITE WORK

A subsurface soils and ground water investigation is ongoing at 1700 Park Street, located south and adjacent to the subject site. This work is being performed to characterize unauthorized discharge of petroleum hydrocarbons to the soils and ground water at this site. Work on this site is being performed by TMC. Information regarding this work has been reported to the Alameda County Department of Health Services and the Regional Water Quality Control Board. Recent information regarding the neighboring investigation is presented in a TMC report STATUS REPORT, dated January, 15, 1992. Work performed at this site reveals that groundwater is approximately 8 feet below grade, and flows in a north westerly direction.

4.0 PREVIOUS SITE WORK

4.1 SOIL BORINGS AND CHEMICAL ANALYSIS

On August 23, 1991, TMC drilled seven borings (indicated as B-1 through B-7 in this document) on the site. The borings were drilled and sampled using hand augering and sampling equipment. The purpose of this work was to investigate for the presence of petroleum materials in the subsurface soils at the site, and investigate for the presence of the suspected underground fuel tanks. Borings B-2 through B-7 were located near an existing waste oil tank, an abandoned fuel dispenser island, and in the former fuel tank location. Boring B-1 was located near a concrete pad, located outside the north eastern portion of the shop building. Boring locations are presented on Plate 4, Soil Boring Locations and Results.

The soils encountered in the borings were primarily medium-grain sands. In Borings B-2, B-3, and B-6, soils were encountered that had relatively medium to strong petroleum-like odors and/or staining. Very moist to wet soils were encountered at approximately 8 feet below grade. Borings B-4 and B-5, placed near the abandoned pump island, were advanced to a depth of approximately four feet. The soils encountered in these borings did not appear to be impacted with petroleum hydrocarbons.

Neither borings B-6 or B-7 (drilled in the reported former fuel tank location) encountered obstructions, debris or other evidence indicating that underground tank exist in this location. Additionally, Bay Area Tank

Removal (BATR) scanned the suspect area with a metal detector devise. The detector gave no indication that metal tanks or underground piping exists in this area.

Soil samples were recovered from Borings B-1, B-2, B-3, B-4, B-5, and B-6. No samples were recovered from B-7. Samples were collected from soils that were stained and/or had petroleum-like odors. These samples are indicated as HB1-1, HB2-1, HB2-2, HB2-3, HB3-1, HB4-1, HB5-1, HB6-1, HB6-2, and HB6-3, respectively, in Attachment 2, Laboratory Results of Hand Boring Soil Samples, and below in Table 1, Chemical Analysis Results of Hand Soil Borings. Soil samples with detectable analytes are presented on Plate 4. Free ground water was encountered at approximately 7-1/2 to 8 feet below grade. No water samples were collected for chemical analysis.

Soil samples HB2-1, HB2-3, and HB3-1 were chemically analyzed for TPH Diesel/Kerosene (EPA 8015), and Petroleum Oil and Grease (SM 5520 EF). Soil sample HB6-2 was chemically analyzed for TPH Gasoline, with BTEX distinction (EPA 8015 and 8020) and TPH Diesel. Soil sample HB6-3 was chemically analyzed for TPH Gasoline and BTEX.

**TABLE 1
CHEMICAL ANALYSIS RESULTS
OF
SOIL HAND BORINGS**

SAMPLE NUMBER	TVH AS GASOLINE (MG/KG)	BENZENE (UG/KG)	TOLUENE (UG/KG)	ETHYL BENZENE (UG/KG)	TOTAL XYLENES (UG/KG)
HB1-1	NA	NA	NA	NA	NA
HB2-1	NA	NA	NA	NA	NA
HB2-2	NA	NA	NA	NA	NA
HB2-3	NA	NA	NA	NA	NA
HB3-1	NA	NA	NA	NA	NA
HB4-1	NA	NA	NA	NA	NA
HB5-1	NA	NA	NA	NA	NA
HB6-1	NA	NA	NA	NA	NA
HB6-2	56	15	22	660	250
HB6-3	39	9.3	9.4	390	260

SAMPLE NUMBER	KEROSENE RANGE (MG/KG)	DIESEL RANGE (MG/KG)	HYDROCARBON OIL & GREASE	REPORTING LIMIT (MG/KG)
HB1-1	NA	NA	NA	NA
HB2-1	ND	30	340	1.0
HB2-2	NA	NA	NA	NA
HB2-3	210	ND	ND	1.0
HB3-1	ND	2000	1500	10
HB4-1	NA	NA	NA	NA
HB5-1	NA	NA	NA	NA
HB6-1	NA	NA	NA	NA
HB6-2	ND	13	NA	1.0
HB6-3	NA	NA	NA	NA

NA = Not Analyzed

ND = Not Detected at or above reporting limit.

The chemical analysis results reveal detectable levels of target analytes in samples HB2-1, HB3-1, HB6-3, and HB6-3. Sample HB2-3 had detectable levels of Kerosene.

This field work and chemical analysis was performed in accordance with EPA and RWQCB guidelines for investigating fuel leaks. All field work was under the supervision of a State-certified engineering geologist.

4.2 REMOVAL OF WASTE OIL TANK

On December 5, 1991, TMC removed the automotive waste oil tank at the site. Details of the tank removal are in Attachment 1, Tank Removal Report.

The tank was visually inspected upon removal. The tank was estimated to have a 500-gallon capacity and appeared intact, with no obvious evidence of holes. Two soil samples were recovered from beneath the tank. The samples were chemically analyzed for total petroleum hydrocarbons as gasoline (with benzene, toluene, ethyl benzene, and xylene distinction), diesel, oil and grease, volatile and semi-volatile hydrocarbons. The samples were also chemically analyzed for cadmium, chromium, lead and zinc. The analysis results reveal petroleum hydrocarbon levels below detection limits. Cadmium and lead levels are also below detection limits. There were detectable levels of chromium and zinc of 44.7 and 48.5 parts per million (ppm), respectively.

Upon completion of the tank removal activities, the excavation was backfilled with clean, imported fill, and resurfaced with concrete. The materials generated from the tank removal are covered and stockpiled on site.

5.0 PROPOSED PRELIMINARY SUBSURFACE SOILS AND GROUND WATER INVESTIGATION

5.1.0 PROPOSED SUBSURFACE SOIL INVESTIGATION

5.1.1 RATIONAL FOR SUBSURFACE SOILS INVESTIGATION

In this work plan, TMC is presenting work to begin investigating the extent of petroleum hydrocarbon materials found in soils at the site. These materials were discovered in the soils from previous site work.

The tasks presented agree with the recent guidelines recommended by the enforcing agency, the Alameda County Department of Environmental Health and the chief state agency, the Bay Area Regional Water Quality Control Board located in Oakland, California. The investigation, reclamation, and reporting guidelines are available through these agencies, and do apply to the unauthorized discharge at this site.

5.2.0 PROPOSED GROUNDWATER INVESTIGATION

5.2.1 RATIONAL FOR GROUND WATER INVESTIGATION

This work plan proposes the tasks necessary to begin investigating for the presence and/or estimating the impact of petroleum hydrocarbon materials upon the ground water beneath the site.

The tasks presented agree with the recent guidelines recommended by the enforcing agency, the Alameda County Department of Environmental Health and the chief state agency, the Bay Area Regional Water Quality Control Board located in Oakland, California. The investigation, reclamation, and reporting guidelines are available through these agencies, and do apply to this apparent unauthorized discharge.

5.3 SCOPE OF SUBSURFACE SOIL AND GROUND WATER INVESTIGATION WORK

The scope of work in this document will address the investigation for the extent of petroleum hydrocarbons in the site's subsurface soils and for presence and/or extent of petroleum hydrocarbon materials in ground water at the site. Following this investigation, a problem

assessment report (PAR) will be prepared providing the results and conclusions of this investigation. If additional investigation is required due to an expanded scope of work, then workplan amendments will be submitted. All work will be under the direct supervision of a California Certified Engineering Geologist.

The following tasks summarize the work proposed in the workplan:

- Drill 12 soil borings in the areas of the site previously found to be impacted with petroleum hydrocarbons. The approximate location of the proposed soil borings are indicated on as B-8 through B-17 on Plate 5. Soil boring locations and number may vary in light of new information or upon findings in the field. Final boring locations will be indicated in the technical report.
- If possible, recover a "grab" ground water sample from the borings for visual inspection for the presence of petroleum materials.
- In two of the soil borings, install two, 2-inch diameter, PVC ground water monitoring wells at the site, in a location believed to be down gradient from areas found to be impacted by petroleum hydrocarbons. The proposed locations of the monitoring wells are indicated on Plate 5 as MW-1, and MW-2. Final monitoring well locations will be indicated in a technical report.
- Collect selected soil samples from each soil boring. A total 15 soil samples shall be submitted for chemical analysis.
- Analyze selected soil samples for the target pollutants. Samples will be submitted to Curtis and Tompkins, Ltd., located in Berkeley, California. Samples will be chemically analyzed following RWQCB guidelines and reporting limits. Details are presented below in 7.6, Laboratory Analysis.
- Develop and purge each well prior to sampling.
- Collect ground water samples from the monitoring wells, and analyze the samples for the target pollutants.
- Survey the ground water in the wells to mean sea level, then to estimate the ground water gradient and flow direction.
- Prepare a report of the findings.

5.4 SCHEDULE OF GROUNDWATER INVESTIGATION WORK

Boring and well permitting can normally commence 3 working days after authorization requiring 1-2 weeks for agency permit review. Verbal laboratory results are available 15 working days after sampling. This work plan does not include arrangements for rush service on laboratory sampling. The schedule of work is based on the scope of work as presented in this work plan. Changes to the scope of work will require revision of the schedule of work.

TMC personnel is available to begin work upon receipt of authorization to proceed from the Client and the implementing local agency. A reasonable estimated schedule for doing the investigation described above is as follows:

<u>TASK</u>	<u>CUMULATIVE WEEKS</u>
Authorization to Proceed	1
Agency Permitting	3
Mobilize for Drilling	3
Well Sampling	4
Laboratory Analysis	7
Status Report	12

We are confident that we can complete this project in an efficient and cost effective manner.

6.0 PREPARATION OF A TECHNICAL REPORT

A technical report will be prepared in accordance with the investigation guidelines of the Regional Water Quality Control Board and the Alameda County Department of Environmental Health. The report will be signed by a State-Certified Engineering Geologist. Recommendations will be presented for further ground water investigation or remediation if warranted. The report will present the results of the ground water monitoring program and soil venting remediation. Copies of the report would be distributed to the above agencies for their review.

7.0 SAMPLING AND ANALYSIS PLAN

The following protocol of standard operating field procedures applies to all work done under this work plan including future amendments to the scope of work:

7.1 BORING AND WELL DRILLING OPERATIONS

- Boring and well construction procedures will follow guidelines recommended by the California Regional Water Quality Control Board and Zone 7, Alameda County Flood Control and Water Conservation District. The Health and Safety Plan will be enforced always during the drilling. Tailgate safety meetings will be held before beginning work each morning to update the safety plan with the results of the previous days work and investigation.
- Permits required for drilling the soil borings or installation of monitoring wells will be obtained before the start of work from the Alameda County Department of Environmental Health and Zone 7. A copy of the permit will be present on site during drilling operations.
- Monitoring well borings will be drilled with a truck-mounted drilling equipment, using continuous-flight hollow-stem auger of at least 8 inches outer dimensions. Soil borings B-12, B-13, and B-16 will be drilled and sampled using hand augering and sampling equipment. All other soil borings will be drilled and sampled using truck-mounted equipment.
- The drilling contractor will possess a valid C-57 Water Well Contractor's License. The contractor will have a current Statement of Responsibility or Workmen's Compensation Certificate on file with the local permitting agency.
- An experienced geologist or soils scientist will be 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. All work will be performed under the supervision of a State-certified engineering geologist.
- Borings for soil investigation, will only extend to the water table.
- If lithologic conditions permit, for the borings for the monitoring wells will extend approximately 15 feet below the surface of the water table.

- Borings, not completed into ground water monitoring wells, shall be backfilled with neat, Portland cement.

7.2 SOIL SAMPLING

Soil sampling in all the borings will commence at a depth of approximately two to five feet below surface grade. Soil samples will then be recovered at five-foot increments, or from soils that appear contaminated or at lithologic changes. This sampling sequence shall continue to the depth of the water-saturated zone, estimated at 8 feet below grade. Soil sampling will follow the guidelines presented in ASTM Method D 1452-80, Standard Practice for Soil Investigations and Sampling by Auger Borings.

- A modified California split spoon sampler, fitted with 2 inch X 6 inch, brass liners will be driven ahead of the auger to collect relatively undisturbed soil samples from all borings.
- Soil sampler casings will be disassembled, steam-cleaned or cleaned in soapy water. The casing is then rinsed with clean tap water and finally with de-ionized water, then allowed to air-dry. The cleaned casings will then be reassembled with similarly cleaned and dried brass, sample liners. The sampling will be carefully lowered into the hollow stem of the augers or hand augered bore hole for the collection of the sample.
- Upon withdrawing the sample casing from the auger or bore hole, the casing will be disassembled. The condition of the sample liners will then be visually inspected. If in good condition the soil samples in the bottom brass liner (in the sampling casings) will be taken as the samples to be considered for chemical testing. Samples will be labeled and sealed in the field in their original liners. The ends of the sample liners will be capped with aluminum foil, and sealed in place by clean plastic caps and tape.
- The surfaces of drilling and sampling equipment will also be visually examined for evidence of petroleum residues and/or sheen.
- The remaining liner(s) 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 using ASTM Method D-2488-84 for visual description and identification of soils.

- Soil materials from the remaining liners will also be extruded into a clear plastic ziplock bag and immediately sealed. The soil material will then be broken into small pieces. After approximately five minutes, the probe of a hydrocarbon vapor monitor will be inserted into the bag to screen for the presence of petroleum hydrocarbons. This information, along with field observations, will be used for the selection of samples to be submitted for laboratory analyses. 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, well construction, and any unusual characteristics noted that may suggest the presence of chemical contamination.
- A bag of the aquifer material in each well will be recovered for laboratory sieve analysis. This information will be used to design subsequent wells, if needed.
- Based upon the results of field screening, selected representative soil samples will be submitted to the environmental laboratory for chemical analyses. All samples retained for chemical analysis will be stored on ice in a clean, covered cooler-box for transport to the laboratory. Duplicate samples will be refrigerated.

7.3 WELL CONSTRUCTION

- The proper well or street permits will be obtained from the local regulating agencies. If required, an inspector from applicable agencies will be present to witness the installation of the annular seal. The licensed well driller will submit the required State Well Drillers Report to the California Department of Water Resources.
- Well borings will be advanced to a maximum of 15 feet below the depth which the saturated zone is first encountered, or five feet into a perching clay aquitard layer. Only one aquifer will be penetrated by the boring or well. If needed, separate borings will be used to sample different aquifers.
- A 2-inch ID, National Sanitation Foundation (NSF) specified, Schedule 40 PVC blank, well screen will be used as the well materials. Well screen will be of 0.010-inch continuous slot size. Sections will be threaded and screwed together without the use of petroleum-based cement. A threaded end cap will be used at the bottom of the well. An

optional one to five foot blank silt trap may be placed at the bottom of the well screen. See Plate 6, Ground Water Monitoring Well Construction Plan.

- If site conditions permit, the slotted pipe will extend two feet above the free-water surface to form a sensing zone. The annulus of the perforated section will be packed with clean number 3 or finer Monterey sand, or equivalent, for the length of the saturated zone and shall extend 2 feet above the well slot (or four feet above the free-water surface). About one foot of bentonite slurry or pellets will be placed and constructed on top of the sand envelope pack. The well casing, screen, well pack, and bentonite spacer will be placed through the hollow-stem auger. The well casing materials will be steam cleaned prior to inserting into the hollow-stem auger.

- A class-A cement or cement-bentonite annular seal will extend from the bentonite spacer to surface grade.

- The top of the boring will finished with a street-grade Christy box which will be concreted into place. The surface of the concrete and Christy will be sloped to keep standing water away from the wellhead.

- The top of the well casing will be locked to prevent contamination and tampering. Above-grade or at-grade well completion will depend upon the final well location and traffic conditions. Above grade completion will require an eight (8)-inch diameter locking, steel protective casing set into a concrete pad. The wellhead will be protected with a watertight cap.

7.4 WELL DEVELOPMENT

- Wells will not be developed until 72 hours following placement of the cement seal.

- Equipment inserted into the well during development will be decontaminated by washing or steam cleaning before and after its use.

- Wells will be developed (evacuated) until the water is visually free of fine-grained sediments or until field measurements of Ph, electrical conductivity, and temperature stabilize. A minimum ten well volumes of water will be removed during development of the well.

7.5 GROUND WATER SAMPLING

- No groundwater sampling will begin until 48 hours following well development. Before purging, the water level elevation will be measured with an electric sounder, or a marked steel tape. A clear, dedicated, disposable PVC bailer will be used to observe the presence and thickness of free product present on the water surface and to purge the well.
- A minimum of 4 well volumes of stale water will be purged from the well before the collection of the sample. The water parameters of temperature, conductivity, and optionally Ph will be periodically monitored to verify stabilization. Well stabilization is defined when three consecutive water parameter measurements vary by no more than 10 percent.
- The ground water samples will be recovered from the borings using a clear Teflon sampling bailer with a stopcock sampling attachment. A field log will be maintained of purging and sampling procedures.
- All water retained for chemical analysis will be placed in clean Teflon screw-cap 40 ml. VOC vials for the TVH as gasoline and BTEX samples, one-liter amber glass bottles for the TEH as diesel samples, and one liter amber glass bottles for the petroleum oil and grease samples. The vials and bottles will be topped-off to avoid air space, and screw-cap sealed. All full 40 ml VOA vials will be inverted to look for air bubbles, and sampled again if air bubbles are observed in the vial.
- One trip blank or equipment blank will be taken for each well sampling episode at the site. The water sample trip blank will be provided by the environmental laboratory performing the chemical analysis. Deionized water provided by the laboratory will be poured into the bailer and, in turn, into the sample containers to provide an equipment blank.

7.6 LABORATORY ANALYSIS

- All chemical sampling, handling, and storage will be conducted according to Environmental Protection Agency and Regional Water Quality Control Board guidelines for the investigation of suspected underground storage tank leaks.
- The samples will be delivered to the laboratory within one day of its 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.
- Soil samples, recovered from the vicinity of the former fuel tank location, will be chemically analyzed for total volatile hydrocarbons (TVH) as gasoline with benzene, toluene, ethyl benzene, total xylenes (BTEX) distinction (EPA Method 8015/8020), total extractable hydrocarbons (TEH) as diesel (EPA Method 8015). One soil and ground water grab sample will be chemically analyzed for purgeable halocarbons (Ph; EPA Method 601/8010).
- Soil samples recovered from the vicinity of the former under ground waste oil tank and barrel storage areas, will be additionally analyzed for total petroleum oil and grease (TOG; SM 5520 F).
- Ground water samples recovered from MW-1, will be chemically analyzed for TVH gasoline, BTEX, TEH, and Ph. Groundwater samples recovered from MW-2 will be chemically analyzed for these constituents as well as TOG.

7.7 SAMPLE RECORDS AND CHAIN OF CUSTODY

- All samples 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).
- 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 of. 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
- laboratory sample number

• 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 hard copy of the laboratory Certified Analytical Report and the completed chain of custody will be provided with the technical report.

7.8 DECONTAMINATION

• The drilling auger and equipment will be steam-cleaned before arriving at the project site. Steam cleaning equipment will be present on site during drilling and well installation.

• Between borings at the site, the augers will be steam-cleaned at a location well away from the proposed borings, or adequate lengths of clean auger will be available to complete all of the borings without reusing auger sections. Sufficient dedicated well purging equipment will be available to purge each well independently.

• All sampling equipment and bailers will be thoroughly steam-cleaned or cleaned in soapy water, rinsed with clean tap water, and finally rinsed with de-ionized water before the collection of each set of samples. Simple Green, Alconox, or TSP soap will only be used to clean equipment.

7.9 STORAGE FOR DISPOSAL

- During the drilling operations, adequate number of 55-gallon drums (DOT approved) will be on site to contain potentially contaminated materials and drill cuttings. The drums will then be labeled as to their contents. Alternately, the cuttings and materials are to be on a stockpile with plastic sheeting and side berm, then securely covered with plastic sheeting. Disposing or treatment can commence upon receipt of laboratory analysis. The Client will authorize these activities prior to commencement. The treatment stockpile will be within a secure area unavailable to public access.
- Developed and purged water will be collected in clean 55-gallon liquid drums for disposition or treatment within 90 days once laboratory analysis results are available dependent upon client authorization and funding. Barrels will be labelled immediately upon use and stored in a secure area.
- The cuttings and the soil samples not retained for chemical analysis will be placed in 55-gallon drums until their chemical disposition is determined, and then appropriately disposed.

8.0 QUALITY ASSURANCE AND QUALITY CONTROL

8.1 OBJECTIVE

The objective of quality assurance and quality control is to provide environmental sampling and analysis data of known and acceptable quality. To meet this objective, field and laboratory quality control procedures will be implemented.

8.2 SOIL BORINGS

All drilling augers will be thoroughly steam-cleaned prior to visiting the site. Borings (for both soil sampling and monitoring well installation) will be drilled by a State-licensed C-57 contractor and under the supervision of a State-licensed Engineering Geologist.

8.3 SOIL SAMPLING

All chemical sampling, handling, and storage will be conducted in accordance with Environmental Protection Agency and Regional Water Quality Control Board guidelines for the investigation of suspected underground storage tank leaks.

Soil sampling shall be performed as described above. Actual sample depths may vary depending upon conditions encountered during the field drilling and/or soil sampling. Soil sampling will adhere to the guidelines presented in ASTM Method D 1452-80, Standard Practice for Soil Investigations and Sampling by Auger Borings. Soils samples will be taken with California Modified split-spoon sampler. The sampler, containing 3 2-inch (O.D.) by 6-inch (length) clean brass sampler liners, will be carefully inserted into the hollow stem of the continuous-flight augers or bore hole. Using a 140-pound hammer, falling a distance of approximately 30 inches, the sampler will be driven at least one foot into undisturbed materials beyond the bottom end of the auger. The number of blows necessary to drive the sampler one foot will be recorded on the boring log.

Samples retained for chemical analysis will be stored on ice in a clean, covered cooler-box for transport to the laboratory. Duplicate samples will be refrigerated. The center core material will be extracted from the samples liners in the laboratory for chemical testing.

Cuttings from drilling activities, and soils samples not retained for chemical analysis will be placed in DOT approved 55-gallon drums on the site. Upon determination of their chemical disposition, these materials will be appropriately disposed of.

8.4 SAMPLE CUSTODY

All samples collected will be labeled with the following information: job name, sample number, location, date and time collected, name of collector, and any pertinent remarks. Field records of soil samples will be maintained on a field log. All field records will be written in ink. Copies of all field documentation will be maintained in an on-site file and the originals will be sent to the main office. During temporary storage of samples on-site and during transportation to the laboratory, the samples will be kept in an ice chest cooled to approximately four degrees centigrade by ice.

Chain of custody forms will be filled out by the sample collector before releasing the sample for storage or transportation. The form will then be routed with the samples through storage, transportation, and laboratory analysis. Copies of the completed chain of custody forms will be provided to the laboratory. The field log book will document when samples are released from storage for transport to the analytical laboratory.

When the samples arrive at the laboratory, a laboratory representative 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.

8.5 LABORATORY QUALITY ASSURANCE

All samples collected during this project will be analyzed by a State Department of Health Services (DHS)-certified laboratory for the selected parameters in accordance with standard EPA-approved methods. All laboratory quality assurance/quality control (QA/QC) information will be made available in a Summary Report prepared by the laboratory. Laboratory quality control measures will include those required by the DHS under their Hazardous Waste Laboratory Certification Program.

In addition, a trip blank obtained from the laboratory and/or a field blank will be submitted for analysis.

8.6 DATA VALIDATION AND REPORTING

Data collected and used in project reports will be appropriately identified and will be included in a separate appendix in the final report. All data will be reviewed. Apparent abnormalities (e.g., unexpected order-of-magnitude difference among samples and/or instrument readings) will be investigated by reviewing procedures, field instrument procedures and calibrations, and laboratory QC results.

9.0 SITE SPECIFIC SAFETY PLAN

9.1 INTRODUCTION

This document describes the health and safety procedures for the activities planned in performing a preliminary site investigation at **1726 Park Street, Alameda, California**. All personnel and subcontractors will follow this plan. The prime responsibility for employee safety lies with each company involved in the work for its own employees. 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 and are responsible for working in a safe manner.

9.2 PROJECT DESCRIPTION

This subsurface investigation involves the sampling of soils. The work to be performed will be the drilling and sampling of soil borings. Soil samples will be collected from each boring.

9.3 KEY PERSONNEL

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

Melinda Henry-Dare Phone: (510) 522-1228
(Client Contact)

Michael Princevalle Phone: (510) 232-8366
TMC Project Manager
and Site Safety Officer

Tom Edwards Phone: (510) 232-8366
President, TMC

Alameda Hospital Phone: (510) 523-4357
2070 Clinton Ave
(Clinton and Willow)

9.4 PROJECT MANAGER AND SAFETY OFFICER RESPONSIBILITIES

The responsibilities of the Key Personnel are:

- o To conduct initial site safety training for all project field team members as described in this document,
- o To assure all field team personnel have read and understand the Health and Safety Plan,
- o To assure all work performed by field personnel is conducted in accordance with safe practices outlined in this plan,
- o To coordinate with safety personnel fire-watch, traffic control and site security,

- o To monitor activities to assure the proper use of personal protective equipment such as hard hats, protective eye wear, gloves, coveralls, respirators, etc,
- o To monitor ambient hydrocarbon vapors,
- o To make certain personnel safety equipment is in a usable condition, and
- o To shut down or modify field work activity based on criteria presented in the site safety plan

9.5 SUB-CONTRACTOR RESPONSIBILITIES

The responsibilities of the subcontractor with respect to safety are:

- o To read, understand and accept this Health and Safety Plan,
- o To assure all members of its crew attend the safety training program,
- o To make certain equipment and other machines are properly inspected and maintained and are in compliance with applicable sections of the California Health and Safety Code,
- o 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,
- o To assure each employee working at this site read and comply with this Health and Safety Plan, and
- o To enforce corrective action under the direction of the Site Safety Officer.

9.6 FIELD TEAM MEMBER RESPONSIBILITIES

The responsibilities of the field team members are:

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

9.7.0 HAZARD EVALUATION

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

The anticipated activities of this project include:

- o Drilling and sampling of borings,
- o Collection of soil samples,
- o Monitoring of ambient hydrocarbon concentrations during project activities.

The general types of hazards associated with this project are:

- o Mechanical hazards: swinging objects, machinery, etc,
- o Electrical hazards: buried cables, overhead power lines,
- o Chemical hazards: gasoline, diesel, waste oil
- o Fire hazards: natural gas and product lines, flammable petroleum hydrocarbons, and motor driven equipment,
- o Thermal hazards: heat stress,
- o Acoustical hazards: excessive noise created by machinery.

Job hazard analyses associated with each major work activity are presented in the following sections.

9.7.1 HAZARD EVALUATION: SOIL BORINGS

Drilling soil borings could potentially expose field personnel to the following known hazards:

- o Chemical hazards:
 - Exposure to various chemical substances, including but not limited to, petroleum hydrocarbon liquids and vapors from gasoline and diesel fuel.
- o Physical hazards:
 - operating machinery,
 - falling objects, and
 - exposure to outside temperature extremes.
- o Fire, Electrical and Noise Hazards:
 - underground gas and product lines, and
 - excessive machinery noise.

Due to the nature of drilling, there is a risk for electrical shock from overhead and underground electrical lines. There is also a risk of physical injury from moving machinery and heavy drilling equipment. Explosive hazards exist when fuel concentrations in the bore hole reach explosive levels; > 10% LEL.

9.7.2 HAZARD EVALUATION: SOIL SAMPLING

The sampling of soil may expose personnel to the same potential health hazards as listed above. Soil will be collected for analyses from borings. Samples may contain high levels of hazardous chemicals creating the potential for chemical exposure through inhalation and skin contact. Sample collecting may pose one of the greatest risks of chemical exposure for site workers.

9.7.3 HAZARD EVALUATION: PACKAGING AND SHIPMENT OF SAMPLES

The potential for overexposure to hazardous gasoline constituents still exist 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 minimal provided the containers are prevented from leaking or breaking.

9.8.0 HAZARD CRITERIA

9.8.1 HYDROCARBON VAPORS

Hydrocarbon vapors expected to be encountered consist of gasoline and diesel fuel. Exposure to elevated levels of hydrocarbon vapors presents potential health risks that need to be properly controlled. Work practices and methods will be instituted to limit exposures. Where elevated exposures persist, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapors. The hydrocarbon vapors expected to be encountered during project activities are composed of a variety of volatile refined petroleum compounds. The majority of these have limited toxicity requiring minimal controls at the concentrations expected.

Petroleum fuel consists of hundreds of chemical compounds. There are certain compounds such as benzene that present significant hazards and must be properly controlled. To do so, a working limit of 100 ppmv total hydrocarbon is proposed as the maximum acceptable level of exposure without respiratory protection. In a typical situation with 1% of the hydrocarbon vapors being benzene, a 100 ppmv concentration of total hydrocarbon will result in a breathing zone of less than 1 ppmv benzene. This level is one tenth of the current occupational Permissible Exposure Limit (PEL) for an 8 hour exposure to benzene.

9.8.2 ACTION LEVELS OF HYDROCARBON COMPONENTS IN PETROLEUM FUEL:

Gasoline	>300ppm	PEL	LEL > 10%
Benzene	> 1ppm	"	Oxygen <19.5%
Toluene	>100ppm	"	
Xylene	>100ppm	"	
Ethyl Benzene	>100ppm	"	

A hydrocarbon vapor analyzer will be used to measure real time breathing zone concentration for comparison with the 100 ppmv working limit. When a persistent level of 100 ppmv is observed, appropriate respirators will be donned and other vapor measurements will be made. If hydrocarbon vapors exceed 1000 ppmv or 10 ppm benzene, work will be stopped. The field crew will be instructed to stay up wind and methods will be applied to subdue fugitive vapor emissions such as sprinkling soil with

water, or the use of copus blower. The site Safety Officer will make such determinations.

If LEL is >10% in or around the tank, work must stop and not commence until determined safe and/or LEL% <10. If oxygen levels in the immediate work area are < 19.5%, work must stop until determined safe and/or levels are >19.5%.

Symptoms Of Acute Overexposure: Gasoline and gasoline vapors may be irritating to the skin, eyes and respiratory tract. Gasoline vapors may effect the central nervous system and may cause headaches and dizziness.

Oxygen Deficiency: May cause dizziness.

9.8.3 HEAT STRESS AND NOISE

A hazard exists when individuals are required to work in warm temperatures, particularly while wearing impervious protective clothing. When the ambient air temperature exceeds 65 degrees, heat stress may become a problem. If these conditions are encountered, the following precautions on the next page will be taken:

- o During day-to-day field work, the on-site supervisor will be alert for the signs and symptoms of heat stress.

Field workers will be observed for the following signs and symptoms of heat stress:

- o profuse sweating, or complete lack of sweating,
- o skin color change,
- o increased heart rate,
- o body temperatures in excess of 100 degrees as measured by thermometers, and
- o vision problems.

Any team member who exhibits any of these signs or symptoms will be removed immediately from field work and be requested to consume electrolyte fluid or cool water while resting in a shaded area. The individual will be instructed to rest until the symptoms are no longer recognizable. If the symptoms appear critical, persist

or 29' 29orse, immediate medical attention will be sought.

When working around mechanical equipment the potential exists for exposure to excessive noise. To deal with the health hazards of excessive noise, ear plugs will be provided.

9.9 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

This section specifies personal protective equipment required for the various tasks of this project.

9.9.1 SOIL BORINGS

Respiratory Protection: all field personnel will be required to have available an air purifying respirator with organic vapor cartridges. The respirators will be required based on criteria presented in this safety plan. All respirators must be NIOSH approved, canister-equipped for all organic vapors up to 1000 ppm.

Protective Clothing: all field personnel who handle contaminated soil or liquid will wear impervious coveralls and butyl rubber gloves. Impervious coveralls will not be required if soil or water is not visibly contaminated, or if vapor measurements are below 500 ppmv. Level "D" protective clothing and equipment will be worn at all times on the job site. All employees will have level "C" protective equipment available at all times. The site safety officer will monitor air borne contaminant levels for determination of when to don level "C" equipment.

Head Protection: Field personnel will wear non-metallic safety helmets.

Foot Protection: Field personnel will wear neoprene rubber boots with steel toes. Under non-liquid exposure conditions, leather boots with steel toes and shanks are permissible.

Ear Protection: Field personnel, based on noise levels, may be required to wear earplugs during soil excavation.

Eye Protection: Field personnel will wear chemical-resistant safety glasses with attached side shield where splashes of potentially hazardous liquid or particles are likely.

Soil Sample Collection

Personnel who are likely to be exposed to contaminated soil samples will be required to wear the same personal protective equipment as outlined above.

9.9.2 PACKAGING AND SHIPMENT OF SOIL SAMPLES

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 which are to be shipped for analysis must comply with Department of Transportation (DOT) regulations, as follows:

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

10.0 WORK ZONES

During soil excavation and well drilling operations, a work zone around the immediate vicinity of the project will be established and taped off. Only authorized personnel will be permitted to enter the work zone. Authorized personnel will include those who have duties requiring their presence in the work zone and have read this site safety plan. Work zones are also created to aid in the decontamination of equipment and personnel. The following describes the zones to be established:

- o **Exclusion Zone:** A 75 foot circle around the work area will be defined before work starts. The area inside the circle will constitute the "Exclusion Zone". The exclusion zone constitutes the area where potentially hazardous airborne contaminants and physical hazards to the workers exist. Full personal protection must be available to all personnel in this area. The size of the Exclusion Zone may be changed to accommodate site conditions and to ensure contaminant containment.

- o Contamination Reduction Zone: A formal decontamination zone should not be required during the preliminary investigation. However, an area will be designated in the event extreme gasoline contamination is encountered. The decontamination zone will be an area where personnel can clean protective equipment. A waste container will be placed outside of the exclusion zone so contaminated equipment can be placed inside and covered.
- o Support Zone: A Support Zone, the outermost zone, must be defined for each field activity. Support equipment is located in this uncontaminated or clean area. Normal work clothes are appropriate within this zone. The location of this zone depends on factors such as accessibility, wind direction (it should be up wind of excavation), and resources (e.g. roads, utilities, shelter).

11.0 DECONTAMINATION PROCEDURES

Petroleum hydrocarbon liquids and vapors are anticipated. Due to the volatile nature of the hydrocarbons that may be encountered during the initial excavation and sampling operations, decontamination of equipment and vehicles will be of minimal importance since the volatile hydrocarbons will rapidly vaporize. Therefore, no formal decontamination procedure will be followed with the exception of general cleaning. 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 at the end of the work day. Soap, water and towels will be provided at the site for this purpose. The field personnel will also be instructed to shower at home at the end of each work day.

As work progresses, the nature of materials handled and the extent of contamination may possibly require formal decontamination procedures and delineated work/clean zones. However, we do not expect that such formal procedures will be necessary at this site and will only proceed at the Safety Officers discretion.

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.

The field team should remove their personal protective clothing in the following sequence:

Step 1: Move out of the exclusion zone and into the decontamination zone. Do not remove personal protective equipment.

Step 2: Obtain decontamination solutions and decontaminate the spades, shovels and other equipment by brushing them under a water rinse. A high-pressure steam cleaner may also be used for decontamination. All wastes and spent decontamination liquids will be properly contained.

Step 3: Remove outer gloves and coveralls and place them inside a garbage bag. Keep the air purifying respirator on.

Step 4: Move to the support zone and remove the respirator.

12.0 MONITORING PROGRAM

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

12.1 AMBIENT VAPOR READING

A hydrocarbon vapor detector will be used during drilling and excavation activities. This instrument will be used to measure both excavation and breathing zone concentrations of hydrocarbon vapors. The instrument will be calibrated on a regular schedule 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 30 minutes when hydrocarbon vapors indicate levels above 30 ppmv. All readings will be recorded in a field notebook.

12.2 SAFETY AND HEALTH TRAINING

This section summarizes the content of the health and safety training to be provided to the field team. It may be used as a future reference for the field team concerning health and safety matters.

Each section of this plan is intended to provide information to accomplish safety for all workers. It will be the responsibility of the Project Safety Officer to assure the field team has access to this plan, reads the safety procedures, and understands how to conduct work safely. It will be the individuals responsibility to bring to the attention of the Safety Officer any portion of this plan and related training they do not fully understand. Prior to beginning site work, the field team will discuss the contents of this plan and make sure all members are adequately informed in safe work practices.

All field team members will be instructed regarding potential health and safety hazards. Specifically, the following topics will be covered in the initial training session:

- o Physical safety hazards, (e.g., muscular stress and strain, unguarded equipment, electrical shock, overhead hazards, etc.),
- o Emergency procedures, (vapor controls, medical and fire emergencies, etc.),
- o Explosive/flammability hazards,
- o Hazardous materials that may be encountered and potential routes of exposures, (inhalation and skin contact with petroleum hydrocarbons),
- o Physical hazards such as noise and heat stress,
- o Hygienic practices, (washing up before lunch / coffee breaks, no eating/drinking/smoking allowed in taped off areas, etc.), and
- o Types, proper use, limitations, maintenance, inspection, and storage of protective clothing and equipment.

Personal protective equipment includes:

- o eye protection
- o gloves
- o coveralls
- o respirators
- o hard hats, and
- o hearing protection

Special emphasis will be placed on the use and limitations of respiratory protection. Half-mask respirators equipped with air purifying organic vapor cartridges will be used. Half-mask respirators and eye goggles will be used if eye irritation or skin contact exposure potential exists. Each individual will be responsible for the limitations and maintenance of half-mask and full-face respirators including qualitative fit testing, routine inspection, replacement of parts, cleaning, disinfection, and storage requirements. Written instructions and procedures concerning respirators and criteria for use will be provided for each field worker by the Site Safety Officer if needed.

13.0 MEDICAL MONITORING PROGRAM

Soil drilling work and well sampling is expected to involve active physical work and potential exposure to petroleum hydrocarbons, heat stress, noise and physical safety hazards common to subsurface operations. The work will require people of reasonable health with normal vision and hearing acuity. The companies involved with this project are responsible for assuring the health and fitness of their employees on this project. As a general rule, each worker should have clearance from a physician dated no later than one year prior to start-up of the project. This documentation should also indicate the employees' ability to perform the required work while wearing an air purifying respirator.

14.0 EMERGENCY RESPONSE PLAN

Emergency procedures listed in this plan are designed to give the field team instruction on how to handle medical emergencies and fires and explosions. The emergency procedures will be carefully reviewed with the field team during the health and safety training session.

Emergency Phone Numbers:

Fire Dept	911
Ambulance	911
Police	911
Hospital (Alameda)	(510) 523-4357
Site or Client Phone	(510) 522-1228
Poison Control Center	(415) 476-6600 or 1 (800) 342-9293
Chem Trec	(800) 424-9300
EPA Emergency Response	(415) 974-7511
State Office of Emergency Services	(800) 852-7550
Emergency Response/ (Erickson)	(510) 235-1393

14.1 INJURIES

Medical problems occurring on site will be handled quickly. Emergency telephone numbers will be written down and posted in the passenger compartment of the field vehicles. The local emergency numbers are:

Police, Fire and Rescue Dial 911

Emergency and First Aid Procedures:

Eye Contact: Flush with clear water for 15 minutes or until irritation subsides. See a physician.

Skin Contact: Wash thoroughly with soap and clean water.

Inhalation: Remove from area away from vapor/exposure. Call a physician and start resuscitation IMMEDIATELY if breathing has stopped.

Ingestion: DO NOT INDUCE VOMITING; call physician IMMEDIATELY.

Oxygen deficiency: Move out of oxygen deficient area into fresh air. Call physician and resuscitation IMMEDIATELY if breathing has stopped.

The field team will be instructed to seek immediate professional medical attention for all serious injuries. A first aid kit will be present at the work site for use in case of minor injuries. If anyone receives a splash or particle in the eye, the field team will be instructed to irrigate the eye for 15 minutes. Instruction will also be provided to wash any skin areas with soap and water if direct contact with contaminants has occurred.

14.2 FIRE AND EXPLOSION HAZARDS

Fires on site are of particular concern during soil excavation and removal activities due to the possibility of encountering flammable petroleum hydrocarbon liquid or vapors. During these activities the Site Safety Officer will be present and equipped with an explosive vapor monitor for area monitoring and a multi-purpose (A, B, C,) fire extinguisher.

The local fire department will be notified of the location and anticipated activities in order to minimize the fire risk to the surrounding neighborhood. In addition, any flammable material will be cleared away from the site prior to the start of work. If a fire does occur, the local fire department will be contacted immediately.

14.3 OPERATION SHUTDOWN

Under extreme hazardous situations the on-site supervisor, Safety Officer, or Project Manager may request that operations be temporarily suspended while the underlying hazard is corrected or controlled. If vapor measurements with the explosive vapor monitor show levels approaching explosive limits, operations will be stopped while the area is controlled. During this activity, all personnel will be required to stand up wind to prevent exposure to fugitive vapor emissions. The Safety Officer will have ultimate authority for operations shutdown.

15.0 COMMUNITY PROTECTION

To assure the community is protected from health and fire hazards, up wind and downwind monitoring with the hydrocarbon vapor monitor will be performed if the general work area has hydrocarbon levels exceeding 100 ppmv. If down wind monitoring indicates persistent levels above 30 ppmv at the perimeter of the work area, work will be shut down and vapor emission control efforts will be instituted until measurements demonstrate levels have dropped below 30 ppmv. An alternative approach of expanding the taped off area zone may be used to provide additional community protection.

16.0 RECORD KEEPING

The following record keeping requirements will be maintained in the program file indefinitely:

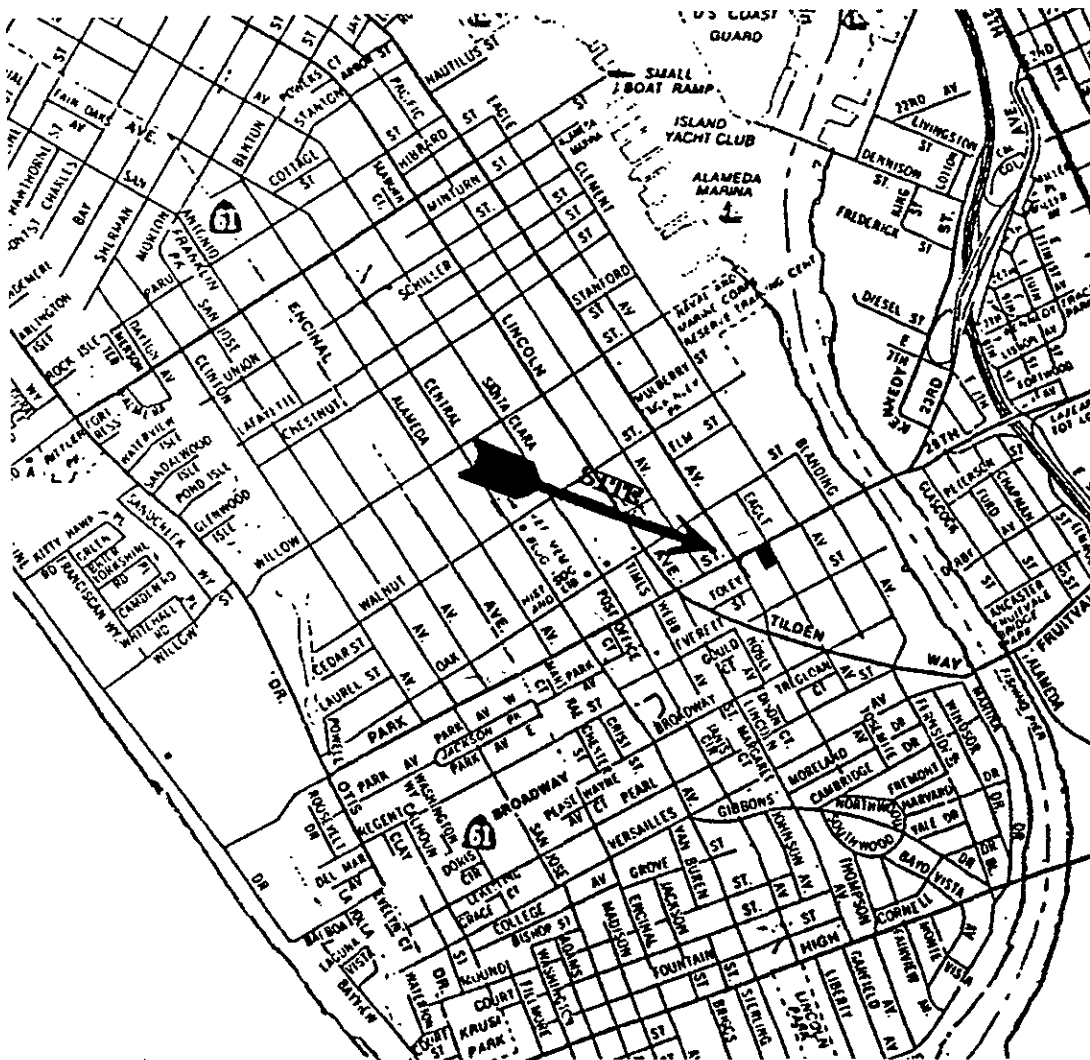
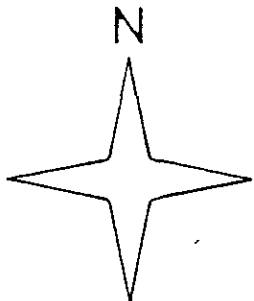
- o Copy of this Health and Safety Plan
- o Health and Safety Training Certification Form for Site Safety Officer
- o Any accident/illness report forms
- o Personal sampling results
- o Documentation of employees medical ability to perform work and wear respirators

Pertinent documentation will be provided to workers and agencies as required by Federal and State safety laws.

17.0 LIMITATIONS

TMC has prepared this work plan in accordance with EPA, RWQCB, and Alameda County Department of Health Services guidelines for investigating fuel leaks. Environmental regulations, on a local, state, and federal level, can vary significantly over time. Similarly, property conditions can change over time. Consequently, the conclusions and recommendations arrived at in the course of preparing this work plan are strictly applicable to the status of environmental regulations and the site conditions existing at the time **TMC** wrote this document. **TMC** cannot have complete knowledge of underlying conditions on the property.

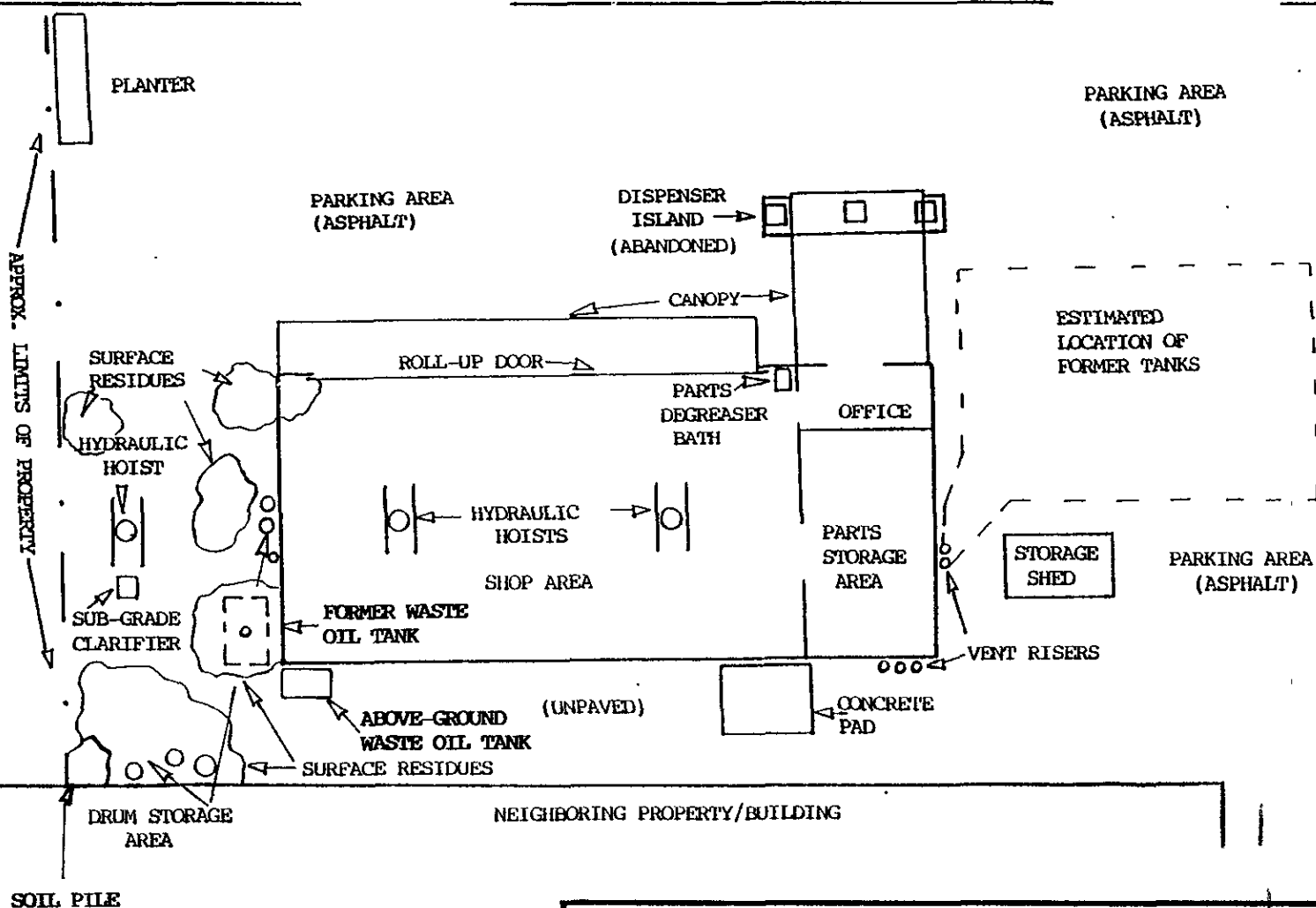
This work plan has been prepared for specific application to this site according to information derived from field work and off-site sources (i.e. records, conversations with persons knowledgeable about the site, etc.). Because this work plan contains information reported to **TMC** by other sources, errors or omissions may be present for which **TMC** cannot be responsible. The information in this document applies to present site conditions only. The opinions expressed herein are subject to revisions in light of new information, and no warranties are expressed or implied. The services described in this work plan will be performed in accordance with generally accepted existing environmental principles and regulations.



Photocopy from Thomas Bros. Map, 1988

TMC ENVIRONMENTAL, INC.		
SCALE: None	APPROVED BY:	DRAWN BY
DATE: 1-30-92		REVISED
SITE LOCATION MAP 1726 Park Avenue Alameda, California		
Job: 489101	DRAWING NUMBER Plate 1	

PARK AVENUE



APPROX. LOCATION OF NEIGHBORING GROUND WATER MONITORING WELL



TMC ENVIRONMENTAL, INC.

SCALE: 1" ± 15'

DATE: 8-15-91

APPROVED BY:

DRAWN BY MAP

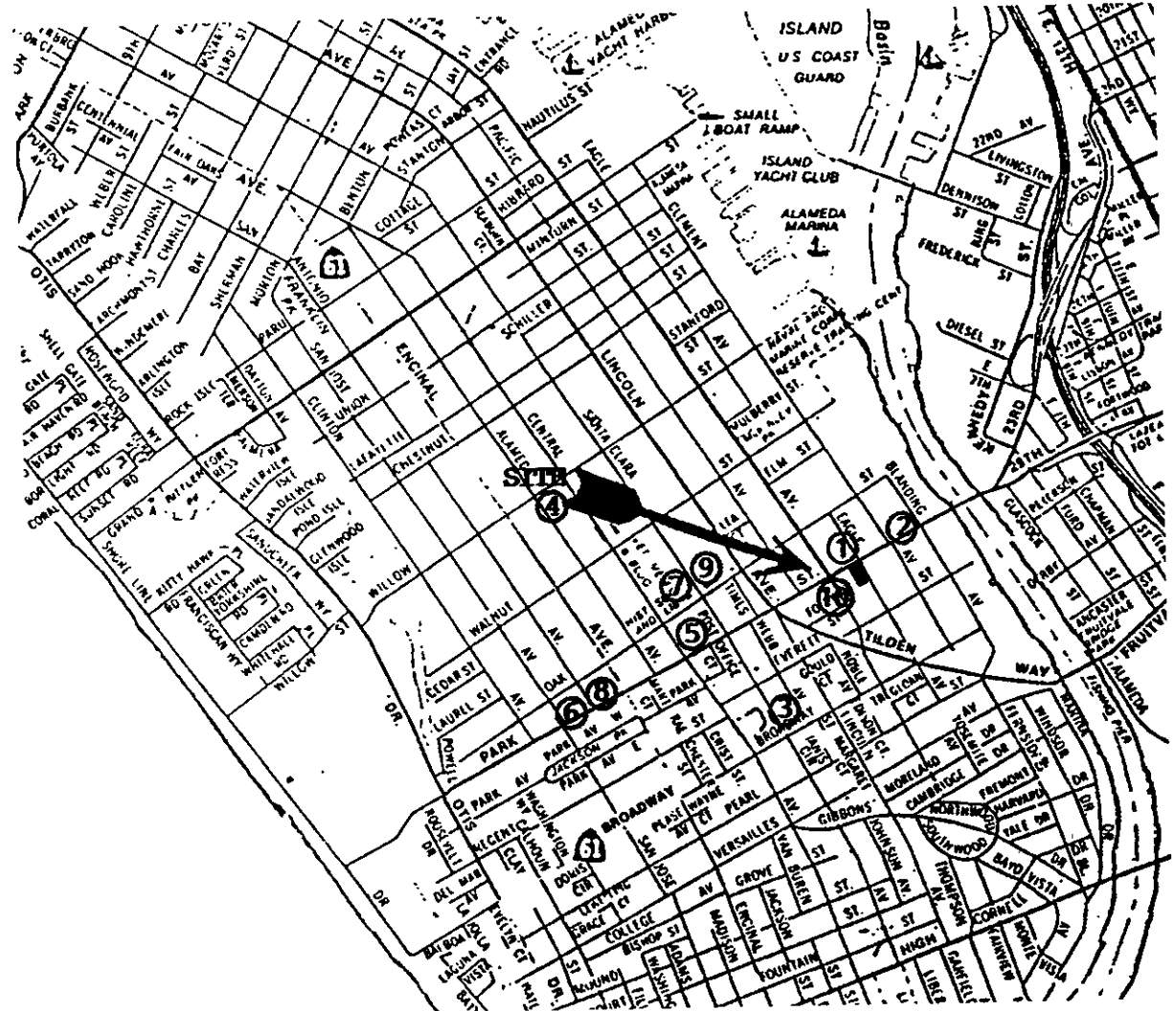
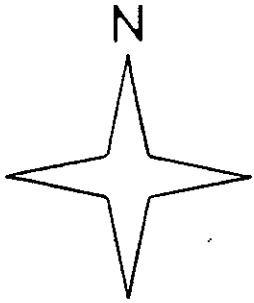
REVISED 12-5-91

SITE MAP
1726 Park Ave.
Alameda, California

Job: 489101

DRAWING NUMBER

Plate 2



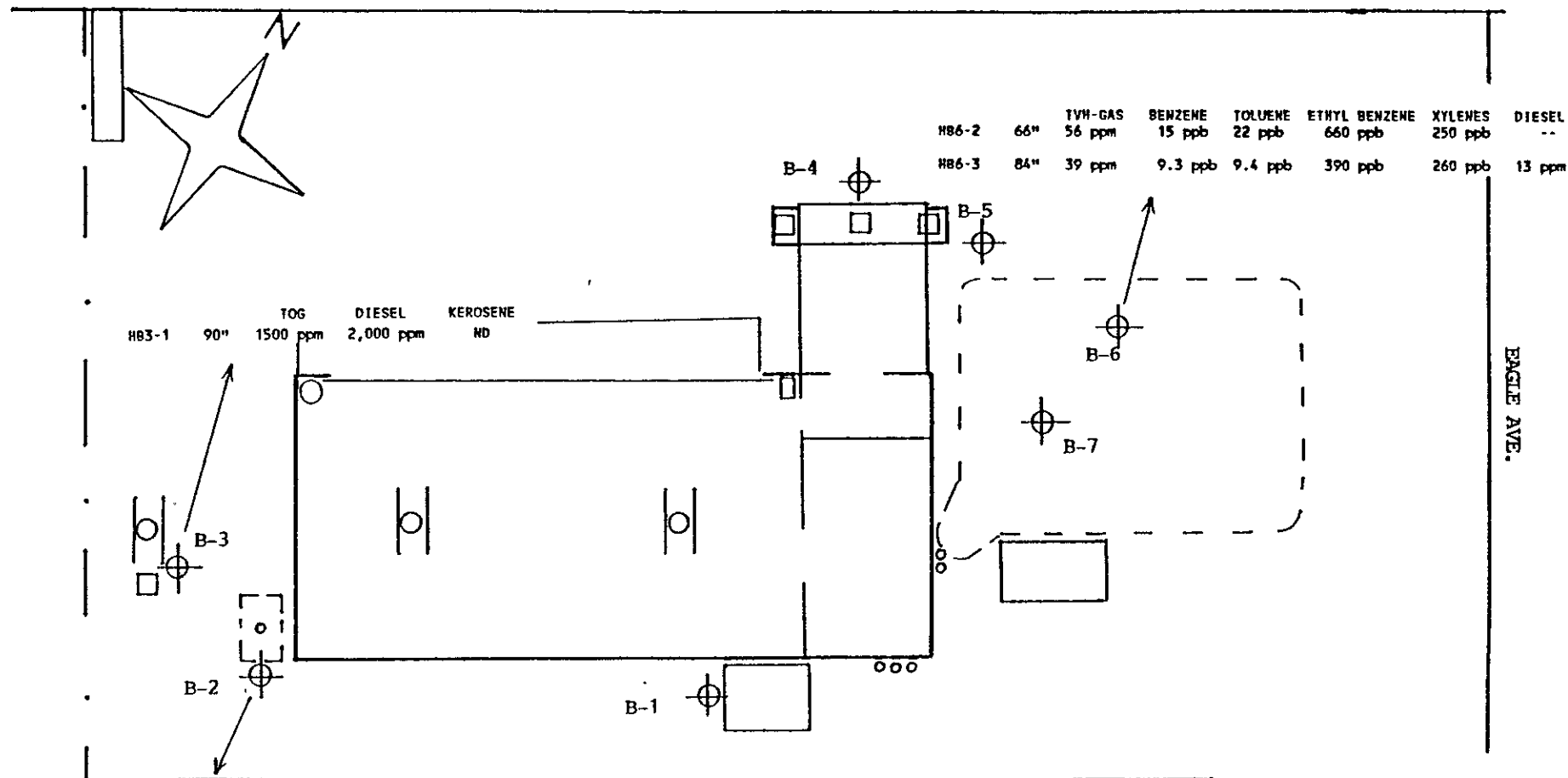
① Approximate Location of Reported Site

Photocopy from Thomas Bros. Map, 1988

TMC ENVIRONMENTAL, INC.

SCALE: None	APPROVED BY:	DRAWN BY
DATE: 8-15-91		REVISED
REPORTED SITES Alameda, California		
Job: 489101	DRAWING NUMBER Plate 3	

PARK AVE.



Boring	Depth	TVH-GAS	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	DIESEL
HB6-2	66"	56 ppm	15 ppb	22 ppb	660 ppb	250 ppb	--
HB6-3	84"	39 ppm	9.3 ppb	9.4 ppb	390 ppb	260 ppb	13 ppm

HB3-1 90" TOG 1500 ppm DIESEL 2,000 ppm KEROSENE ND

Boring	Depth	TOG	DIESEL	KEROSENE	NEIGHBORING BUILDING/PROPERTY
HB2-1	12"	340 ppm	30 ppm	ND	
HB2-3	87"	ND	ND	210	

KEY

- B-1 Approx. Location of Soil Boring
- HB3-1 Soil Sample Number
- 90" Depth of Soil Sample in Inches
- 340 ppm Chemical Analysis Results in Parts per Million

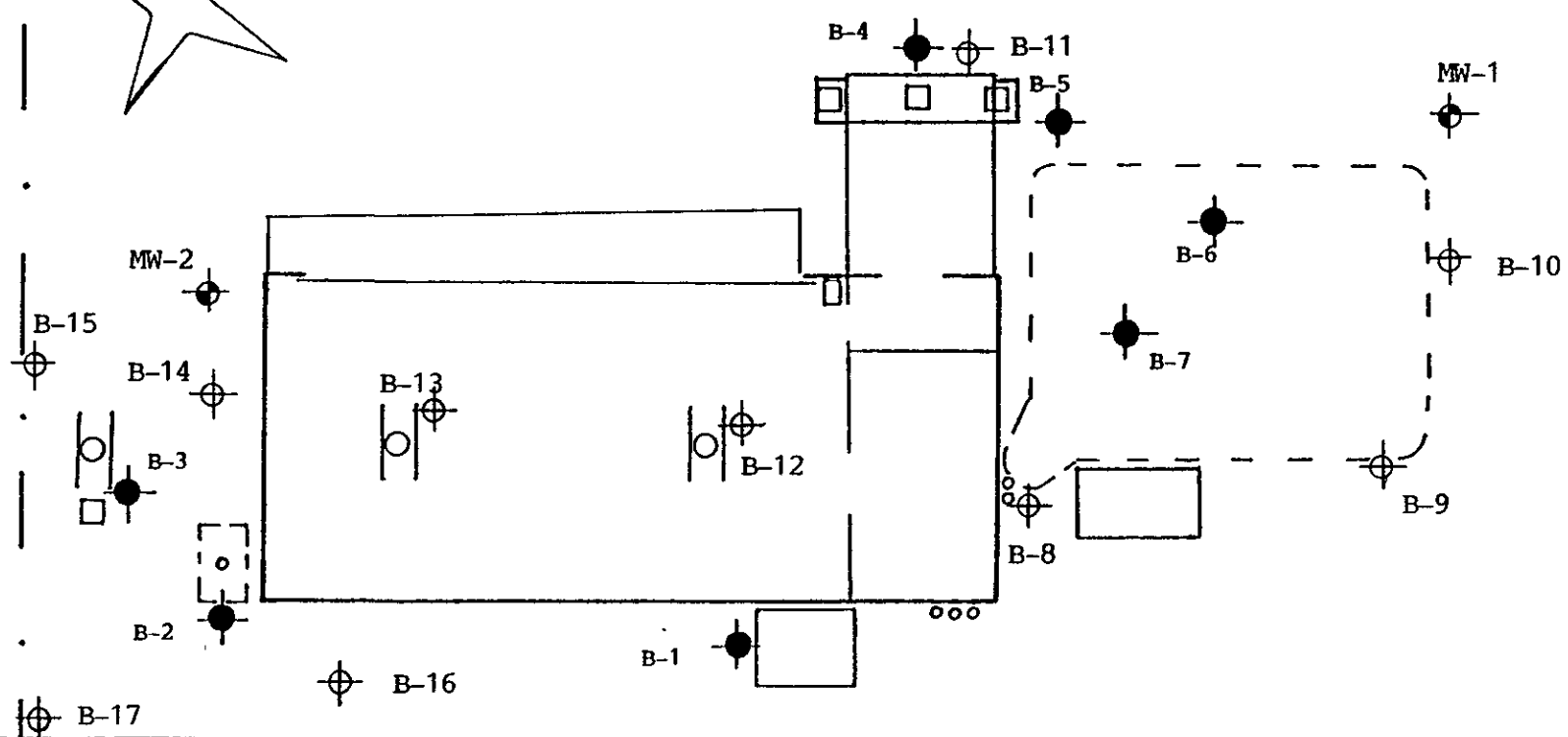
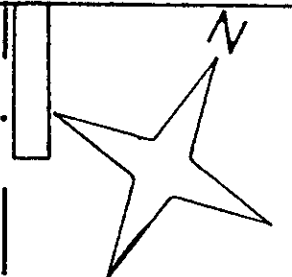
TMC ENVIRONMENTAL, INC.

SCALE: 1" ± 15'	APPROVED BY:	DRAWN BY MAP
DATE: 8-22-91		REVISED

BORING LOCATIONS AND CHEMICAL ANALYSIS
1726 Park Str., Alameda, California

Job: 489101	DRAWING NUMBER Plate 4
-------------	---------------------------

PARK AVE.



EMBLE AVE.

NEIGHBORING BUILDING/PROPERTY

KEY

- Approx. Locations of Previous Soil Borings (8-23-91)
- Locations of Proposed Soil Borings
- Locations of Proposed Ground Water Monitoring Wells

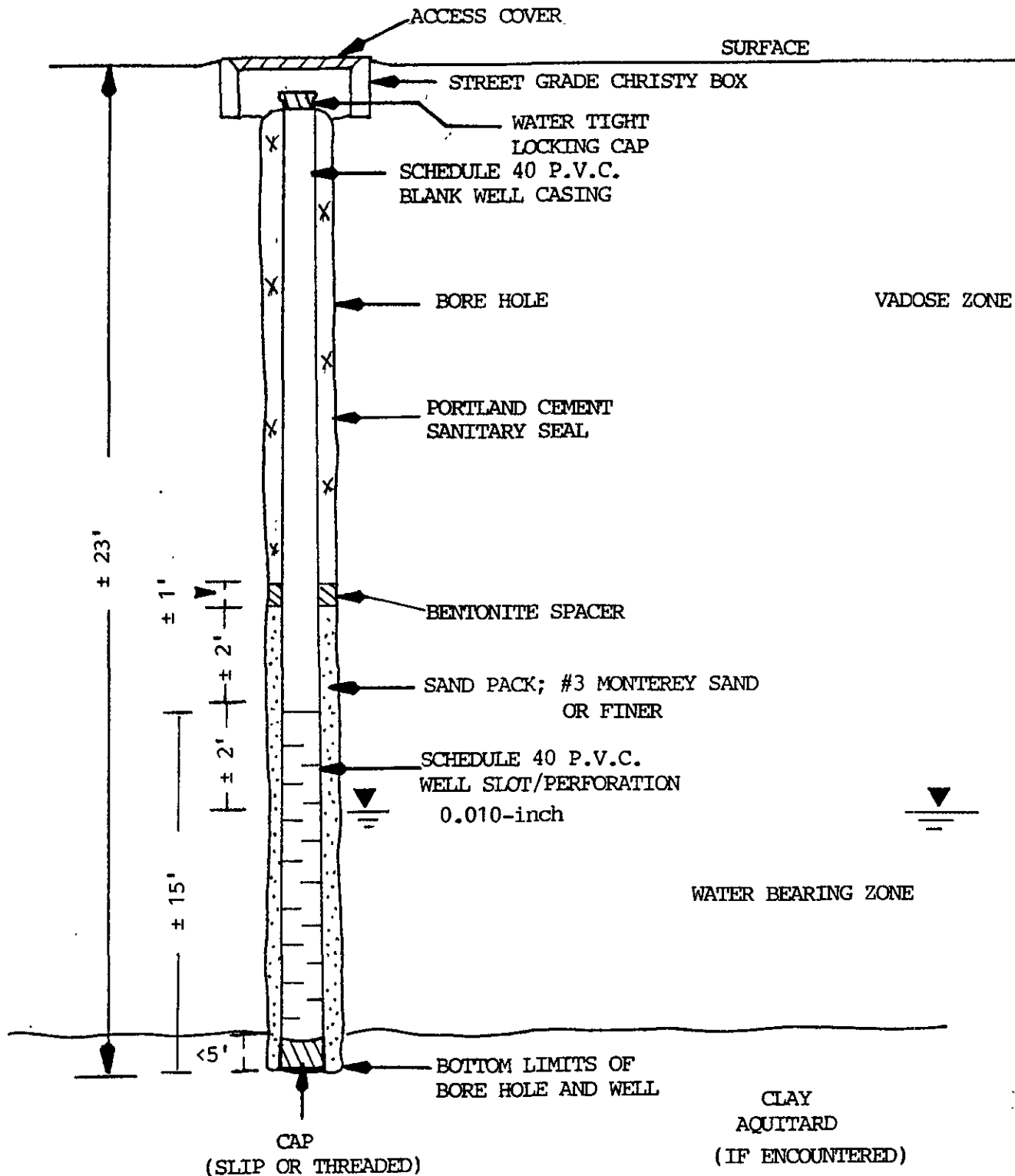
TMC ENVIRONMENTAL, INC.

SCALE: 1" ± 15'	APPROVED BY:	DRAWN BY MAP
DATE: 1-29-92		REVISED

PROPOSED LOCATIONS FOR
SOIL BORINGS AND MONITORING WELLS
1726 Park Avenue, Alameda, California

Job: 489101	DRAWING NUMBER Plate 5
-------------	---------------------------

GROUND WATER MONITORING WELL CONSTRUCTION PLAN



ATTACHMENT 1
TANK REMOVAL REPORT

TANK REMOVAL REPORT

THE ESTATE OF JOHN B. HENRY

1726 Park Street
Alameda, California

Project No. 489101

January 2, 1991

prepared for

**Melinda Henry-Dare c/o
John B. Henry Estate**
3312 Central Avenue
Alameda, California 94501

prepared by

TMC Environmental Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806

TABLE OF CONTENTS

for
TANK REMOVAL REPORT
The Estate of John B. Henry
Alameda, California

<u>Section</u>	<u>Description</u>	<u>Page</u>
1.0	INTRODUCTION	1
2.0	PURPOSE AND SCOPE OF WORK	1
3.0	TANK REMOVAL	1
4.0	SOIL SAMPLING BENEATH UNDERGROUND TANKS	2
5.0	RESULTS OF CHEMICAL ANALYSIS OF TANK SAMPLES	2
6.0	BACK FILL OF THE GASOLINE TANK EXCAVATION	3
7.0	LIMITATIONS	3

Attachments

1. ANALYTICAL RESULTS
2. MANIFEST
3. PERMIT

Plates

1. SITE MAPS

TANK REMOVAL REPORT

The Estate of John B. Henry

Alameda, California

1.0 INTRODUCTION

TMC (TMC Environmental, Inc.) removed one underground, waste oil tank on the property located at 1726 Park Street in Alameda, California, called the site in this report. The tasks completed during the tank removal and soil excavation agree with the guidelines of the local lead agencies, the Alameda County Department of Environmental Health and Alameda Fire Department.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of the work was to remove one 500-gallon, underground, waste oil tank.

The scope of the work included: 1) permitting of the tank removal; 2) removal of one 500 gallon gasoline tanks; 3) sampling the soil below the former underground tank; 4) providing for the laboratory analyses of the tank soil samples; 5) backfilling, compacting and resurfacing; and 6) this report explaining the methods and findings of the tank removal.

Documentation and sampling services were provided by TMC. The tank removal contractor was Bay Area Tank Removal of San Francisco, California.

3.0 TANK REMOVAL

The subject tank is one 500 gallon steel, waste oil tank. (see plate 1, site map) Prior to the tank removal Waste Oil Recovery Services removed approximately 180 gallons of water and waste oils from the tank. The hazardous waste manifest is attached to this report. On December 5, 1991, the tank and related lines were removed by Bay Area Tank Removal Company personnel. No corrosion holes were observed in the gasoline tank or lines nor was there evidence of soil contamination in the surrounding soils. The tank removal was witnessed by the Alameda Fire Department inspector. The Alameda County Health Department inspector, Mr. Miller was not present at the

site. However, Mr. Miller gave permission to remove the tank without his presence and instructed the Fire Inspector on the locations for soil sampling. When inerted, the tanks were transported by Erickson, Inc. to their transfer, storage and disposal facility in Richmond, California. The hazardous waste manifest and permits are attached to this report.

4.0 SOIL SAMPLING BENEATH UNDERGROUND TANKS

On December 5, 1991, TMC personnel recovered two soil samples as ordered by Mr. Miller (designated SS-1 and SS-2) from the gasoline tank excavation. The soil samples were taken at a depth of 6.5 feet at the bottom and south of the tank. No water was observed in the tank pit. No obvious petroleum contamination was noticed in the excavation. The soil sampling was witnessed by the Fire Inspector. The soil samples were submitted to a State certified Laboratory, Curtis & Tompkins, Ltd. of Berkeley, California for chemical analysis. Samples SS-1 and SS-2 were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel, Metals Cd, Cr, Pb, and zn, method 8010, method 8270 and total oil and grease.

5.0 RESULTS OF CHEMICAL ANALYSIS OF TANK SAMPLES

The laboratory analysis of the soil samples recovered from below the removed underground tanks reported the following results:

Soil sample SS-1 contained ND mg/kg TPH as gasoline and diesel, ND ug/kg Volatile hydrocarbons Method 8010, ND mg/kg Oil and Grease, ND ug/kg EPA method 8270, ND mg/kg cadmium, 44 mg/kg chromium, ND mg/kg lead, and 48.5 mg/kg zinc.

Soil sample SS-2 contained ND mg/kg TPH as gasoline and diesel, ND ug/kg volatile hydrocarbons method 8010, ND mg/kg Oil and Grease, ND ug/kg EPA method 8270, ND mg/kg cadmium, 36.6 mg/kg chromium, ND mg/kg lead, and 147 mg/kg zinc.

The certified analytical reports and chain of custody forms are attached to this report.

6.0 BACKFILL AND RESURFACE OF THE TANK EXCAVATION

Upon receipt of the analytical results, Bay Area Tank Removal backfilled the excavation with imported clean sand fill, compacted and resurfaced the excavation.

7.0 LIMITATIONS

The conclusions and professional opinions presented in this report agree with generally accepted practice as outlined in the guidelines of the California Regional Water Quality Control Board for addressing fuel leaks from underground tanks. The chemical analysis results are based on limited data collected at the sampling location only and such conditions may not necessarily apply to the general site as a whole, therefore TMC Environmental Inc. cannot have complete knowledge of the underlying conditions. The information supplied in this report is provided to the client in order that the client may make a more informed decision as to site conditions. The professional opinion and judgement expressed herein is subject to revisions in light of new information. No guarantees or warranties are expressed or implied that the property is or is not free of environmental impairment.



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 12/05/91
DATE REQUESTED: 12/19/91
DATE REPORTED: 12/23/91


LABORATORY NUMBER: 106094

CLIENT: TMC ENVIRONMENTAL

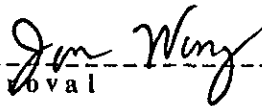
PROJECT ID: 489101

LOCATION: ESTATE OF JOHN B. HENRY

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

Berkeley

Wilmington

Los Angeles

Q C B a t c h R e p o r t

Client: TMC Environmental, Inc.
 Project Name: Henry-Dare
 Project Number: 489101

Laboratory Login Number: 106094
 Report Date: 23 December 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 3746

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	20-DEC-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	82%	SMWW 17:5520EF	20-DEC-91
BSD	85%	SMWW 17:5520EF	20-DEC-91

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	3.0%	< 20%

Client: TMC Environmental, Inc.

Laboratory Login Number: 106094

Project Name: Henry-Dare

Report Date: 23 December 91

Project Number: 489101

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
106094-001	SS-1 BOTTOM	Soil	05-DEC-91	05-DEC-91	20-DEC-91	ND	mg/Kg	50	TR	3746
106094-002	SS-2 SOUTH	Soil	05-DEC-91	05-DEC-91	20-DEC-91	ND	mg/Kg	50	TR	3746

ND = Not Detected at or above Reporting Limit (RL).

VERBAL ADDITIONS / CANCELLATIONS TO ANALYSIS REQUEST SHEET

 CLIENT: TMC DATE: 12/19/91
 REQUESTED BY: Mark Yangkin TIME: _____ am _____ pm
 RECORDED BY: NW

Current Lab ID (Previous Lab ID)	Client ID	Circle matrix	Specify add ^l or cancel	Analysis	Due date
106094 (105959-1, 2)	SS-1 SS-2	soil water other		SS20EF	12/23
()		soil water other			
()		soil water other			
()		soil water other			
()		soil water other			
()		soil water other			
()		soil water other			
()		soil water other			

Original in job jacket.

Copies to analytical departments.



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

10540 | new copies 1080-14
 CHAIN OF CUSTODY RECORD

ANALYSIS REQUEST FORM

Project No. 489101 Project Name: Estate of John B. Henry Project Contact: Melinda Henry Dine Page 1 of 1
 Project Address: 1726 Park Street, Alameda, Ca. Turnaround Time: 5 days
 Sampler: _____ Laboratory Name: _____ Lab No: _____

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS	TPH-DIESEL	ORGANIC LEAD	Metals Cu, Cr, Pb, Zn	8010	8270	REMARKS ADDITIONAL ANALYSIS
-1	12-5-91	1330	X		SS-1 Bottom	X	X		X	X	X	
-2	12-5-91	1335	X		SS-2 South	X	X		X	X	X	

Relinquished By: (Signature) <u>Thomas Sheehan</u>	Date: <u>12-5-91</u>	Received By: (Signature) _____	Date: _____
Relinquished By: (Signature) _____	Time: <u>1535</u>	Received By: (Signature) _____	Time: _____
Relinquished By: (Signature) _____	Date: _____	Received By: (Signature) _____	Date: _____
Relinquished By: (Signature) _____	Time: _____	Received By: (Signature) <u>Kevin Keane</u>	Time: _____
Relinquished By: (Signature) _____	Date: _____	Received By: (Signature) _____	Date: <u>12/5/91</u>
Relinquished By: (Signature) _____	Time: _____	Received By: (Signature) _____	Time: <u>2:25 PM</u>



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 489101 Project Name: Estate of John B. Henry Project Contact: Melinda Henry Duro Page 1 of 1
 Project Address: 1726 Park Street, Alameda, Ca. Turnaround Time: 5 days
 Sampler: _____ Laboratory Name: _____ Lab No: _____

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS	TPH-DIESEL	ORGANIC LEAD	Metals Cu, Cr, Pb Zn	8010	8270	REMARKS ADDITIONAL ANALYSIS
	12-5-91	1330	X		SS-1 Bottom	X	X		X	X	X	
	12-5-91	1335	X		SS-2 South	X	X		X	X	X	

Relinquished By: (Signature) <u>Thomas Sheehan</u>	Date: <u>12-5-91</u> Time: <u>1535</u>	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) <u>Christine Kane</u>	Date: <u>12/5/91</u> Time: <u>3:35p</u>



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

DATE RECEIVED: 12/05/91
DATE REPORTED: 12/17/91


LABORATORY NUMBER: 105959

CLIENT: TMC ENVIRONMENTAL

PROJECT ID: 489101

LOCATION: ESTATE OF JOHN B. HENRY

RESULTS: SEE ATTACHED

Reviewed By 

Reviewed By 

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 105959-1
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-1 BOTTOM

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/17/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	10
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
Tetrachloroethylene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

113

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LABORATORY NUMBER: 105959-2
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-2 SOUTH

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/17/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	10
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	10
Bromoform	ND	5.0
Tetrachloroethylene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

108

=====

LABORATORY NUMBER: 105959-METHOD BLANK
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY

DATE ANALYZED: 12/10/91
 DATE REPORTED: 12/17/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	10
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon tetrachloride	ND	5.0
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethylene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
2-Chloroethylvinyl ether	ND	5.0
Bromoform	ND	10
Tetrachloroethylene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Chlorobenzene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

107

=====

MS/MSD SUMMARY SHEET FOR EPA 8010/8020

Operator:	AV	Spike file:	344W/X006
Analysis date:	12/10/91	Spike dup file:	344W/X006
Sample type:	SOIL	Instrument:	GC12
SAMPLE ID:	105959-2	Sequence Name:	DEC 10

8010 MS/MSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	19.98	100 %	OK	59 - 172
Trichloroethene	22.43	112 %	OK	62 - 137
Chlorobenzene	22.27	111 %	OK	60 - 133
SPIKE DUP COMPOUNDS				
1,1-Dichloroethene	19.22	96 %	OK	59 - 172
Trichloroethene	19.37	97 %	OK	62 - 137
Chlorobenzene	19.14	96 %	OK	60 - 133
SURROGATES				
BROMOBENZENE (MS)	109.00	109 %	OK	70 - 120
BROMOBENZENE (MSD)	107.00	107 %	OK	70 - 120

8020 MS/MSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
Benzene	20.73	104 %	OK	66 - 142
Toluene	20.78	104 %	OK	59 - 139
Chlorobenzene	20.50	103 %	OK	60 - 133
SPIKE DUP COMPOUNDS				
Benzene	20.00	100 %	OK	66 - 142
Toluene	19.57	98 %	OK	59 - 139
Chlorobenzene	19.53	98 %	OK	60 - 133
SURROGATES				
BROMOBENZENE (MS)	99.00	99 %	OK	70 - 120
BROMOBENZENE (MSD)	101.00	101 %	OK	70 - 120

RPD DATA

8010 COMPOUNDS	SPIKE	SPIKE DUP	RPD	STATUS	LIMITS
1,1-Dichloroethene	19.98	19.22	4 %	OK	< 22
Trichloroethene	22.43	19.37	15 %	OK	< 23
Chlorobenzene	22.27	19.14	15 %	OK	< 21
8020 COMPOUNDS					
Benzene	20.73	20.00	4 %	OK	< 21
Toluene	20.78	19.57	6 %	OK	< 21
Chlorobenzene	20.50	19.53	5 %	OK	< 21

LABORATORY NUMBER: 105959
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY

DATE RECEIVED: 12/05/91
 DATE EXTRACTED: 12/11/91
 DATE ANALYZED: 12/12/91
 DATE REPORTED: 12/17/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
105959-1	SS-1 BOTTOM	ND	ND	1.0
105959-2	SS-2 SOUTH	ND	ND	1.0

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %

RECOVERY, %

7
118

LABORATORY NUMBER: 105959
 CLIENT: TMC ENVIRONMENTAL
 PROJECT #: 489101
 LOCATION: ESTATE OF JOHN B. HENRY

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/13/91
 DATE REPORTED: 12/17/91

Total Volatile Hydrocarbons as Gasoline in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	REPORTING LIMIT (mg/Kg)
105959-1	SS-1 BOTTOM	ND	1.0
105959-2	SS-2 SOUTH	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	109

LABORATORY NUMBER: 105959-1
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-1 BOTTOM

DATE RECEIVED: 12/05/91
 DATE EXTRACTED: 12/09/91
 DATE ANALYZED: 12/13/91
 DATE REPORTED: 12/17/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
 Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	330
2,4-Dimethylphenol	ND	1,650
Benzoic Acid	ND	330
2,4-Dichlorophenol	ND	1,650
4-Chloro-3-methylphenol	ND	1,650
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2,4-Dinitrophenol	ND	1,650
4-Nitrophenol	ND	1,650
4,6-Dinitro-2-methylphenol	ND	1,650
Pentachlorophenol	ND	1,650

BASE/NEUTRAL COMPOUNDS

N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,650

LABORATORY NUMBER: 105959-1
 SAMPLE ID: SS-1 BOTTOM

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1,650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,650
Benzo(a)anthracene	ND	330
Chrysene	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenzo(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: % SURROGATE RECOVERIES

2-Fluorophenol	66	Nitrobenzene-d5	55
Phenol-d6	67	2-Fluorobiphenyl	64
2,4,6-Tribromophenol	56	Terphenyl-d14	56

LABORATORY NUMBER: 105959-2
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-2 SOUTH

DATE RECEIVED: 12/05/91
 DATE EXTRACTED: 12/09/91
 DATE ANALYZED: 12/13/91
 DATE REPORTED: 12/17/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
 Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	330
2,4-Dimethylphenol	ND	1,650
Benzoic Acid	ND	330
2,4-Dichlorophenol	ND	1,650
4-Chloro-3-methylphenol	ND	1,650
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2,4-Dinitrophenol	ND	1,650
4-Nitrophenol	ND	1,650
4,6-Dinitro-2-methylphenol	ND	1,650
Pentachlorophenol	ND	1,650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1,650

LABORATORY NUMBER: 105959-2
 SAMPLE ID: SS-2 SOUTH

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug / kg	REPORTING LIMIT ug / kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1,650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1,650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1,650
Benzo(a)anthracene	ND	330
Chrysene	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenzo(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: % SURROGATE RECOVERIES

2-Fluorophenol	58	Nitrobenzene-d5	43
Phenol-d6	61	2-Fluorobiphenyl	52
2,4,6-Tribromophenol	53	Terphenyl-d14	47

LABORATORY NUMBER: 105959-1
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-1 BOTTOM

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/11/91
 DATE REPORTED: 12/17/91

PARAMETER	RESULT	UNITS	REPORTING LIMIT	METHOD
CADMIUM	ND	mg / Kg	0.25	EPA 6010
CHROMIUM	44.7	mg / Kg	0.50	EPA 6010
LEAD	ND	mg / Kg	3.0	EPA 7420
ZINC	48.5	mg / Kg	1.0	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD, %	Recovery, %
CADMIUM	2	81
CHROMIUM	3	98
LEAD	2	85
ZINC	<1	92

LABORATORY NUMBER: 105959-2
 CLIENT: TMC ENVIRONMENTAL
 PROJECT ID: 489101
 LOCATION: ESTATE OF JOHN B. HENRY
 SAMPLE ID: SS-2 SOUTH

DATE RECEIVED: 12/05/91
 DATE ANALYZED: 12/11/91
 DATE REPORTED: 12/17/91

PARAMETER	RESULT	UNITS	REPORTING LIMIT	METHOD
CADMIUM	ND	mg /Kg	0.25	EPA 6010
CHROMIUM	36.6	mg /Kg	0.50	EPA 6010
LEAD	ND	mg /Kg	3.0	EPA 7420
ZINC	147	mg /Kg	1.0	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD, %	Recovery, %
CADMIUM	2	81
CHROMIUM	3	98
LEAD	2	85
ZINC	<1	92



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

10545-1

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 489101 Project Name: Estate of John B. Henry Project Contact: Melinda Henry Duro Page 1 of 1
 Project Address: 1726 Park Street, Alameda, Ca. Turnaround Time: 5 days
 Sampler: _____ Laboratory Name: _____ Lab No: _____

LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS	TPH-DIESEL	ORGANIC LEAD	Metals Cu, Cr, Pb Zn	8010	8270	REMARKS ADDITIONAL ANALYSIS
-1	12-5-91	1330	X		SS-1 Bottom	X	X		X	X	X	
-2	12-5-91	1335	X		SS-2 South	X	X		X	X	X	

Relinquished By: (Signature) <u>Thomas Sheehan</u>	Date: <u>12-5-91</u> Time: <u>1535</u>	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) _____	Date: _____ Time: _____
Relinquished By: (Signature) _____	Date: _____ Time: _____	Received By: (Signature) <u>Glenn Keane</u>	Date: <u>12/5/91</u> Time: <u>3:25pm</u>

90386806
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8902; WITHIN CALIFORNIA CALL 1-800-852-7550
 GENERATOR
 TRANSPORTER
 FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. 90386806		Manifest Document No. 21111		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address EAST OF JOHN I. HENRY 1726 PARK ST						A. State Manifest Document Number 90386806				
4. Generator's Phone 916-527-1114						B. State Generator's ID RE TEX				
5. Transporter 1 Company Name WASTE MANAGEMENT						C. State Transporter's ID 70211002				
6. US EPA ID Number						D. Transporter's Phone 916-527-1114				
7. Transporter 2 Company Name						E. State Transporter's ID				
8. US EPA ID Number						F. Transporter's Phone				
9. Designated Facility Name and Site Address WASTE MANAGEMENT						G. State Facility's ID				
10. US EPA ID Number						H. Facility's Phone 916-527-1114				
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol	
a. HAZARDOUS WASTE OIL (HAZ WASTE OIL) HAZARDOUS WASTE OIL 150 LBS (150.00)					1		150.00		1. Waste No. State EPA/Other	
b.									State EPA/Other	
c.									State EPA/Other	
d.									State EPA/Other	
J. Additional Descriptions for Materials Listed Above HAZ WASTE OIL						K. Handling Codes for Wastes Listed Above a. R b. c. d.				
15. Special Handling Instructions and Additional Information A.T. - JOHN B HENRY										
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.										
Printed/Typed Name John B Henry					Signature 			Month Day Year 11/10/91		
17. Transporter 1 Acknowledgement of Receipt of Materials										
Printed/Typed Name John B Henry					Signature 			Month Day Year 11/10/91		
18. Transporter 2 Acknowledgement of Receipt of Materials										
Printed/Typed Name					Signature			Month Day Year		
19. Discrepancy Indication Space										
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.										
Printed/Typed Name					Signature			Month Day Year		

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.		2. Page 1 of 1		Information in the shaded area is not required by Federal law.	
		3. Generator's Name and Mailing Address		6. US EPA ID Number		A. State Manifest Document Number		B. State Generator's ID	
GENERATOR		4. Generator's Phone ()		7. US EPA ID Number		C. State Transporter's ID		D. Transporter's Phone	
		5. Transporter 1 Company Name		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone	
TRANSPORTER		9. Designated Facility Name and Site Address		10. US EPA ID Number		G. State Facility's ID		H. Facility's Phone	
		11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		13. Total Quantity		14. Waste No.	
FACILITY		a. Waste Empty Storage Tank		No.		Type		State	
		b. NON-RCRA Hazardous Waste Solid.						State	
		c.						State	
		d.						State	
TRANSPORTER		J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above			
		Qty. <u>71</u> Empty Storage Tank (s) # <u>7714</u> . Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.				a. _____ b. _____ c. _____ d. _____			
FACILITY		15. Special Handling Instructions and Additional Information							
		Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name <u>Jim Treadwell</u> & Phone <u>415-501-6375</u>							
TRANSPORTER		16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford							
		Printed/Typed Name				Signature		Month Day Year	
		17. Transporter 1 Acknowledgement of Receipt of Materials				Signature		Month Day Year	
FACILITY		Printed/Typed Name				Signature		Month Day Year	
		18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Month Day Year	
FACILITY		19. Discrepancy Indication Space							
		20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.							
FACILITY		Printed/Typed Name				Signature		Month Day Year	

CITY OF ALAMEDA
 CENTRAL PERMITS OFFICE
 2263 Santa Clara Ave. Room 204
 Alameda, CA 94501 748-4530

Permit No: P91-6970
 Status: APPROVED

Page 1 of 1
 12/03/91 15:06

JOB ADDRESS : 1726 PARK ST
 PERMIT TYPE : PLUMBING PERMIT
 Parcel number : 070 -0192-001-00
 Owner : MELINDA HENRY-DARE
 BELL ROSENBERG ATTY
 P O BOX 70220 STA D
 Applicant : OAKLAND CA 94612MOVAL

Applied : 11/22/91
 App/Issue : 12/03/91
 FINAL :
 To Expire :
 Class code : 088
 Valuation: 4,000

Project Title : REMOVE STORAGE TANK
 Project Desc. : REMOVE STORAGE TANK

HOURS OF CONSTRUCTION
 MONDAY - FRIDAY 7 A.M. TO 7 P.M.
 SATURDAY & SUNDAY 8 A.M. TO 5 P.M.
Thomas Shylwitz
 Signature

CONTRACTOR : BAY AREA TANK REMOVAL
 205 13TH. ST., SUITE 3033
 SAN FRANCISCO, CA. 94124

Lic. C 616521 863-6375

Fee description	Units	Fee/Unit	Ext fee	Data
Storage Tanks.....>	1	20.00	20.00	
Fixture Fee			20.00	
Filing Fee			10.00	
S.M.I.P Fee			.50	
Assembly Bill 941			5.00	
Micro-fiche Fee.....>	33.00		33.00	
*** Fees Required ***				*** Fees Collected & Credits ***

Account No.	Receipt No.	Date	Payment
001-300-4220-3360	R001252	12/03/91	20.00
001-300-4240-3745	R001252	12/03/91	10.00
001-220-0000-2239	R001252	12/03/91	.50
001-300-4240-3305	R001252	12/03/91	5.00
001-300-4240-3792	R001252	12/03/91	33.00
Fees: 68.50			
Adjustments: .00			
Total Fees: 68.50	Total Credits:		.00
	Total Payments:		68.50
	Balance Due:		.00

"NOTICE & AGREEMENT:" THERE IS A 15 DAY APPEAL PERIOD FOR ALL DESIGN REVIEW APPROVALS. I AM REQUESTING THAT THE BUILDING PERMIT BE ISSUED PRIOR TO THE EXPIRATION OF THE APPEAL PERIOD. I UNDERSTAND THAT ANY WORK STARTED BEFORE THE EXPIRATION OF THE APPEAL PERIOD IS DONE AT MY OWN RISK. I AGREE TO MAKE MODIFICATIONS TO THE PROJECT THAT MAY BE REQUIRED AS A RESULT OF THE APPEAL PROCESS.

SIGNATURE _____



CITY OF ALAMEDA BUSINESS LICENSE APPLICATION

FINANCE DEPT.
ROOM 310
2263 SANTA CLARA AVE.
ALAMEDA, CA 94501
415-748-4561

APPL. NO. **8000**
NEW
CHANGE

BUSINESS NAME: TRV ACCOUNT # _____ LIC. # _____

BUSINESS STREET ADDRESS: _____ CITY: _____ ZIP: _____ BUS. TEL. #: 510-232-816

TYPE OF OWNERSHIP: SOLE PROPRIETORSHIP PARTNERSHIP CORPORATION
DESCRIPTION OF BUSINESS ACTIVITY: Event Planning Consultants

MAILING ADDRESS: _____ FED. EMP. ID NO./SS NO. 024215
CONTRACTOR NO. _____

PLEASE COMPLETE ALL INFORMATION. IT WILL ASSIST THE POLICE DEPARTMENT IN CONTACTING YOU IN THE EVENT OF EMERGENCY.
SALES TAX NO. _____
ANNUAL SALES TAX COLLECTION (EST.) _____
ANNUAL GROSS RECEIPTS (EST.) _____

BUSINESS OWNER #1:
NAME: Tom Edwards
ADD: STREET _____ CITY: _____ ZIP: _____
TEL. NO. _____
DRIVER'S LICENSE # K0251
NO. OF EMPLOYEES IN ALAMEDA _____
NO. OF UNITS RENTED OUT _____
NO. OF CABS/MOTORBUS FOR HIRE _____

BUSINESS OWNER #2:
NAME: _____
ADD: STREET _____ CITY: _____ ZIP: _____
TEL. NO. _____
DRIVER'S LICENSE # _____
OTHER (COMMERCIAL RENTAL - SQ. FT.) _____
I DECLARE UNDER PENALTY OF PERJURY THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT.

MANAGER / OFFICE:
NAME: _____
ADD: STREET _____ CITY: _____ ZIP: _____
TEL. NO. _____
DRIVER'S LICENSE # _____
X _____ X _____
SIGNATURE DATE

EMERGENCY CONTACT / ALARM COMPANY:
NAME: _____
ADD: STREET _____ CITY: _____ ZIP: _____
TEL. NO. _____
FOR OFFICE USE ONLY
TAX RATE CATEGORY _____
STATE IND. CODE NO. _____
BILLING FREQUENCY H
A = ANNUAL
Q = QUARTERLY
BUSINESS TYPE _____
AMOUNT PAID \$ 53.2

APPLICANT Tom Edwards

DAY OR NIGHT
TELEPHONE
(510) 235-1393

CERTIFICATE CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 07609

CUSTOMER
BAY AREA TANK
JOB NO.
77152

FOH: Erickson, Inc. TANK NO. 7714

LOCATION: Richmond DATE: 12/13/91 TIME: 10:55:29

TEST METHOD Visual Gastech/1314 SMPN LAST PRODUCT UO

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 250 Gallon Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9%
LOWER EXPLOSIVE LIMIT LESS THAN 0.1%

"ERICKSON INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN
CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS
WASTE FACILITY."

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissible concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration than permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. Hughes
REPRESENTATIVE

TITLE

DR
INSPECTOR

Please print or type. Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. **CA0000651400916698**
 Manifest Document No. **90796698**

2. Page 1 of 1
 Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
ESTATE OF JOHN B HENRY
1726 PARK ST
ALAMEDA, CA 94501

A. State Manifest Document Number
90796698

4. Generator's Phone
(510) 523-1144

B. State Generator's ID

5. Transporter 1 Company Name
ERICKSON INC

C. State Transporter's ID
206712

6. US EPA ID Number
CA000094663972

D. Transporter's Phone
(510) 735-1393

7. Transporter 2 Company Name

E. State Transporter's ID

9. Designated Facility Name and Site Address
Erickson, Inc:
255 Parr Blvd.
Richmond, Ca: 94801

G. State Facility's ID
CA000094663972
 H. Facility's Phone
(510) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers No. Type
 13. Total Quantity
 14. Unit Wt/Vol
 15. Waste No.

a. Waste Empty Storage Tank

State
512

b. NON-RCRA Hazardous Waste Solid:

EPA/Other
1164 2100
 State
NONE

c.

EPA/Other
 State

d.

EPA/Other
 State

J. Additional Descriptions for Materials Listed Above

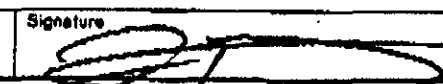
K. Handling Codes for Wastes Listed Above

Qty: **1** Empty Storage Tank (s) # **7714**,
 Tank (s) have been inerted with 15 lbs
 Dry Ice per 1000 Gal. Capacity.

a. **61**
 b.
 c.
 d.

16. Special Handling Instructions and Additional Information
 Keep away from sources of ignition: Always wear hardhats when working around
 U:S:T's 24 Hr: Contact Name **JIM TRACY** & Phone **415-863-6375**

18. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
 If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **JIM TRACY** Signature  Month Day Year **11/20/91**

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name **RODNEY C PROBERT** Signature  Month Day Year **11/20/91**

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
 Printed/Typed Name **RONALD H. HARRISON JR** Signature  Month Day Year **11/20/91**

90796698
 IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802, WITHIN CALIFORNIA CALL 1-800-952-7663
 GENERATOR
 TRANSPORTER
 FACILITY

THIS CARD MUST BE POSTED ON THE PREMISES AND
PLACED SO AS TO BE SEEN FROM THE STREET

CITY OF ALAMEDA, Building Inspection Office

DATE 12-3-91 VALUATIONS 4000 BLDG. PERMIT # _____ PLMG /MECH PERMIT # 91-6970

FORMS _____
REQUIRED BEFORE POURING CONCRETE

VAULT TOILET _____

PRELIMINARY GROUND PLUMBING _____

FINAL GROUND PLUMBING _____

ROUGH ELECTRIC _____

ROUGH PLUMBING _____

ROUGH HEATING & VENTILATING _____

SUB FLOOR _____

FRAME _____

INSULATION _____

JOB Tank removal

ADDRESS 1726 Park st.

OWNER Melinda Henry-Dore

CONTRACTOR Bay Area Tank Removal

ROBERT L. WARNICK BY John Perry
BUILDING OFFICIAL

INTERIOR LATH _____
REQUIRED BEFORE PLASTERING OR TAPING

EXTERIOR LATH _____
REQUIRED BEFORE STUCCO

DESIGN REVIEW _____

INSULATION CERTIFICATE _____

TRACT CONDITIONS _____

P.U.D. CONDITIONS _____

FINAL ELECTRIC _____

FINAL - FIRE DEPT. _____

FINAL PLUMBING 12-5-91-DR

FINAL HEATING & VENTILATING _____

FINAL BUILDING _____

ABOVE APPROVALS REQUIRED BEFORE INTERIOR LATHING OR COVERING

DO NOT CALL FOR FINAL INSPECTION UNTIL OTHER ITEMS HAVE BEEN ISSUED

DO NOT OCCUPY STRUCTURE UNTIL CERTIFICATION OF OCCUPANCY HAS BEEN ISSUED.
FOR CERTIFICATE OF OCCUPANCY TO BE ISSUED, A COPY OF HARD CARD WITH ALL FINALS
NEEDS TO BE FILED WITH THE CENTRAL PERMIT OFFICE.

REMARKS _____

NOTE: ALL INSPECTION REQUESTS ARE REQUIRED 24 HOURS IN ADVANCE.
CALL BETWEEN 8:30 AM - 10:00 AM 748-4564 (BUILDING) or 748-4563 (PLUMBING/MECHANICAL).

ATTACHMENT 2
LABORATORY RESULTS
OF HAND BORING SOIL SAMPLES



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 08/26/91

DATE REPORTED: 09/04/91

LABORATORY NUMBER: 104961

CLIENT: TMC ENVIRONMENTAL, INC.

PROJECT ID: 489101

LOCATION: HENRY-DARE

RESULTS: SEE ATTACHED



QA/QC Approval



Final Approval

Berkeley

Wilmington

Los Angeles

LABORATORY NUMBER: 104961
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 489101
 LOCATION: HENRY-DARE

DATE RECEIVED: 08/26/91
 DATE ANALYZED: 08/29/91
 DATE REPORTED: 09/04/91

Total Volatile Hydrocarbons with BTXE in Soils and Wastes
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
104961-8	HB6-2	56	15	22	660	250
104961-9	HB6-3	39	9.3	9.4	390	260

QA/QC SUMMARY

RPD, % 3
 RECOVERY, % 106

Client: TMC Environmental, Inc.

Laboratory Login Number: 104961

Project Name: Henry-Dare

Report Date: 04 September 91

Project Number: 489101

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
104961-002	HB2-1	Soil	23-AUG-91	26-AUG-91	27-AUG-91	340	mg/Kg	50	TR	2453
104961-004	HB2-3	Soil	23-AUG-91	26-AUG-91	27-AUG-91	ND	mg/Kg	50	TR	2453
104961-010	HB3-1	Soil	23-AUG-91	26-AUG-91	27-AUG-91	1500	mg/Kg	50	TR	2453

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: TMC Environmental, Inc.
 Project Name: Henry-Dare
 Project Number: 489101

Laboratory Login Number: 104961
 Report Date: 04 September 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 2453

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	27-AUG-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	84%	SMWW 17:5520EF	27-AUG-91
BSD	93%	SMWW 17:5520EF	27-AUG-91

		Control Limits
Average Spike Recovery	89%	80% - 120%
Relative Percent Difference	10.0%	< 20%

LABORATORY NUMBER: 104961
 CLIENT: TMC ENVIRONMENTAL, INC.
 PROJECT ID: 489101
 LOCATION: HENRY-DARE

DATE RECEIVED: 08/26/91
 DATE EXTRACTED: 08/28/91
 DATE ANALYZED: 09/02/91
 DATE REPORTED: 09/04/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg /Kg)	DIESEL RANGE (mg /Kg)	REPORTING LIMIT* (mg /Kg)
104961-2	HB2-1	ND	30	1.0
104961-4	HB2-3	210	ND	1.0
104961-8	HB6-2	ND	13	1.0
104961-10	HB3-1	ND	2,000	10

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	92

104961



TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD

ANALYSIS REQUEST FORM

Project No. 487101 Project Name: Henry-Dave Project Contact: Michael Princevalle Page 1 of 1
 Project Address: Park Street Alameda Turnaround Time: 5 days
 Sampler: Michael Princevalle Laboratory Name: Curtis + Tompkins Lab No: _____

Sample LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTX	TPH-DIESEL BTX	ORGANIC LEAD	# TOG	REMARKS ADDITIONAL ANALYSIS
1 HB1-1	8-23-91	10:47A	X		Hand Boring 1 36-39"					Sand; Some staining
2 HB2-1	8-23-91	10:50	X		Hand Boring 2 9-12"		X	X		Some dark staining; slight odor; sand
3 HB2-2	8-23-91	11:00	X		" " " 57-60"					Sand; no odor or staining
4 HB2-3	8-23-91	11:05	X		" " " 84-87"		X	X		Clayey sand, slight odor, ^{Very moist} Strong olive-gray staining
5 HB4-1	8-23-91	11:15	X		Hand Boring 4 33-36"					Sand; no odor or staining
6 HB5-1	8-23-91	11:45	X		Hand Boring 5 34-37"					No odor/staining
7 HB6-1	8-23-91	12:08	X		Hand Boring 6 9-12"					Sand; Strong odor/staining 4"-84"+
8 HB6-2	8-23-91	12:44	X		" " " 63-66"	X	X			Sand; Strong odor/staining
9 HB6-3	8-23-91	1:45	X		" " " 81-84"	X				Sand, very moist - wet; Strong staining, mod. odor
10 HB3-1	8-23-91	2:15	X		Hand Boring 3 87-90"		X	X		Sand; Very moist - wet; Mod. odor/staining

Relinquished By: (Signature) <u>Michael Princevalle</u>	Date: <u>8/23/91</u>	Received By: (Signature) <u>Tom Schulz</u>	Date: <u>8/23/91</u>
Relinquished By: (Signature) <u>Tom Schulz</u>	Time: <u>1613</u>	Received By: (Signature) <u>Max Merick</u>	Time: <u>1613</u>
Relinquished By: (Signature)	Date: <u>8/24/91</u>	Received By: (Signature)	Date: <u>8/24/91</u>
	Time: <u>1440</u>		Time: <u>14:45</u>
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
	Time:		Time:



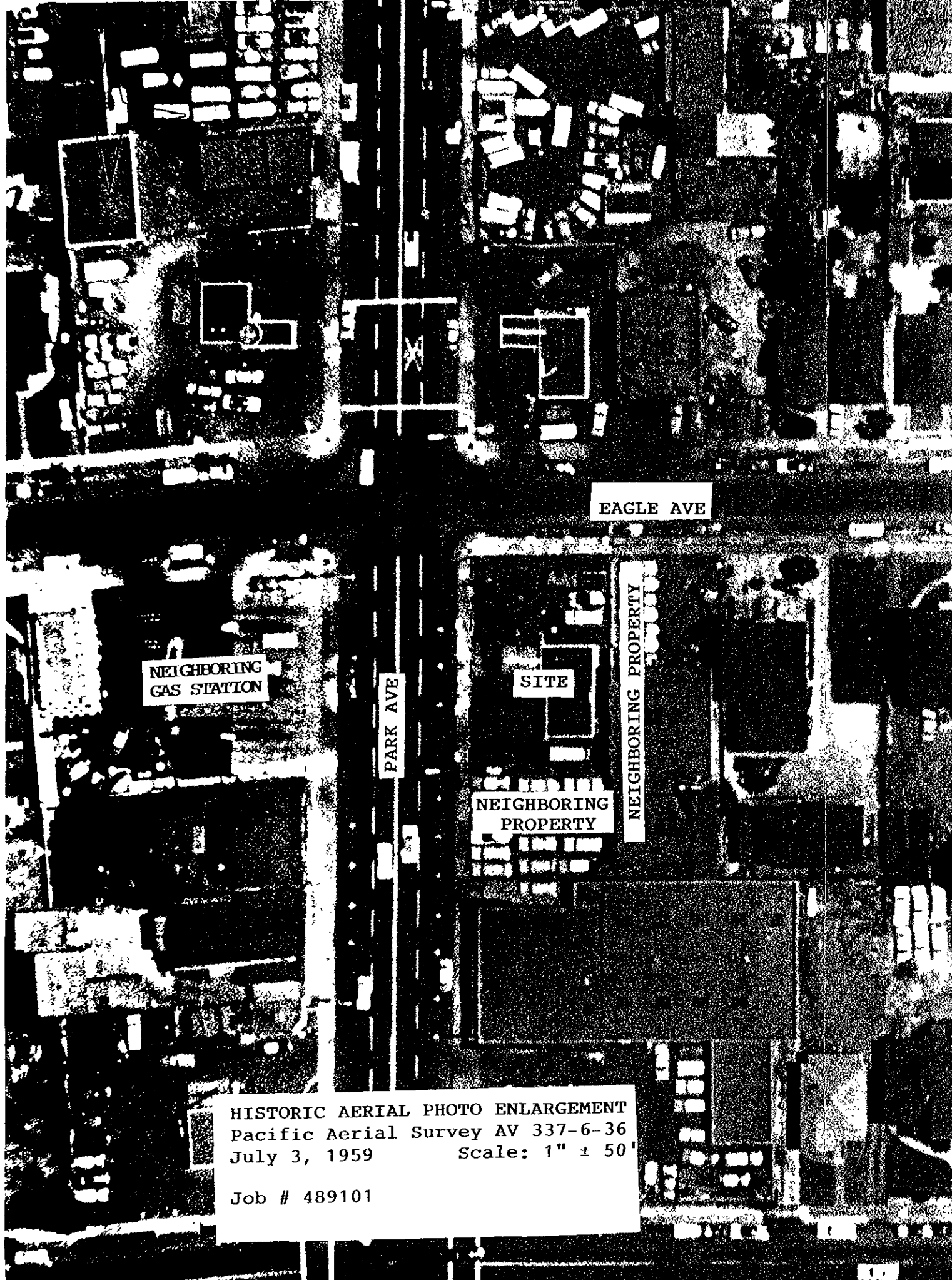
TMC ENVIRONMENTAL, INC.
 13908 San Pablo Avenue, Suite 101
 San Pablo, California 94806
 (415) 232-8366 / FAX 232-5133

CHAIN OF CUSTODY RECORD
 ANALYSIS REQUEST FORM

Project No. 487101	Project Name: Henry-Dave	Project Contact: Michael Princeville	Page 1 of 1
Project Address: Park Street Alameda			Turnaround Time: 5 days
Sampler: Michael Princeville		Laboratory Name: Curtis + Tompkins	Lab No:

Sample LAB ID NO.	DATE	TIME	SOIL	WATER	SAMPLE LABEL	TPH-GAS BTEX	TPH-DIESEL BTEX	ORGANIC LEAD	PCB PCOG	REMARKS ADDITIONAL ANALYSIS
HB1-1	8-23-91	10:47A	X		Hand Boring 1 36-39"					Sand; Some staining
HB2-1	8-23-91	10:50	X		Hand Boring 2 9-12"		X		X	Some dark staining; slight odor; Sand
HB2-2	8-23-91	11:00	X		" " " 57-60"					Sand; No odor or staining
HB2-3	8-23-91	11:05	X		" " " 84-87"		X		X	Clayey Sand, slight odor, ^{very moist} Strong olive-gray staining
HB4-1	8-23-91	11:15	X		Hand Boring 4 33-36"					Sand; No odor or staining
HB5-1	8-23-91	11:45	X		Hand Boring 5 34-37"					No odor/staining
HB6-1	8-23-91	12:08	X		Hand Boring 6 9-12"					Sand; Strong odor/staining 4"-8"+
HB6-2	8-23-91	12:44	X		" " " 63-66"	X	X			Sand; Strong odor/staining
HB6-3	8-23-91	1:45	X		" " " 81-84"	X				Sand, very moist - wet; Strong staining, mod. odor
HB3-1	8-23-91	2:15	X		Hand Boring 3 87-90"		X		X	Sand, very moist-wet; Med. odor/staining

Relinquished By: (Signature) Michael Princeville	Date: 8/23/91 Time: 1613	Received By: (Signature) Tom Edwards	Date: 8/23/91 Time: 1623
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:
Relinquished By: (Signature)	Date:	Received By: (Signature)	Date:



EAGLE AVE

NEIGHBORING
GAS STATION

PARK AVE

SITE

NEIGHBORING
PROPERTY

NEIGHBORING PROPERTY

HISTORIC AERIAL PHOTO ENLARGEMENT
Pacific Aerial Survey AV 337-6-36
July 3, 1959 Scale: 1" ± 50'
Job # 489101