BLAINE
TECH SERVICES INC.

1370 TULLY RD., SUITE 50
SAN JOSE, CA 9512
(408) 995-553

November 8, 1988

Pearson Equipment Company
614 West Julian
San Jose, CA 95126

Attention: Dale Doshack

SITE:
MILLS COLLEGE CORPORATION YARD
500 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Blaine

PROJECT:
TANK REMOVAL AND REPLACEMENT
WITH NEW DOUBLE CONTAINMENT
UNDERGROUND STORAGE TANKS

SAMPLED ON:
OCTOBER 21, 1988

TANK REMOVAL SAMPLING REPORT 88295-C-1

This report describes environmental sampling and documentation performed by our firm on this project. In addition to the Sampling Report text itself, supporting documents are provided as attachments. These include the chain of custody and the certified analytical laboratory report. All these documents should be kept together and preserved as a file of interrelated records which, together, comprise the documentation of the work performed at the site.

SCOPE OF REQUESTED SERVICES

In accordance with your request, field personnel would be dispatched to the site to observe the tank removal, collect samples, arrange for the proper analyses of the samples and maintain adequate documentation resulting in the issuance of a formal Sampling Report. The collection of environmental samples was to be performed in accordance with the requirements of the State Water Resources Control Board, Regional Water Quality Control Board, and the specific directions of the Local Implementing Agency (LIA) inspector present at the site at the time of removal.

EXECUTION OF THE TANK REMOVAL SAMPLING

Personnel from our office were present at the subject site for the tank removal on October 21, 1988.

TANK I.D.	TANK SIZE IN GALLONS	TANK CONTENT	MATERIAL OF CONSTRUCTION	INSPECTION FOUND
A	1,000	GASOLINE	STEEL	HOLES

The subject site is located within the overall jurisdiction of the Regional Water Quality Control Board -- San Francisco Bay Region. Initial inspection and evaluation of the site is customarily conducted by the local implementing agency (LIA), which in this case was the Alameda County Health Department. The local implementing agency was represented by Mr. Lawrence Seto, who was present to observe the tank removal and sampling.

In accordance with the local regulations and the field judgement of the LIA representative, a brief inspection was made the tank following its removal from the subsurface. The inspection found holes.

After the removal of the underground storage tank, one sample was taken of the native soil at each end of the tank at a depth of nine feet below grade. The soil at both of these sampling points did not appear discolored, but did smell strongly of gasoline.

The original work plan called for a new underground storage tank, larger than the original, to be placed in the excavation following the removal of the old tank and the conclusion of sampling. For this reason, the excavation was twice as large as was necessary for removal of the tank. When viewed from above, the excavation was split approximately in half, with the tank lying in the southern half of the excavation and the northern half excavated to a depth nearly equal to the bottom of the old tank.

Because of the strong gasoline odors present in the soil being excavated, an attempt was made to determine the vertical extent of the contamination. The southern half of the pit, which was the area directly below where the old tank had been placed, was excavated to a depth of approximately 21' below the parking lot grade. At this point excavation in this half of the pit was stopped because deeper digging was beyond reach of the backhoe. The soil at this point still smelled strongly of gasoline. Soil samples were taken from the pit floor at each end of this portion of the pit. The sample from the east end of the pit was taken at 18' below grade and the sample from the west end of the pit at 21' below grade.

The northern half of the pit was excavated to 15' below grade. The soil at this point no longer smelled strongly, although a slight odor of gasoline was still detectable. A sample from this portion of the excavation was taken near the midpoint of the long axis of the pit, next to the north wall of the pit.

The location of individual sampling points is shown on the diagram on page four. Additional information on the exact method of sample collection will be found in the SAMPLING METHODOLOGY section of this report.

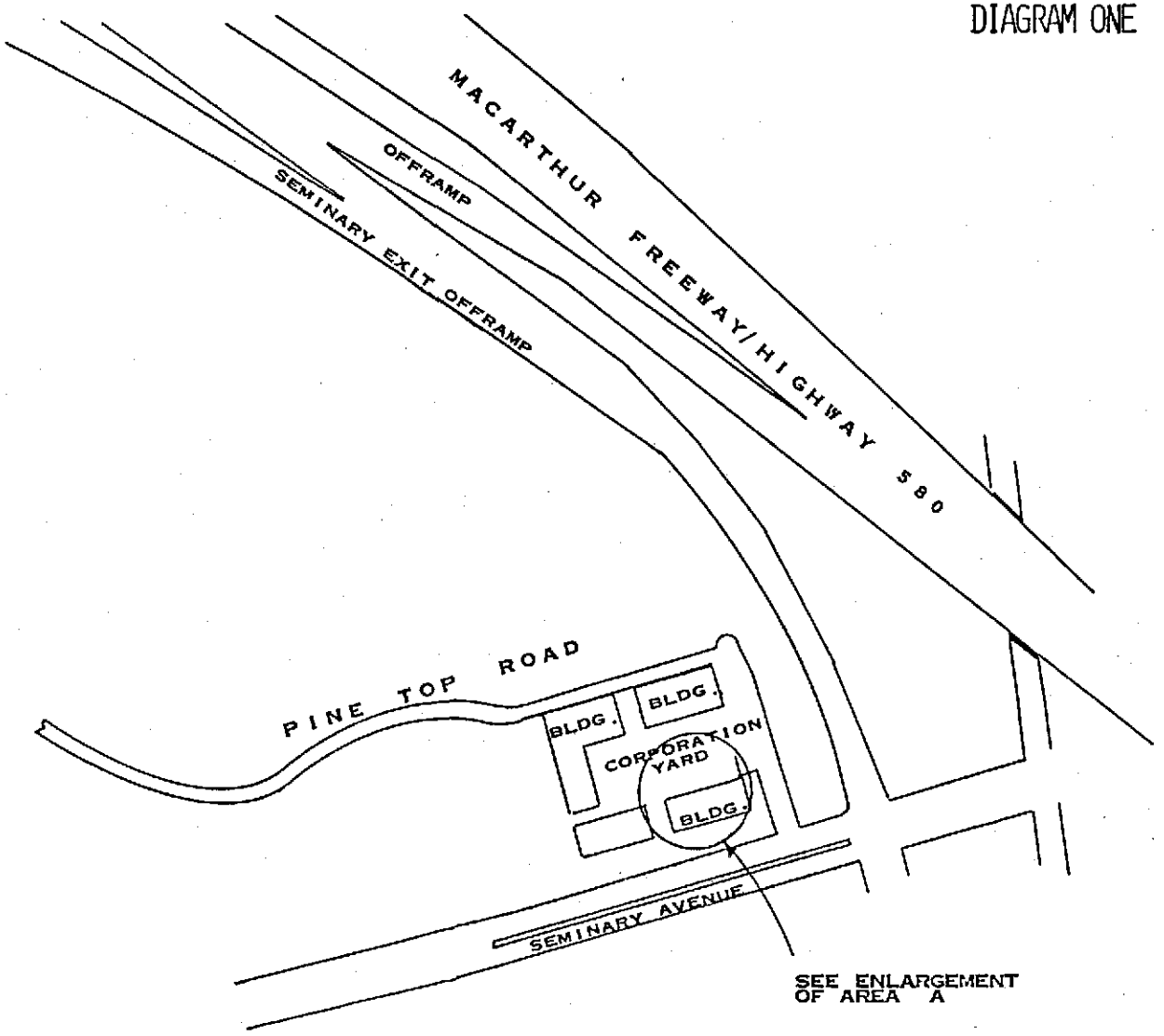
After completion of the field work, the sample containers were delivered to Superior Analytical Laboratory, Inc. in San Francisco, California. Superior Analytical Laboratory, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #220. It was requested that the analytical procedures used for these analyses be those specified by the Regional Water Quality Control Board -- San Francisco Bay Region. The methods are defined in attachments to the San Francisco RWQCB (Region 2) publication, Guidelines For Addressing Fuel Leaks.

SAMPLING METHODOLOGIES USED ON THIS PROJECT

STANDARD RWQCB INTERFACE SAMPLE: The tank removal sampling followed the standard protocol for obtaining interface samples. These samples fall into the category of samples which are known to be of primary concern to the interested regulatory agencies for determining if additional action will be required at a site and the methodology has been closely defined in state and RWQCB publications, supplements, and presentations. These specify both the acceptable depth and lateral situation of sample collection points. In accordance with these specifications, sample collection is executed as close as possible to the center line (longitudinal axis) of the tank and on a vertical axis with the fill pipe. A corresponding location is also found at the opposite end of the tank whenever standard interface samples are being collected.

Briefly, the method consists of digging up native soil from directly below the fill pipe and the corresponding opposite end of the tank and obtaining a sample from the backfill/native soil interface or a short distance below the interface. In the case of tanks less than 1,000 gallons in capacity, only one sample from beneath the tank is required. A short distance has been defined by Region 2 Board engineers as not greater than twenty-four inches below the backfill/native soil interface and is generally taken to be one foot below the the backfill/native soil interface. This soil is brought up in the backhoe bucket. A shovel or trowel is used to cut away surface soil and backfill material which may have been included in the bucket, and the sample is taken by pushing or driving a brass sample liner into the newly exposed soil from the designated depth and location. Additional clarifications by Region 2 Board engineers have indicated that when there is an obvious difference in the relative contamination of soil brought up from the interface depth, then it is the relatively more contaminated soil that should be selected for inclusion in the sample.

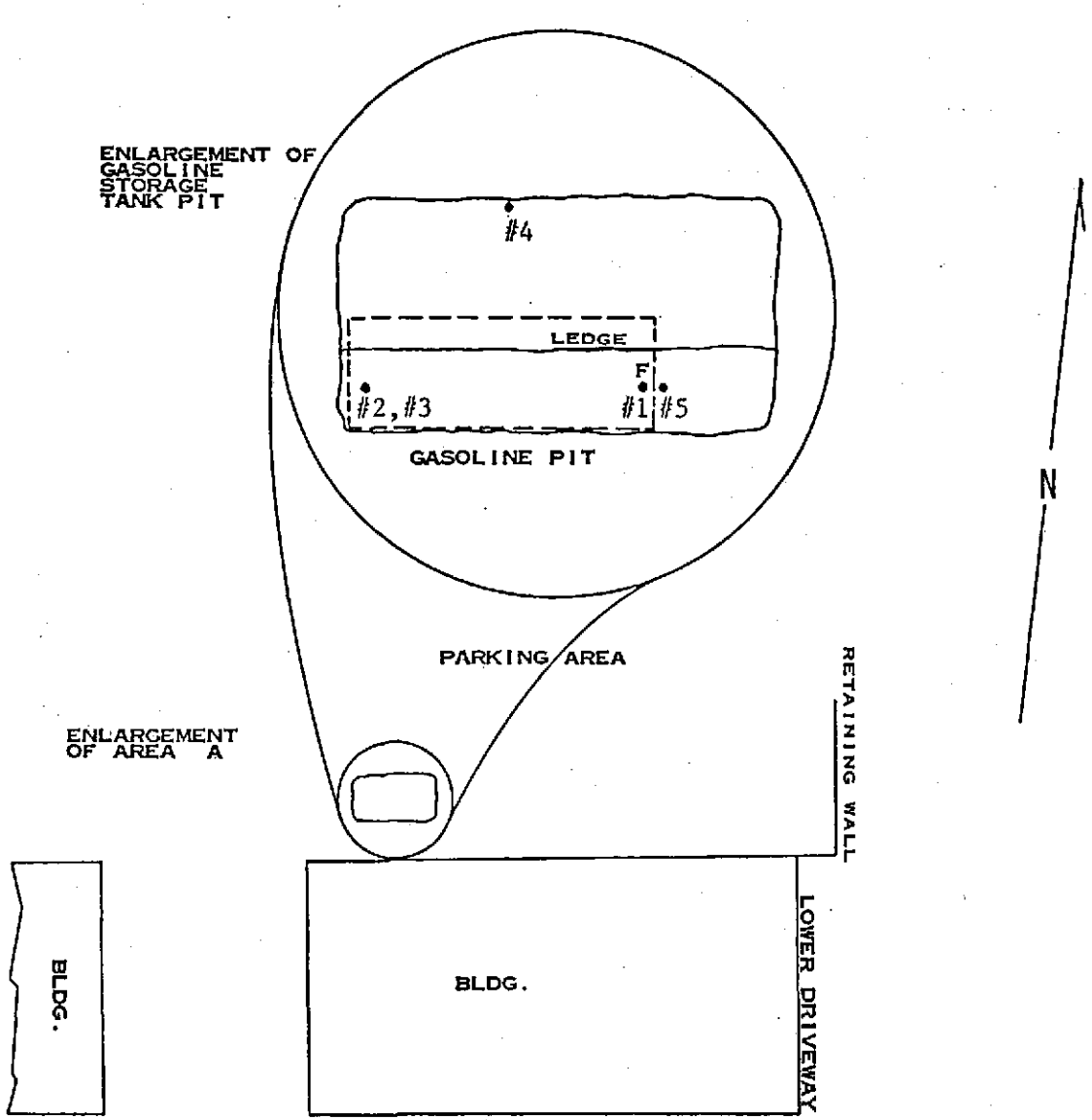
DIAGRAM ONE



MAP REF: THOMAS BROS.
ALAMEDA COUNTY
P.15 A-2

NOT TO SCALE

DIAGRAM TWO



0 20' 40'

SCALE:

MAP REF: THOMAS BROS. ALAMEDA COUNTY P.15 A-2

LEGEND: F = FILL END

#1 SOIL SAMPLE FROM 9'
ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS(TPH) AS GASOLINE, AND BENZENE, TOLUENE, XYLENES AND ETHYLBENZENE(BTXE) AT SUPERIOR ANALYTICAL LABORATORY, INC.
SUPERIOR LABORATORY NO. 50410-01

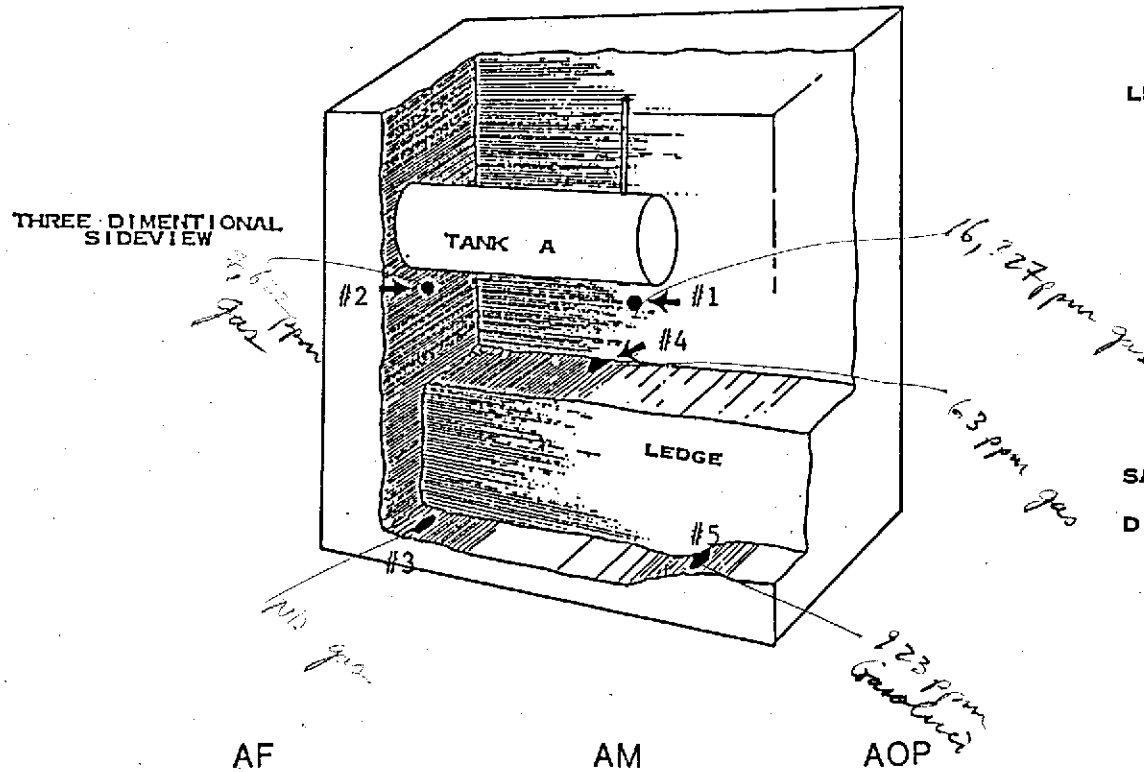
#2 SOIL SAMPLE FROM 9'
ANALYSIS FOR TPH AS GASOLINE, AND BTXE
SUPERIOR LABORATORY NO. 50410-02

#3 SOIL SAMPLE FROM 21'
ANALYSIS FOR TPH AS GASOLINE, AND BTXE
SUPERIOR LABORATORY NO. 50410-03

#4 SOIL SAMPLE FROM 15'
ANALYSIS FOR TPH AS GASOLINE, AND BTXE
SUPERIOR LABORATORY NO. 50410-04

#5 SOIL SAMPLE FROM 18'
ANALYSIS FOR TPH AS GASOLINE, AND BTXE
SUPERIOR LABORATORY NO. 50410-05

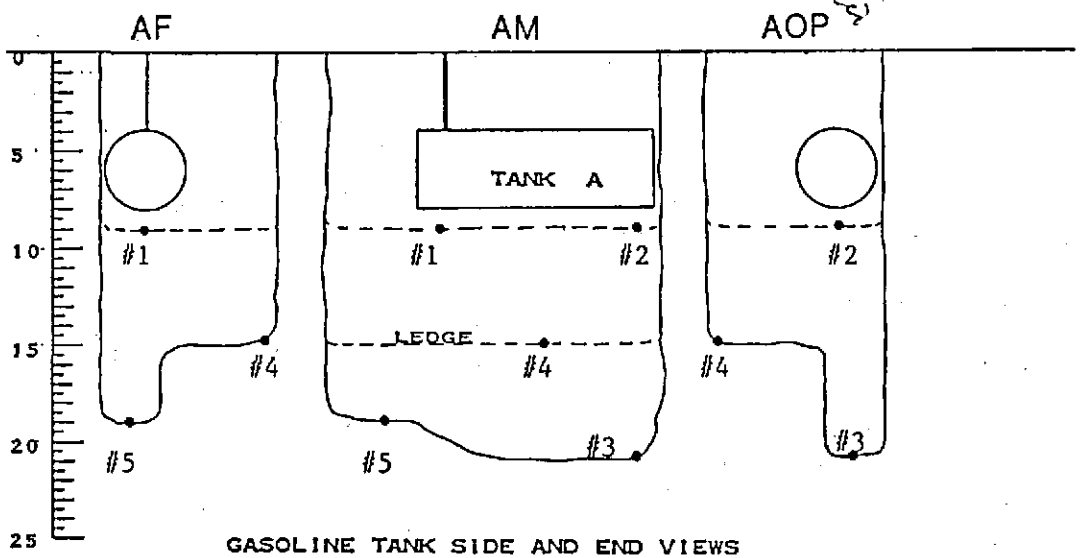
DIAGRAM THREE



LEGEND: AF = FILL END
AM = MIDDLE
AOP = OPPOSITE END

SAMPLING PERFORMED BY STEPHEN CARTER

DIAGRAMS PREPARED BY BRENT ADAMS



GASOLINE TANK SIDE AND END VIEWS

ELECTIVE CONFIRMING SAMPLES FOLLOWING ADDITIONAL EXCAVATION: In cases where, as a precaution, excavation is continued in order to remove soil which may be contaminated, it is customary to obtain one or more samples of the soil at the furthest extent of excavation. These samples provide information on the condition of the soil remaining after the excavation effort was completed.

As the precautionary excavation is completed, the backhoe is used to dig up soil representative of the material which remains in the bottom of the pit. The sample material is collected and handled according to the same procedures used with other backhoe assisted sampling methodologies and duplicates RWQCB standard interface sampling in all respects except the depth at which the soil is obtained.

SAMPLE CONTAINERS

Our firm uses new sample containers of the type specified by either EPA or the RWQCB for the collection of samples at sites where underground storage tanks are involved. Soil samples for volatile, semivolatile and nonvolatile analyses are all collected in properly prepared new brass liners which are 2 inches in diameter by 4 inches in length. Closure is accomplished with press fit plastic end caps which are fitted to the open ends of brass tube after a sheet of aluminum foil is wrapped over the exposed sample material. A non-contributing/nonsubtractive tape is wrapped completely around the joint areas where the plastic caps meet the outer wall of the brass tube. No preservative other than cold storage is used on samples captured in sample containers of this type.

SAMPLE HANDLING PROCEDURES

Solid sample material is captured by advancing the liner into the soil. This may be done by pushing the liner into soft soils or by containing the liner in a drive shoe which can be advanced and then retracted by means of a slide hammer. The open ends of the sample liner are covered with aluminum foil and plastic end caps. Excess aluminum foil is removed and the edge of the plastic end caps is tightly sealed against the outer surface of the brass liner with an unbroken wrap made with a tape which has been tested to confirm that it does not contribute compounds that would be detected in the type of analyses intended for the sample contained inside of the brass liner. The brass liner is then labeled with the appropriate identification numbers which specify the sampling activity designation number, sample collection area, depth etc. that apply to that particular sample. The sample liner is then placed in an ice chest which contains pre-frozen blocks of an inert ice substitute such a Blue Ice or Super Ice.

SAMPLE DESIGNATIONS

All samples containers are identified with both an activity number and a discrete sample identification. Please note that the activity number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days as an actual activity often does. This is followed by the sample I.D. number which is usually a simple number such as #1, #2, #3.

CHAIN OF CUSTODY

Samples are continuously maintained in either a chilled ice chest, refrigerator, or freezer from the time of collection until acceptance by the State certified Hazardous Materials Testing Laboratory selected to perform the analytical procedures. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

LABORATORY IDENTIFICATION NUMBERS

Following receipt of the samples and completion of the Chain of Custody form, the laboratory then assigns their own identification numbers to the samples. Different laboratories use different numbering systems and, according to their own internal conventions, may or may not assign sequential numbers to samples which are placed on temporary "hold", pending the results of other analyses. Laboratory identification numbers (if assigned and available) are included on the DIAGRAM page, and will be found on the certified analytical report by the analytical laboratory.

CERTIFIED ANALYTICAL REPORT

The certified analytical report generated by the laboratory is the official document in which they issue their findings. The certified analytical report should be closely reviewed when samples are taken from below waste oil tanks as <u>any</u> detection of the EPA halogenated and purgeable aromatic compounds may be grounds for requiring further action. The certified analytical report is included as an attachment at the close of this report.

GENERAL ADVISORY ON POSITIVE RESULTS

Though our firm specializes in sampling, monitoring and documentation, rather than interpretation and remediation, we have been asked by the engineering staff of the Regional Water Quality Control Board to include in our reports an advisory section outlining the general type of additional actions which may be required when contamination is found. This advisory is not intended to characterize conditions at this particular site or replace the services of a consulting firm specializing in the investigation, characterization and remediation of such conditions as may exist. Rather, it is intended to advise you that such additional actions may be required even though some time may elapse before you are contacted by one of the interested regulatory agencies.

In Region 2 (which is regulated by the San Francisco Regional Water Quality Control Board), the thresholds are readily defined in the Board's publication, Guidelines For Addressing Fuel Leaks. According to this document, soil which has less than 100 parts per million total petroleum fuel hydrocarbon (TPH) contamination does not generally require immediate additional action. Board engineers emphasize that this does not mean that some action might not be required in the future. Still, the site is assigned a low priority unless it is situated in an area of high hydrogeologic concern.

The detection of more than 100 ppm TPH in the native soil beneath a tank is generally considered grounds for requiring an additional investigation in the form of soil borings and installation of at least one groundwater monitoring well followed by periodic monitoring. The detection of 1000 ppm TPH is usually viewed by the Board as an unacceptable level of fuel saturation which will mandate excavation of the effected ground down to the furthest practicable reach of conventional excavating machinery followed by soil borings and installation of groundwater monitoring wells.

Other regions use different standards for determining when a groundwater investigation will be required. For example benzene is often used in lieu of TPH. Even very low levels of benzene are often seen as grounds for requiring a subsurface investigation. This criteria may be relaxed or stiffened depending on the location of the site in relation to different groundwater systems, the depth to water, type of soil, and the concentrations of benzene involved.

The above standards apply only to fuels. When samples taken in connection with a waste oil tank or a solvent tank are found to contain even small amounts of any of the EPA priority pollutants (such as TCE, PCE, DCE etc. which are detected by EPA methods 8010, 8020, and 8240) more stringent standards are often applied. In these cases, soil borings and monitoring well installation may be required if there is any detectable amount of any of the EPA priority pollutant compounds.

When contaminants are found to have reached the water underlying a site, the Board customarily requires that additional work be undertaken in order to define the extent of the contamination.

REPORTAGE

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody, and the certified analytical report issued by the Hazardous Materials Testing Laboratory. The property owner should attach a cover letter and submit all documents together in a package.

The following addresses have been listed here for your convenience:

Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street
Room 6040
Oakland, CA 94607
ATTN: Greg Zentner

Alameda County Health
Hazardous Materials Management
420 27th Street
Oakland, CA 94612
ATTN: Lawrence Seto

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/dmp

attachments: chain of custody
analytical report

BLAINE
TECH SERVICES INC.

1370 TULLY ROAD, SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

CHAIN OF CUSTODY # 882951

SITE SPECIFICATION Pearson Equipment @
Mills College Corporation Yard
5000 MacArthur Blvd.
Oakland, CA

(X) Bill BLAINE TECH SERVICES, Inc.
( ) Bill _____

SPECIAL INSTRUCTIONS

SAMPLE I.D.	QUANTITY	TYPE	OR	ANALYSIS TO DETECT	STATUS	RESULTS	LAB NUMBER
1	1	Soil		TPH (gas), BTXE	~~2 wk~~ 5 days		
2	1	"		" "	"		
3	1	"		" "	"		
4	1	"		" "	24 hr.		
5	1	"		" "	24 hr.		

Field sampling was performed by Stephen J. Carter

Sampling was completed at 15:01 AM/PM 10-21-1988

RELEASE OF SAMPLES FROM (name,time,date) ---->>>>> INTO THE CUSTODY OF (name,time,date)

from S. Carter @ 16:00 AM/PM 10/21-88 -> to [signature] @ 17:00 AM (PM) 10/21/88

from _____ @ : AM/PM -88 -> to _____ @ : AM/PM -88

from _____ @ : AM/PM -88 -> to _____ @ : AM/PM -88

The laboratory designated to perform these analyses is: Superior DHS LMTL # 202
NOTE: Procedures and detection limits must confrom to RWQCB Region 2 specifications.
Please include chain of custody number and site specification on reports and invoices.

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50410
CLIENT: Blaine Tech Services
CLIENT ID: Pearson Equipment

DATE RECEIVED: 10/21/88
DATE REPORTED: 10/31/88
JOB NO.: 88295C-1

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

SITE SPECIFICATION: Pearson Equipment @ Mills College Corp. Yard
5000 MacArthur Blvd., Oakland, CA

Sample Identification	Concentration (mg/kg)
#1 88295C-1	16,327. Gasoline
#2 88295C-1	7,622. Gasoline
#3 88295C-1	ND < 10

mg/kg = part per million (ppm)

QA/QC Summary: Matrix Spike, Matrix Spike Duplicate
Gasoline @ 40 mg/L: Avg. Recovery: 82%, RPD: 10%

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50410
CLIENT: Blaine Tech Services
JOB NO.: 88295C-1

DATE SAMPLED: 10/21/88
DATE ANALYZED: 10/28/88
DATE REPORTED: 10/31/88

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

SITE SPECIFICATION: Pearson Equipment @ Mills College Corp. Yard
5000 MacArthur Blvd, Oakland, CA

Concentration (ug/kg)

Sample Identification	Benzene	Toluene	Ethyl Benzene	Xylenes
#1 88295C-1	204270.	930244.	200530.	960495.
#2 88295C-1	56975.	386285.	100983.	498441.
#3 88295C-1	116.	33.	ND < 3	40.

ug/kg = part per billion (ppb)

QA/QC Summary: Matrix Spike, Matrix Spike Duplicate
Recoveries: 96 - 113%, RPD: < 6%

Les Partridge, Ph.D.
Laboratory Manager

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50410
CLIENT: Blaine Tech Services
CLIENT ID: Pearson Equipment

DATE RECEIVED: 10/21/88
DATE REPORTED: 10/24/88
JOB NO.: 88295C-1

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

SITE SPECIFICATION: Pearson Equipment @ Mills College Corp. Yard
5000 MacArthur Blvd., Oakland, CA

Sample Identification	Concentration (mg/kg)
#4 88295C-1	63. Gasoline range
#5 88295C-1	923. Gasoline range

mg/kg = part per million (ppm)

QA/QC Summary: Matrix Spike, Matrix Spike Duplicate
Gasoline @ 40 mg/L: Avg. Recovery:88.8% RPD:7.5%

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50410
CLIENT: Blaine Tech Services
JOB NO.: 88295C-1

DATE SAMPLED: 10/21/88
DATE ANALYZED: 10/24/88
DATE REPORTED: 10/24/88

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

SITE SPECIFICATION: Pearson Equipment @ Mills College Corp. Yard
5000 MacArthur Blvd, Oakland, CA

	Concentration (ug/kg)			
Sample Identification	Benzene	Toluene	Ethyl Benzene	Xylenes
#4 88295C-1	651.	1063.	290.	1590.
#5 88295C-1	2254.	12397.	5675.	28375.

ug/kg = part per billion (ppb)

QA/QC Summary: Average surrogate compound recovery: 103.5%

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE