WORKPLAN
FOR
SOIL BORING INVESTIGATION

ALITA BRAND
968 81ST AVENUE
OAKLAND, CA 94621

Prepared For:
MR. RICHARD E. MERLINO
ALITA BRAND
1001 83RD AVENUE
OAKLAND, CA 94621

Submitted By:
TANK PROTECT ENGINEERING
Of Northern California, Inc.
2821 WHIPPLE ROAD
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(510) 429-8088

January 21, 1997

Project Number 383

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Registered Geologist

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Principal Engineer

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This report has been prepared by the staff of **Tank Protect Engineering of Northern California, Inc.** under direction of an Engineer and/or Geologist whose seal(s) and/or signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied.

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1.0 INTRODUCTION

The subject site is located at 968 81st Avenue in the City of Oakland in Alameda County, California (see Figure 1). The contact person for the site is Mr. Richard Merlino; telephone number (510) 568-2151.

Because of soil and groundwater samples obtained during a recent tank removal showed concentrations of hydrocarbons to be present, the Alameda County Health Care Services Agency (ACHCSA) requested in a letter dated November 22, 1996 (see Appendix A) that a environmental investigation be conducted to determine the horizontal and vertical extent of soil and groundwater impacted from the hydrocarbon release at the site. This WORKPLAN FOR SOIL BORING INVESTIGATION (WP) proposes a scope of work for conducting the environmental investigation.

2.0 BACKGROUND

Tank Protect Engineering of Northern California, Inc. (TPE) was contracted by Alita Brand (ALITA) to remove two 1,000-gallon underground steel, diesel and gasoline storage tanks (see Figure 2).

Upon removal of the diesel and gasoline tanks, verification sampling was conducted under the supervision of a representative from the ACHCSA. Four discrete verification soil samples were collected from the excavation sidewalls at depths of 7.5 to 8.0 feet. Four discrete verification soil samples were collected from the stockpiled soil for laboratory compositing into 1 composite sample (SP1-A,B,C,D). A "grab" groundwater sample (WS-1) was collected from the excavation at a depth of 8.0 feet (see Figure 2). Soil and groundwater samples were analyzed for total petroleum hydrocarbons as diesel (TPHD), as gasoline (TPHG), for methyl t-butyl ether, benzene, toluene, ethylbenzene, and xylenes (MBTEX) and for total lead (LEAD).

All discrete soil samples, with the exception of sample SD-W, showed detectable limits of hydrocarbon contamination. TPHD was detected in soil samples SD-E, SG-E and SG-W in concentrations of 50 parts per million (ppm), 66 ppm and 21 ppm, respectively. TPHG and MBTEX chemicals were nondetectable (see Table 1).

Chemical analysis of stockpile soil sample SP1-A,B,C,D detected TPHD and TPHG at concentrations of 340 ppm and 46 ppm, respectively. MBTEX chemicals were nondetectable (see Table 1).

LEAD was detected in all discrete and composite samples ranging from 5.0 ppm to 13 ppm.

Groundwater was purged from the excavation at the time of tank removal and prior to collecting the water sample. Approximately 1550 gallons were purged from the excavation. Floating product, sheen and odors were observed in the groundwater within the tank excavation.

Chemical analysis of "grab" groundwater sample WS-1 detected TPHD and TPHG at concentrations of 8,300 parts per billion (ppb) and 130 ppb, respectively. Benzene was detected at a concentration of 1.0 ppb. All other analytical results were nondetectable (see Table 2).

All soil and groundwater sample analytical results are summarized in Tables 1 and 2.

Tank removal and subsequent soil sampling activities are documented in TPE's August 12, 1996 TANK CLOSURE REPORT, ALITA BRAND, 968 81ST AVENUE, OAKLAND, CA 94621.

3.0 PROPOSED SCOPE OF WORK

As a investigation of the vertical and horizontal extent of soil and groundwater contamination, TPE proposes the following scope of work:

- Conduct an Underground Service Alert (USA) location request to minimize the potential of encountering unexpected utilities, if necessary.

- Obtain soil boring permits from the Alameda County Flood Control and Water Conservation District, Water Resources Management, Zone 7 (Zone 7) and from the City of Oakland.

- Drill 3 exploratory soil borings to the depth of groundwater (approximately 15 feet) to further investigate the horizontal and vertical extent of contamination.

- Collect soil samples from each boring at approximately 5-foot depth intervals, changes in lithology, and occurrence of apparent soil contamination for construction of a boring log and selection for chemical analysis.

- At a minimum, analyze the vadose zone soil sample nearest to groundwater for TPHD, TPHG, and MBTEX.

- Collect a groundwater "grab" sample from each boring for chemical analysis.

- Analyze the groundwater samples for TPHD, TPHG and MBTEX.

- Seal the soil borings to ground surface with neat Portland cement.

- Prepare a Preliminary Site Assessment Report.

Details of the proposed scope of work are presented below.

3.1 Predrilling Activities

Before commencing drilling activities, TPE will obtain soil boring permits from Zone 7 and the City of Oakland, and visit the site to mark the proposed exploratory soil boring locations. TPE will contact USA to minimize the potential of encountering underground utilities and objects while conducting soil borings, if necessary, and notify ACHCSA.

3.2 Rationale for Soil Boring Locations

Based upon groundwater flow directions and gradient measurements collected at 1009 89th Avenue, the assumed groundwater flow direction is west-southwest. Figure 3 shows the proposed locations of the exploratory soil borings, SB-1 through SB-5. Soil borings SB-1, SB-2, SB-3 and SB-4 are located to be within 10 feet of the former tank excavation to delineate hydrocarbon contamination in vadose zone soils and groundwater discovered during tank removal. SB-5 is located in the assumed downgradient direction from the former tank excavation to delineate groundwater contamination in the downgradient direction. All soil borings are located in accordance with the California Regional Water Quality Control Board's "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites," dated August 10, 1990.

3.3 Soil Boring and Sampling Procedures

The exploratory soil borings are proposed to be drilled to depths up to 15 feet or groundwater (whichever occurs first) by a State of California licensed water well driller (C-57 Water Well Driller contractor's license) using 8-inch diameter, hollow-stem, auger drilling equipment or with rapid site assessment tools such as "Geoprobe", "Hydropunch", "CPT" etc... Drilling tools will be steam-cleaned before drilling each boring to minimize the potential of cross-contamination between borings or introducing offsite contamination to the initial boring. Representative soil samples will be collected for chemical analyses in the vadose zone at approximately 5-foot depth intervals below the ground surface, at changes in lithology, and the occurrence of apparent hydrocarbon contamination by advancing a California split-spoon sampler or alike sampler, equipped with 2-inch diameter by 6-inch long brass tubes, into the undisturbed soil beyond the tip of the drilling equipment. The sampling equipment will be cleaned before each sampling event by washing with an Alconox® solution and rinsing in tap water.

All soil borings will be sealed to ground surface by tremie with neat cement. Drill cuttings will be stored on site, contained in plastic sheeting or 55-gallon steel drums. The stored cuttings will be labeled to show contents, date stored, suspected chemical contaminant, expected date of removal, company name, contact person and telephone

number. Disposal of the cuttings and drums is the responsibility of the client. After the cuttings are characterized by chemical analysis, TPE will provide recommendations to the client and, upon their request, assist them in remediation or disposal of the cuttings and drums, or both in an appropriate manner as an additional work item. Maintenance of the plastic sheeting or drums containing the soil is the responsibility of the client.

Detailed boring logs will be prepared from auger return material and split-spoon samples. The soil will be logged according to the Unified Soil Classification System under the direction of a California Registered Geologist.

Appendices B and C document TPE's protocols relative to hollow-stem auger drilling and soil sampling procedures, and waste handling and decontamination procedures, respectively.

3.3.1 Soil Sample Selection for Chemical Analyses

All vadose zone soil core samples will be field-screened for the presence of apparent hydrocarbon soil contamination based on visible hydrocarbon stains, odors, and headspace analysis for volatile organic compounds using a Gastech, Inc., Trace-Techtor hydrocarbon vapor tester (HVT). Headspace analysis will be conducted by partially filling a quart-size plastic bag with a soil sample, sealing the bag air tight, and warming the bag to promote volatilization of hydrocarbons, if any, into the air space of the bag. After allowing for volatilization, the headspace of the bag will be sampled by the HVT and the response recorded in ppm.

Samples containing apparent hydrocarbon contamination will be selected for chemical analysis. If no contamination is apparent, the sample nearest to groundwater will be selected for chemical analysis.

Selected samples will be preserved in the brass tubes by quickly covering the open ends with Teflon sheeting and capping with plastic end-caps. The tubes will be labeled to show site name, project number, date and time collected, sample name and depth, and sampler name; sealed in quart-size plastic bags; and placed in an iced-cooler for

transport to a California Department of Health Services (DHS) certified laboratory accompanied by chain-of-custody documentation.

Appendix D documents TPE's protocol relative to sample handling procedures.

3.3.1.1 Chemical Analyses

Soil samples are proposed to be analyzed for TPHD and TPHG by the United States Environmental Protection Agency (EPA) Methods 3550/8015 and 5030/8015, respectively, and for MBTEX by EPA Method 8020.

3.3.2 Groundwater "Grab" Sampling for Chemical Analyses

Groundwater grab samples will be obtained after each borehole has reached groundwater by passing a dedicated teflon bailer through the hollow stem augers and/or drilling tools. Since dedicated bailers will be used for each groundwater sample, no decontamination of sampling equipment will be necessary between borings. The water samples will be collected in sterilized 1-liter glass bottles and 40-milliliter glass vials having Teflon-lined screw caps, filled with no headspace, and labeled to include: date, time, sample location, project number, and sampler name. The samples will be immediately stored in an iced-cooler for transport to a DHS certified laboratory accompanied by chain-of-custody documentation. Appendix D documents TPE's protocol relative to sample handling procedures

Appendices C and E document TPE's protocols relative to waste handling and decontamination procedures, and quality assurance and quality control procedures, respectively.

3.3.2.1 Chemical Analyses

The groundwater "grab" samples and a trip blank sample are proposed to be analyzed for TPHD and TPHG by EPA Method 5030/8015 and 3510/8015, respectively, and for MBTEX by EPA Method 8020.

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4.0 SITE ASSESSMENT REPORT

The information collected, analytical results, and TPE's conclusions and recommendations will be summarized in a report. The report will describe the work performed and include: copies of all required permits, an area map, a detailed site plan showing location of the drilled soil borings, graphic boring logs, tables summarizing results of soil and groundwater chemical analyses, and copies of certified analytical reports and chain-of-custodies.

Conclusions regarding the extent and type(s) of contamination will be presented within the context of this workplan. Recommendations for feasible remedial alternatives and/or supplemental sampling and analyses will be included.

The report will be reviewed and signed by a California Registered Geologist or Professional Engineer.

5.0 SITE SAFETY PLAN

The above scope of work will be conducted according to the Site Health and Safety Plan developed for the subject site and is included in Appendix F.

6.0 TIME SCHEDULE

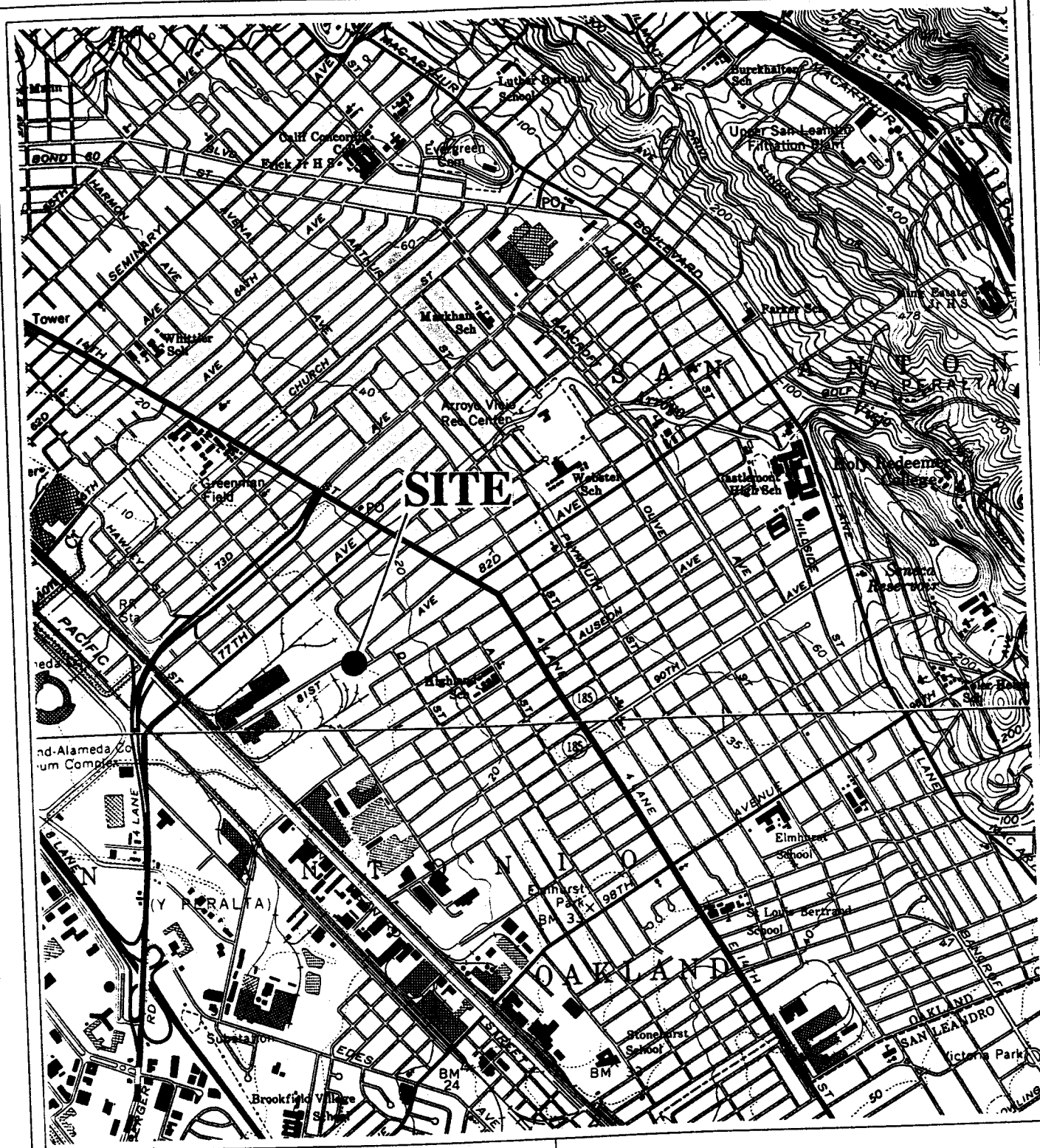
The projected time schedule for implementation of the activities described in this workplan is presented below. The schedule reflects a relatively problem-free program. However, delays in the workplan review, permitting, or laboratory analyses could lengthen the project schedule. Access difficulties, adverse weather, and regulator review could also delay the proposed time schedule. TPE will make every effort to adhere to the project schedule.

Week 1: Regulator Approval Received; Subcontracting, Conduct Underground Utility Survey, if Necessary.

Week 3: Drill 5 Soil Borings and Submit Soil and Groundwater Samples for Chemical Analyses.

Week 6: Receive Chemical Analyses, Interpret Data, and Write Preliminary Site Assessment Report.

Week 10: Submit Preliminary Site Assessment Report to Client.



LEGEND

REFERENCE: USGS 7.5 MINUTE
SERIES QUADRANGLE MAP
OAKLAND EAST, & SAN LEANDRO, CALIFORNIA
PHOTOREVISED 1980

-N-

0 2,000
SCALE IN FEET

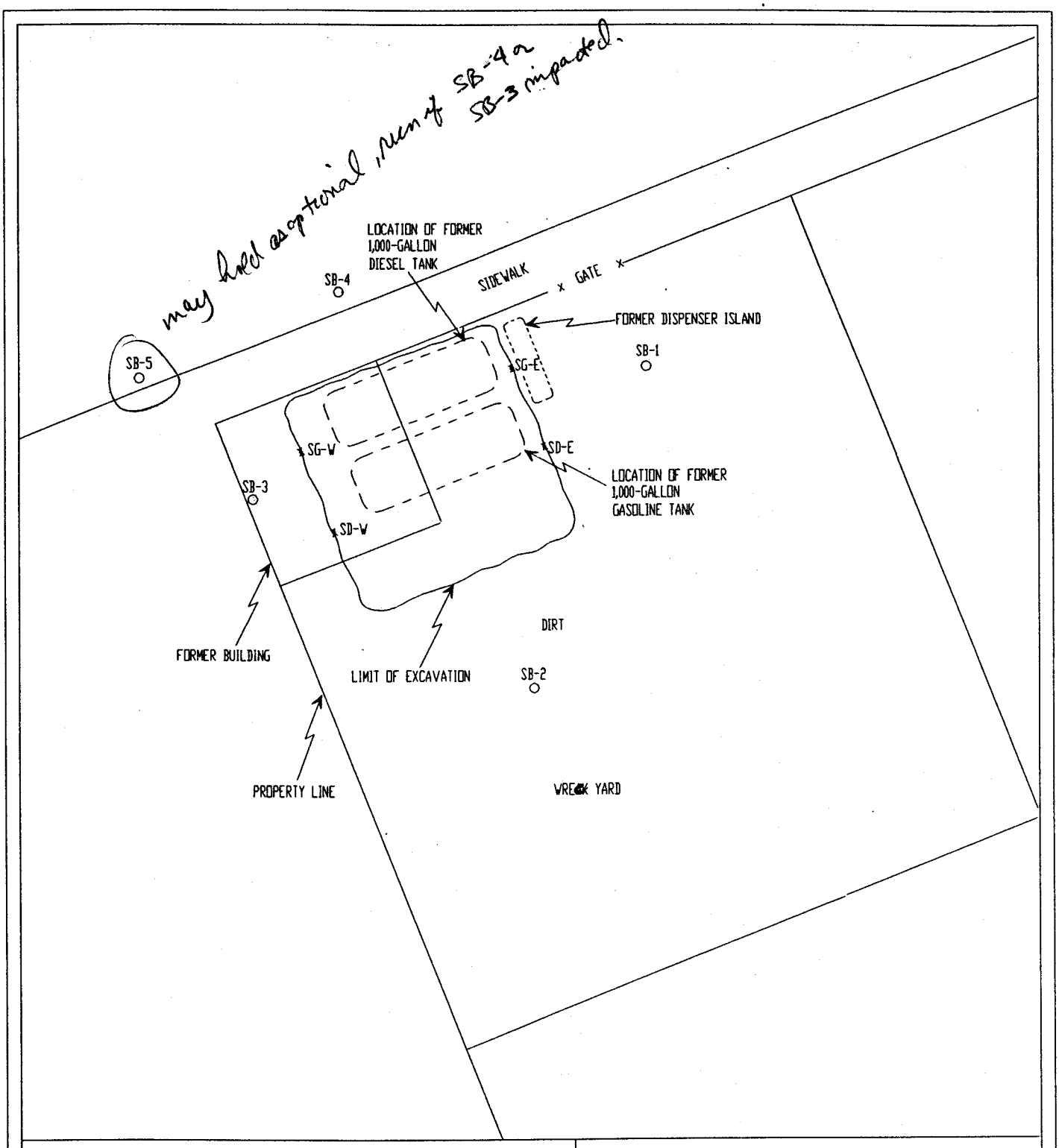
TANK PROTECT ENGINEERING

SITE VICINITY MAP

ALITA BRAND
968 - 81st AVENUE
OAKLAND, CA 94621

DATE	1/20/97
FIGURE	1
FILE #	383-N
DRAWN BY	VK
CHECKED BY	LNH

- Forgo MTBE, not found in soils or grnd-wtr



LEGEND

SD-W * NAME AND LOCATION OF SOIL SAMPLE

SB-1 ○ PROPOSED SOIL BORING LOCATIONS

-N-

0 10

APPROXIMATE IN FEET

TANK PROTECT ENGINEERING

SITE PLAN:
SOIL BORING LOCATION MAP

ALITA BRAND
968 - 81st AVENUE
OAKLAND, CA 94621

DATE	1/20/97
FIGURE	3
FILE #	383-2N
DRAWN BY	VK
CHECKED BY	LNH

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
(ppm[1])

Sample ID Name	Date	Depth (Feet)	TPHD	TPHG	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	Total lead
SD-E	08/16/96	7.5	50	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	7.5
SD-W	08/16/96	7.5	<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	5.0
SG-E	08/16/96	7.5	66	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	5.2
SG-W	08/16/96	8.0	21	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	9.1
SP1-A,B,C,D	08/16/96	1.0	340	46[2]	<0.05	<0.005	<0.005	<0.005	<0.005	13

[1] PARTS PER MILLION
[2] TPH-GAS CHROMATOGRAM LAB #HC1520, ALTHOUGH WITHIN THE REPORTING RANGE, DOES NOT MATCH THE TYPICAL GAS PATTERN

TABLE 2
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
(ppb)[1]

Sample ID Name	Date	Depth (Feet)	TPHD	TPHG	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	Total lead
WS-1	08/28/96	8.0	8,300	130	<5.0	1.0	<0.5	<0.5	<0.5	<0.005

[1] PARTS PER BILLION

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY, LETTER DATED NOVEMBER 22, 1996

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

November 22, 1996
StID # 3936

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

Mr. Richard Merlino
Alita Brand
1001 83rd Ave.
Oakland CA 94621

Re: Subsurface Investigation at Alita Brand, 976 81st Ave., Oakland CA 94621

Dear Mr. Merlino:

Thank you for the submission of the November 8, 1996 TPE Tank Closure Report for the removal of the two underground tanks from the above referenced site. Our office has completed its review of this report. It appears, based on the analytical results, that soil contamination is not severe, however, groundwater has been impacted. In order to determine if this site can be closed as a "low risk" groundwater case, you must adequately characterize the site. In order to do this, our office recommends the installation of temporary borings around the tank pit via a rapid site assessment tool eg Geoprobe, hydropunch, CPT etc. and the sampling of soil and groundwater samples. Should the results of this type of investigation define the extent of release and no risk to human health exist, site closure will be recommended to the Water Board.

Therefore, our office requests that you submit a work plan for additional site assessment. Please submit this work plan **within 45 days or by January 3, 1997.**

You should also be aware that the Underground Storage Tank Cleanup Fund exists to help tank owners and responsible parties finance the investigation and cleanup of petroleum contaminated sites. Enclosed please find an information sheet about the Fund.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

enclosure
c: B. Chan, files
Mr. L. Huckins, TPE, 2821 Whipple Rd., Union City, CA 94587
wp976

APPENDIX B

HOLLOW-STEM AUGER DRILLING AND SOIL SAMPLING PROCEDURES

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HOLLOW-STEM AUGER DRILLING AND SOIL SAMPLING PROCEDURES

Undisturbed soil samples will be recovered from soil without introducing liquids into the borings. At a minimum, soil samples as core will be taken at 5-foot depth intervals, changes in lithology and when encountering apparent soil contamination to termination depth, or through the aquifer zone of interest for lithologic logging.

Borings will be drilled with a hollow-stem auger and sampled with a California or modified California-type split-spoon sampler. Soil samples will be of sufficient volume to perform the analyses which may be required, including replicate analyses.

Soil from all borings will be described in detail using the Unified Soil Classification System and will be logged under the direction of a geologist, civil engineer or engineering geologist who is registered or certified by the State of California and is experienced in the use of the Unified Soil Classification System.

All wet zones above the free water zone will be noted and accurately logged.

Soil samples will be collected in clean brass or stainless steel sampling tubes in the split-spoon. Sediment traps will be used when unconsolidated sands and gravels fall from the sampler during retrieval. The brass tubes will be cut apart using a clean knife. The ends of the tubes will be covered with Teflon sheets or aluminum foil beneath plastic end caps and sealed with electrical or duct tape and properly labeled. In lieu of electrical or duct tape, the tubes may be individually sealed in plastic bags. The samples will be stored in an iced-cooler at a temperature of 4 degrees Celsius. In the Alameda County Water District, the samples will be stored in an iced-cooler containing dry ice.

Drill cuttings will be stored on site in 55-gallon drums or covered with plastic sheeting. Analytical results will be submitted immediately to the site owner for determination of appropriate disposal procedures. The soil borings not completed as wells will be backfilled with a cement grout.

APPENDIX C

WASTE HANDLING AND DECONTAMINATION PROCEDURES

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WASTE HANDLING AND DECONTAMINATION PROCEDURES

Decontamination: Any drilling, sampling or field measurement equipment that comes into contact with soil or groundwater will be properly decontaminated prior to its use at the site and after each incident of contact with the soil or groundwater being investigated. Proper decontamination is essential to obtain samples that are representative of environmental conditions and to accurately characterize the extent of soil and groundwater contamination. Hollow-stem auger flights and the drill bit will be steam-cleaned between the drilling of each well.

All sample equipment, including the split-spoon sampler and brass tubes, will be cleaned by washing with trisodium phosphate or alconox detergent, followed by rinsing with tap water. Where required by specific regulatory guidelines, a nonphosphate detergent will be used.

Waste Handling: Waste materials generated during site characterization activities will be handled and stored as hazardous waste and will be stored on site in appropriately labeled containers. Waste materials anticipated include excavated soil, drill cuttings, development and purge water, water generated during aquifer testing, water generated during decontamination and used personnel protection equipment such as gloves and Tyvek. The site owner will be responsible for providing the storage containers and will be responsible for the disposal of the waste materials. Drill cuttings from individual borings will be stored separately in drums or covered by plastic sheeting, and the appropriate disposal procedure will be determined by the site owner or TPE following receipt of the soil sample analytical results. Drums will be labeled to show material stored, known or suggested contaminant, date stored, expected removal date, company name, contact and telephone number.

APPENDIX D

SAMPLE HANDLING PROCEDURES

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SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination and will be delivered to the laboratory in an iced-cooler. The following sample packaging requirements will be followed.

- Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers and have custody seals affixed to them.

- Samples will be secured in coolers to maintain custody, control temperature and prevent breakage during transportation to the laboratory.

- A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory.

- Ice, blue ice or dry ice (dry ice will be used for preserving soil samples collected for the Alameda County Water District) will be used to cool samples during transport to the laboratory.

- Water samples will be cooled with crushed ice. In the Alameda County Water District, water samples will be buried in the crushed ice with a thermometer, and the laboratory will be requested to record thermometer temperature at the time of receipt.

- Each sample will be identified by affixing a pressure sensitive, gummed label or standardized tag on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection and the collector's initials.

- Soil samples collected in brass tubes will be preserved by covering the ends with Teflon tape and capping with plastic end-caps. The tubes will

APPENDIX E

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits and proper sample preservation and holding times also provide assurance of accurate analytical data.

TPE will follow a quality assurance and quality control (QA/QC) program in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples may be taken in the field to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip blanks, field blanks and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and laboratory analysis. They are water samples that remain with the collected samples during transportation and are analyzed along with the field samples to check for residual contamination. Analytically confirmed organic-free water will be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blanks will be numbered, packaged and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water

sample is poured into appropriate containers to simulate actual sampling conditions. Contamination due to air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of trip and field blanks, and false identifying numbers will be put on the labels. Full documentation of these collection and decoy procedures will be made in the site log book.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

Laboratory QA/QC: Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC tests designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and the United States Environmental Protection Agency-certified standards), duplicates, replicates and sample spikes. Internal QC also requires adherence to written methods, procedural documentation and the observance of good laboratory practices.

APPENDIX F

SITE SAFETY PLAN

SITE HEALTH AND SAFETY PLAN
TANK PROTECT ENGINEERING OF NORTHERN CALIFORNIA, INC.

Site: **Alita Brand** Project Number: **383**
968 81st Avenue
Oakland, CA 94621

Original Site Safety Plan: Yes (X) No ( ) Revision Number:
Plan Prepared by: **Tank Protect Engineering** Date: **1/21/97**
Plan Approved by: **Lee N. Huckins** Date: **1/21/97**

Please respond to each item as completely as possible. Where an item is not applicable, please mark "N/A".

1. KEY PERSONNEL AND RESPONSIBILITIES

Project Manager:	**Lee N. Huckins**	**(510) 429-8088**
Site Safety Manager:	**Lee N. Huckins**	**(510) 429-8088**
Alternate Site Safety Manager:		
Field Team Members:		

Agency Reps: Please specify by one of the following symbols: Federal: (F), State: (S), Local: (L), Contractor(s): (C)

(L) Alameda County Health Care Services Agency: (510) 567-6700
(L) City of Oakland Fire Department: (510) 238-3851

2. JOB HAZARD ANALYSIS

2.1 OVERALL HAZARD EVALUATION

Hazard Level:	High ( )	Moderate ( )	Low (X)	Unknown ( )
Hazard Type:	Liquid (X)	Solid ( )	Sludge ( )	Vapor/Gas (X)

Known or suspected hazardous materials present on site

Methyl t-butyl ether, Benzene, Toluene, Ethylbenzene, Xylenes (MBTEX)

Characteristics of hazardous materials included above (complete for each chemical presents):

MATERIAL #1			
Corrosive ( )	Ignitable (X)	Toxic (X)	Reactive ( )
Volatile (X)	Radioactive ( )	Biological Agent ( )	
Exposure Routes:	Inhalation (X)	Ingestion (X)	Contact (X)
MATERIAL #2			
Corrosive ( )	Ignitable ( )	Toxic ( )	Reactive ( )
Volatile ( )	Radioactive ( )	Biological Agent ( )	
Exposure Routes:	Inhalation ( )	Ingestion ( )	Contact ( )
MATERIAL #3			
Corrosive ( )	Ignitable ( )	Toxic ( )	Reactive ( )
Volatile ( )	Radioactive ( )	Biological Agent ( )	
Exposure Routes:	Inhalation ( )	Ingestion ( )	Contact ( )
MATERIAL #4			
Corrosive ( )	Ignitable ( )	Toxic ( )	Reactive ( )
Volatile ( )	Radioactive ( )	Biological Agent ( )	
Exposure Routes:	Inhalation ( )	Ingestion ( )	Contact ( )