

**GASOLINE UNDERGROUND FUEL
STORAGE TANK REMOVAL REPORT**

**ATLAS HEATING & AIR CONDITIONING COMPANY
1451 – 32ND STREET
OAKLAND, CALIFORNIA**

Prepared for:

**ATLAS HEATING AND AIR CONDITIONING COMPANY
OAKLAND, CALIFORNIA**

July 2003

STELLAR ENVIRONMENTAL SOLUTIONS
2198 SIXTH STREET, SUITE 201, BERKELEY, CA 94710
TEL: 510.644.3123 FAX: 510.644.3859

TRANSMITTAL MEMORANDUM

TO: ATLAS HEATING & AIR CONDITIONING **DATE: JULY 28, 2003**
1451 32ND STREET
OAKLAND, CA 94607

ATTENTION: MR. ROBERT TUCK **FILE:**
SUBJECT: GASOLINE UFST CLOSURE
REPORT
1451 32ND STREET, OAKLAND, CA

Alameda County
JUL 30 2003
Environmental Health

WE ARE SENDING: **HEREWITH** **UNDER SEPARATE COVER**
 VIA MAIL **VIA**

THE FOLLOWING: "GASOLINE UFST CLOSURE REPORT" (DATED 7/24/03)

INVOICE #2003-36-01 (ATLAS HEATING ONLY)

- | | |
|--|--|
| <input type="checkbox"/> AS REQUESTED | <input type="checkbox"/> FOR YOUR APPROVAL |
| <input type="checkbox"/> FOR REVIEW | <input checked="" type="checkbox"/> FOR YOUR USE |
| <input type="checkbox"/> FOR SIGNATURE | <input checked="" type="checkbox"/> FOR YOUR FILES |

COPIES TO: **ALAMEDA COUNTY HEALTH CARE** **BY: Bruce Rucker**
~~SERVICED BY THE CITY OF OAKLAND~~

CITY OF OAKLAND FIRE
PREVENTION BUREAU
(ATTN: LEROY GRIFFITH)

July 24, 2003

Mr. Robert Tuck
Atlas Heating and Air Conditioning Company
1451-32nd Street
Oakland, California 94607

Alameda County
JUL 31 2003
Environmental Health

Subject: Gasoline UFST Closure Report
Atlas Heating & Air Conditioning Company Facility
1451 – 32nd Street, Oakland, California

Dear Mr. Tuck:

This report documents the gasoline underground fuel storage tank (UFST) removal activities conducted by your contractor (Bernabe & Brinker, Inc.) between December 2000 and April 2001 and evaluated the residual soil and groundwater contamination in light of environmental regulatory considerations. Stellar Environmental Solutions, Inc. (SES) prepared this report relying wholly on documentation provided to SES by Bernabe & Brinker, Inc. The work completed by Bernabe & Brinker, Inc. at the site included: obtaining the UFST removal permits and coordinating Fire Department inspections; removing and disposing of the two UFSTs and residual product; removing 80 tons of contaminated soil and 4,800 gallons of excavation water; collecting for laboratory analysis a pit water and soil samples from the UFST excavation; disposing of excavated soil and pumped pit water; and excavation backfilling and compaction.

While no residual soil contamination was detected in excess of regulatory agency screening level criteria, groundwater has been impacted by gasoline, MTBE and BTEX constituents. We recommend that this report be provided to the City of Oakland Fire Department for their evaluation. It is probable that they will transfer the case to Alameda County Environmental Health Department who will likely request additional site investigation to evaluate the extent and magnitude of groundwater contamination. Please contact us at (510) 644-3123 if you have any questions.

Sincerely,

Bruce Rucker, R.G., R.E.A.
Project Manager



**GASOLINE UNDERGROUND FUEL
STORAGE TANK REMOVAL REPORT**

**ATLAS HEATING & AIR CONDITIONING COMPANY
1451 – 32ND STREET
OAKLAND, CALIFORNIA**

Prepared for:

**ATLAS HEATING AND AIR CONDITIONING COMPANY
1451-32ND STREET
OAKLAND, CALIFORNIA 94607**

Prepared by:

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201
BERKELEY, CA 94710**

July 24, 2003

Project No. 2003-35

TABLE OF CONTENTS

	Page
INTRODUCTION.....	1
Project Scope and Objectives.....	1
Site Description.....	1
UFST Description and Usage History.....	1
2.0 UFST REMOVAL	4
Pre-Field Work Planning.....	4
UFST and Piping Removal and Soil Stockpiling.....	5
Soil Sampling and Analyses.....	5
Waste Transport and Disposal	6
Excavation Backfilling and Site Restoration	7
3.0 ANALYTICAL RESULTS, REGULATORY CONSIDERATIONS, RESIDUAL CONTAMINATION, DISTRIBUTION, AND FATE.....	8
Results of Laboratory Analyses.....	8
Regulatory Considerations.....	9
Lithology and Groundwater Hydrology.....	11
Residual Contamination and Potential Migration.....	11
Groundwater Impacts and Beneficial Uses	11
4.0 SUMMARY AND CONCLUSIONS.....	13
5.0 LIMITATIONS.....	15
6.0 REFERENCES.....	16

Appendices

Appendix A	UFST Removal Permits and Regulatory Agency Documentation
Appendix B	Waste Disposal Documentation
Appendix C	Certified Analytical Laboratory Results and Chain-of-Custody Record

TABLES AND FIGURES

Tables	Page
Table 1 Underground Fuel Storage Tank Analytical Results 1451 - 32 nd Street, Oakland, California	9

Figures	Page
Figure 1 Site Location Map	2
Figure 2 Site Plan of UFST Excavation and Sampling Results	3

1.0 INTRODUCTION

PROJECT SCOPE AND OBJECTIVES

Stellar Environmental Solutions, Inc. (SES) was retained by Atlas Heating & Air Conditioning to complete this documentation report describing the December 2000 UFST removal and associated environmental sampling. SES was not associated with the execution of the work but is relying wholly on data provided to SES by Bernabe & Brinker, Inc. The objective of this report is to present the available data in a form that the interested regulatory agencies, and in particular, Oakland Fire department, can rely upon as adequate documentation, and to discuss any residual environmental issues indicated by the soil and groundwater data collected.

SITE DESCRIPTION

The project site is an active heating and air conditioning service firm (Atlas Heating & Air Conditioning Company) located at 1451 – 32nd Street, Oakland, Alameda County, California (site). Figure 1 is a site location map. Figure 2 shows the location of the former UFST in relation to the site building and adjacent streets.

UFST DESCRIPTION AND USAGE HISTORY

This project entailed the removal of two ²20,000-gallon unleaded gasoline UFSTs formerly (until 1999) associated with the current site operation (they were utilized to fuel company cars and light trucks). The UFSTs were cylindrical, single-walled, steel, and were installed in a common sand- and pea gravel-backfilled excavation slightly larger than the UFSTs. The top of the UFSTs had several ports/pipes typical of these types of UFSTs including a fill port, turbine, dispenser piping connection and vent pipe. As shown on Figure 2, the UFST dispensers were located immediately adjacent to (east of) the UFSTs. The UFSTs were not tied down to any concrete anchor slab (a.k.a. deadman), as is sometimes done when shallow groundwater is considered to present a buoyancy problem. The UFSTs were configured as shown in Figure 2, with the long axis of the UFSTs oriented approximately north-south.

lay level



SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

1451 32nd Street
Oakland, CA

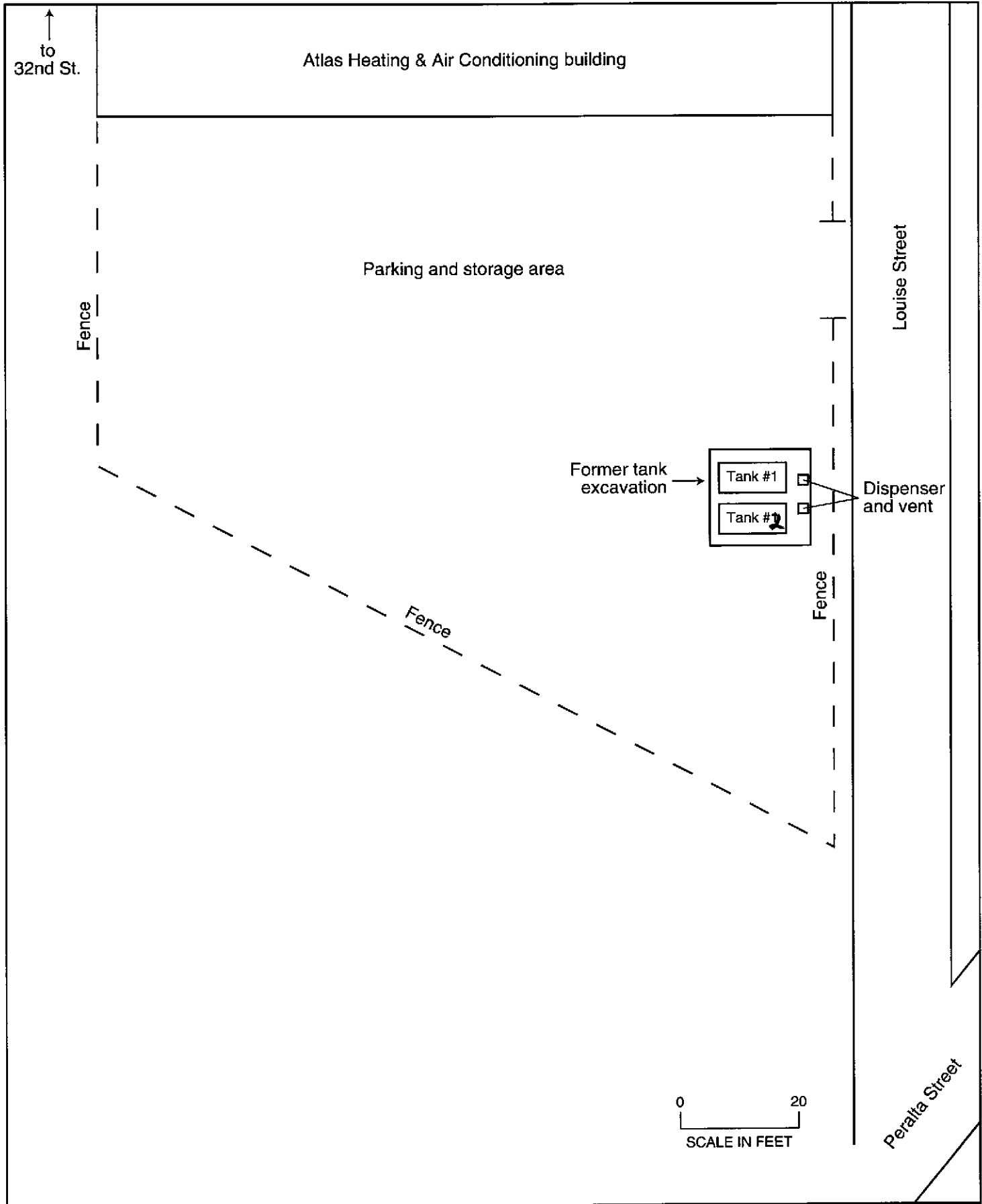
By: MJC

JUNE 2003

Figure 1



2003-36-03



2008-36-04



SITE PLAN—ATLAS HEATING & AIR CONDITIONING

1451 32nd Street
Oakland, CA

By: MJC

JUNE 2003

Figure 2

2.0 UFST REMOVAL

The following section summarizes the pre-field work planning and UFST removal activities conducted by the Bernabe & Brinker, Inc. team. The following companies or agencies participated in the UFST removal:

- ***Bernabe & Brinker, Inc.*** (California Contractor's License No. 610617): Owner's prime contractor for coordinating the UFST removal and site restoration project.
- ***Ecology Control Industries*** (USEPA Transporter ID No. CAD982030173): UFST offsite transport.
- ***Ecology Control Industries*** (USEPA ID No. CAD009466392): UFST scrapping/decommissioning.
- ***McCampbell Analytical, Inc.*** (ELAP #1644): Soil and water sample chemical analyses.
- ***City of Oakland Fire Department, Office of Emergency Services (OFD-OES)***: Permitting agency for tank removal and initial lead agency with regard to any tank-related environmental issues.
- ***Republic Services Vasco Road Landfill (Livermore, California)***: Class III landfill to which excavated soil was disposed.
- ***Seaport Environmental (Redwood City, CA)***: Non-hazardous wastewater treatment/disposal facility to which pumped pit water was sent.
- ***Romic Environmental (Palo Alto, CA)***: Hazardous wastewater treatment/disposal facility to which residual UFST product and interior washout rinseate was sent.

PRE-FIELD WORK PLANNING

Prior to UFST removals, Bernabe & Brinker (on behalf of Atlas Heating & Air Conditioning) obtained a UFST removal permit from the City of Oakland Fire Department, Office of Emergency Services (copy included in Appendix A).

There was no documentation that notification to Bay Area Air Quality Management District (BAAQMD) for the UFST removal was made, per the BAAQMD Regulation 8, Rule 40.

UFST AND PIPING REMOVAL AND SOIL STOCKPILING

Prior to tank removal, approximately 225 gallons of residual gasoline and interior washing rinseate was pumped from the UFST for offsite transport (discussed below).

On December 1, 2000, surface cover was removed and backfill material was removed to expose the top and sides of the UFST. Approximately 100 pounds of dry ice (solid carbon dioxide) was added to each UFST to render their interior atmospheres inert (non-flammable). The UFSTs were subsequently removed from the excavation at approximately 3:00 p.m. in the presence of Mr. Leroy Griffin of the Oakland Fire Department. The UFSTs appeared to be structurally sound with no obvious holes or cracks. Following the visual inspection, the UFSTs were loaded for offsite transport and disposal (see the following section for discussion).

The excavation depth was 11 feet below grade and measured approximately 18 feet long by 13 feet wide. A total of approximately 80 tons of backfill material was removed in exposing the UFST and in removing obviously contaminated soil. This material was temporarily stockpiled onsite near the UFST, underlain and covered by plastic sheeting. As shown on Figure 2, the final limits of the excavation included the footprint of the UFST dispensers.

SOIL SAMPLING AND ANALYSES

UFST Excavation Confirmation Sampling

Excavation confirmation sampling was conducted on February 2, 2001, and was witnessed by Mr. Gomez of the Oakland Fire Department. There is an Oakland Fire Department field inspection notice (dated December 1, 2000) that references collection of soil samples beneath the UFSTs (at the time of removal). However, there was no analytical laboratory report for that sampling event, and it appears that samples were in fact not collected, and were collected in the referenced February 2001 sampling event.

Two 4-point composite soil samples were collected, one in each of the east and west excavation sidewalls at a depth of approximately 7 feet. One grab-groundwater sample (W-1) was also collected from the standing water in the excavation (water depth at that time was 9 feet below grade). The soil samples were collected by digging into native soil with the backhoe bucket, then removing the sample and placing it in 6-inch brass sleeves with plastic caps. Evidence of contamination during UFST removals included discolored soil and petroleum odor from the excavation. Petroleum sheen was evident on the pit water surface. The samples were labeled, entered onto a chain-of-custody form, and placed into a chilled ice chest for transportation to the laboratory.

Waste Soil Disposal Sampling and Analyses

Soil sampling to characterize the approximately 80 tons of excavated material stockpiled onsite was conducted on February 2, 2001. Four discrete samples ("Soil S1" through "Soil S4") were collected from the material and analyzed for TVHg, BTEX, MTBE and total and soluble lead. The methodology for the sampling consisted of removing the upper 6 to 12 inches of soil then transferring to the sampling container.

WASTE TRANSPORT AND DISPOSAL

UFSTs

The two ~~20~~,000-gallon UFSTs and associated piping were transported offsite for scrapping. Prior to transport, a Uniform Hazardous Waste manifest was completed. The hazardous waste generator I.D. number assigned by the State of California to Atlas Heating & Air Conditioning for this UFST removal was CAC002325433. The UFST was transported offsite on April 22, 2002 by Ecology Control Industries (EPA Transporter I.D. no. CAD982030173). The U.S. Department of Transportation proper shipping name and hazard class assigned to the UFST on the manifest were "Waste Empty Storage Tank" and "Non-RCRA Hazardous Waste Solid," respectively. The State of California waste code assigned to the UFST was "512" (for containers larger than 30 gallons). A copy of the hazardous waste manifest and the Certificate of Tank Destruction are included in Appendix B.

Excavated Soil

Maximum contaminants detected in the four stockpile soil samples included 250 mg/kg gasoline, 0.12 mg/kg toluene 0.87 ethyl benzene and 9.7 mg/kg xylenes. Maximum total lead was 24 mg/kg. No benzene or MTBE were detected. The four discrete samples were subsequently composited in the laboratory into one sample and analyzed for soluble lead, which was present at 0.28 mg/L. A waste profile acceptance package was submitted to Republic Services Vasco Road Landfill (Livermore, California) for landfill disposal of the approximately 80 tons of excavated soil and backfill material. Landfill acceptance was granted, and the material was loaded and transported offsite on April 5, 2001. The tonnage report from the landfill, documenting landfill acceptance of the soil, is included in Appendix B.

Pit Water

To address residual groundwater contamination (evidenced by fuel contamination in the initial pit water sample), on January 16, 2001 approximately 4,800 gallons of standing water in the excavation

was pumped out and transported to Seaport Environmental (Redwood City, California) for treatment and discharge. Documentation of wastewater transport and disposal is included in Appendix B.

EXCAVATION BACKFILLING AND SITE RESTORATION

The excavation was backfilled in April 2001. The excavation was backfilled with clean, imported fill material (Class 2 base rock material provided by EBI Aggregates of Oakland, California). Backfill material was emplaced in approximately 1-foot lifts, and each lift was compacted with a vibratory plate attachment on the excavator. The surface of the backfilled excavation was resurfaced with concrete to match the previous surface.

3.0 ANALYTICAL RESULTS, REGULATORY CONSIDERATIONS, RESIDUAL CONTAMINATION, DISTRIBUTION AND FATE

RESULTS OF LABORATORY ANALYSES

The soil samples were submitted under chain-of custody control to McCambell Analytical which is certified by the State of California to perform the requested analyses.

As specified in the UFST closure plan and confirmed by Mr. ~~Griffin~~^{Empez} at the time of the UFST removal, soil samples were analyzed for the following:

- Total volatile hydrocarbons as gasoline (TVHg), by Environmental Protection Agency (EPA) Method 8015;
- Benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl *tertiary*-butyl ether (MTBE), by EPA Method 8020; and
- Total lead, by EPA Method 6010B.
- Soluble lead (by WET Method) (only the composite of stockpiled soil)

Table 1 summarizes the analytical results of excavation confirmation and stockpiled soil samples. Appendix C contains the certified analytical laboratory reports and chain-of-custody records.

Laboratory quality control samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (Appendix C).

No contaminants were detected above regulatory agency screening level criteria in either of the two excavation sidewall soil composite samples. Contaminant concentrations in the excavation stockpile samples were below hazardous concentrations. The following contaminants detected in the pit water sample above regulatory agency screening level criteria include gasoline (400 µg/L), benzene (6.3 µg/L) and MTBE (11,000 µg/L). Lead was detected in the pit water sample at 0.01 mg/L (well below the regulatory agency screening level criterion).

Table 1
Underground Fuel Storage Tank Analytical Results
1451 - 32nd Street, Oakland, California
(Samples collected February 2, 2001)

Sample ID	Sample Depth (feet)	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Total Lead
<i>Excavation Confirmation Soil Samples (concentrations in mg/kg)</i>								
West 1-4 Composite (a)	7'	6.5	< 0.005	0.03	< 0.005	0.021	< 0.05	6.6
East 1-4 Composite (a)	7'	< 1.0	< 0.005	< 0.005	< 0.005	0.026	< 0.05	14
Soil RBSLs (c.)		100	0.045	2.6	2.5	1.0	0.028	750
Soil RBSLs (d)		400	0.18	8.4	24	1.0	1.0	750
<i>Stockpiled Soil Samples (concentrations in mg/kg)</i>								
S1	Not appl.	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	24
S2	Not appl.	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	6.9
S3	Not appl.	250	< 0.005	0.12	0.87	9.7	< 0.1	12
S4	Not appl.	35	< 0.005	0.017	0.012	0.53	< 0.05	10
S1-S4 (b)	Analyzed only for soluble lead. Detected at 0.28 mg/L							
<i>Pit Water Sample (concentration in µg/L)</i>								
W-1	9'	400	6.3	1.3	< 0.5	10	11,000	0.010
Groundwater RBSLs (e)		100	1.0	40	30	13	5.0	3.2
Groundwater RBSLs (f)		500	46	130	290	13	1,800	3.2

Notes:

- (a) Sample is a 4-point composite from four locations along the excavation sidewall.
 - (b) Sample is a 4-point composite of samples S1, S2, S3 and S4.
 - (c.) For surface soil (< 10 feet deep) at commercial/industrial sites where groundwater is a current or potential drinking water source.
 - (d) For surface soil (< 10 feet deep) at commercial/industrial sites where groundwater is not a current or potential drinking water source.
 - (e) For commercial/industrial sites where a drinking water resource is threatened.
 - (f) For commercial/industrial sites where a drinking water resource is not threatened.
- NA = Not Analyzed for this constituent.
RBSLs = Regional Water Quality Control Board, San Francisco Bay Region "Risk Based Screening Levels."
TVHg = Total volatile hydrocarbons- gasoline range.

REGULATORY CONSIDERATIONS

The Oakland Fire Department, Office of Emergency Services (OFD-OES) is the lead regulatory agency for UFST removal permitting, onsite inspection, and directing the collection of UFST-related

soil samples. We understand that, when UFST-sourced residual soil and/or groundwater contamination is discovered, OFD-OES generally transfers the case to the Alameda County Department Environmental Health (ACDEH). The ACDEH is a Local Oversight Program (LOP) to the RWQCB, which has ultimate decision-making authority regarding contamination issues affecting groundwater.

The site is not listed on the RWQCB's on-line database of reported petroleum UST releases, nor is there any documentation available that ACDEH has been notified of this case.

Soil Contamination

The most applicable published numerical criteria governing residual soil and groundwater contamination are the RWQCB's Risk-Based Screening Levels (RBSLs) (RWQCB, 2001). These are screening-level criteria used to evaluate if additional investigation and/or remediation is warranted. Criteria to be considered in using the RBSLs include: contamination limited to surface soil (less than 10 feet deep) or to subsurface soil; fine-grained vs. coarse-grained soil; residential or commercial/industrial land use; and whether groundwater is or is not a known or potential drinking water source. For the detected site contaminants, the RBSL values are the same for surface soil and subsurface soil.

The appropriate RBSLs for this site are for coarse-grained soil (a conservative assumption since grain-size analysis has not been conducted) and commercial/industrial land use (because the owner has no plans to redevelop the property with residential land use). Qualifying for the usually higher RBSL values for sites where groundwater is not a current or potential drinking water source requires obtaining a site-specific variance from the RWQCB. The RWQCB completed an East Bay Beneficial Use Study (RWQCB, 1999) that covers the Richmond to Hayward East Bay Basin Area and, based on multiple technical criteria, divided the Basin into Zone A (Significant Drinking Water Resource Potential), Zone B (Groundwater Unlikely to be used as Drinking Water Source) and Zone C (Shallow Groundwater Unusable). The subject site falls within Zone A.

There was no contamination detected above RBSLs in either of the two excavation UFST sidewall samples.

Groundwater Contamination

As with soil, the RWQCB publishes RBSLs for groundwater contamination. For each contaminant, separate groundwater RBSLs are published for two scenarios: 1) a drinking water resource is threatened and 2) a drinking water resource is not threatened. The RWQCB completed an East Bay Beneficial Use Study (RWQCB, 1999) that covers the Richmond to Hayward East Bay Basin Area and, based on multiple technical criteria, divided the Basin into Zone A (Significant Drinking Water

Resource Potential), Zone B (Groundwater Unlikely to be used as Drinking Water Source) and Zone C (Shallow Groundwater Unusable). The subject site falls within Zone A. Qualifying for the higher RBSLs (for the scenario where a drinking water source is not threatened) requires obtaining a site-specific variance from RWQCB (this variance has not been obtained).

Groundwater contaminants detected in excess of the more stringent RBSL (where a drinking water source is threatened) include gasoline, benzene and MTBE. The only groundwater contaminant detected in excess of the less stringent RBSL (where a drinking water source is not threatened) was MTBE. In either scenario, groundwater contamination has been detected in excess of RBSL criteria, suggesting that additional investigation is warranted.

LITHOLOGY AND GROUNDWATER HYDROLOGY

Native soil evident in the excavation sidewalls boreholes was predominantly low permeability, fine-grained clay/silt. Groundwater infiltrated the 10' deep excavation and equilibrated at approximately 9' bgs. The regional groundwater flow direction in the area is likely to the west (following topography, toward San Francisco Bay), although groundwater flow direction may vary locally based on lithology.

RESIDUAL CONTAMINATION AND POTENTIAL MIGRATION

There is no documented residual soil contamination above regulatory agency screening level criteria, indicating that all formerly-contaminated soil/backfill material was removed. The presence of gasoline, BTEX and MTBE contamination in the pit-water sample confirm that groundwater has been impacted by the former UFST release. Dissolved contamination in groundwater likely migrates primarily by advection in the direction of groundwater flow, likely to the west. The lateral extent of the groundwater contamination is likely limited by the low-permeability soils, the inferred slight hydraulic gradient, and the low groundwater contaminant concentrations. In the apparent absence of a continuing contaminant source, it is likely that the residual groundwater contamination will naturally attenuate without significant downgradient migration.

GROUNDWATER IMPACTS AND BENEFICIAL USES

In general, impacts of contamination on the environment by fuel contaminants are evaluated on a case-by-case basis, with consideration given to drinking water standards when appropriate. Because no water-bearing zone or aquifer in this area is in use for drinking or other types of water use, application of the drinking water standard does not appear to be appropriate. The likelihood of groundwater impacts to beneficial use in this area appears to be negligible.

SITE CLOSURE CRITERIA

The ACEH and RWQCB generally require that the following criteria be met before issuing regulatory closure of petroleum release cases:

1. The contaminant source has been removed (i.e., the UFST and obviously-contaminated backfill material). This criterion has been met.
2. The groundwater contaminant plume is stable or reducing (i.e., groundwater contamination is not increasing in concentration or lateral extent). This criterion has not yet been met, and will likely require installation and sampling of groundwater monitoring wells.
3. If residual contamination (soil or groundwater) exists, there is no reasonable risk to sensitive receptors (i.e., contaminant discharge to surface water or water supply wells) or to site occupants. This criterion is generally met by conducting a Risk-Based Corrective Action (RBCA) assessment that models the fate and transport of residual contamination in the context of potential impacts to sensitive receptors. This task is generally conducted after the previous two criteria have been met.

4.0 SUMMARY, CONCLUSIONS, OPINION AND RECOMMENDATIONS

The summary and conclusions presented in this section are based on the data delineated in the body of this report, using documentation provided to SES by the owner's UFST removal contractor.

- Two 2,000-gallon gasoline UFSTs were removed from the facility located at 1451 – 32nd Street Street, Oakland on December 1, 2000. The UFSTs were properly inerted and disposed of at a permitted facility. All UFST removal and confirmation sampling activities were conducted in accordance with a Fire Department permit and under Fire Department inspection.
- Excavation confirmation soil samples contained no fuel contaminants above regulatory agency screening level criteria. A pit water sample contained gasoline, BTEX and MTBE above regulatory agency screening level criteria.
- The excavation was backfilled with clean imported fill, compacted and resurfaced.
- Approximately 80 tons of excavated backfill material was characterized, determined to be non-hazardous, and disposed of as non-hazardous waste at a permitted landfill.
- The base of the original UFST excavation, as evidenced by backfill material, was approximately 10 feet bgs. Native soils were low-permeability clay and silt. Groundwater infiltrated the excavation and equilibrated at approximately 9 feet below grade.
- The available data indicate that all contaminated soil has been removed and there was residual groundwater contamination by gasoline, BTEX and MTBE. Groundwater impacts could be confirmed by advancing temporary soil boreholes in the immediate vicinity of the former UFST and collecting grab groundwater samples for laboratory analysis. It is likely that regulatory agencies will require such confirmation prior to considering the case for regulatory closure.

OPINION AND RECOMMENDATIONS

- Groundwater contamination by gasoline, BTEX and MTBE was detected above regulatory agency screening level criteria at the time of the UFST removal. It is likely that regulatory agencies will require additional site characterization to confirm the extent and magnitude of groundwater contamination. This generally involves submitting a workplan for and

implementing a limited exploratory borehole drilling and sampling program in the vicinity of the UFST.

- We recommend that this report be submitted to the OFD-OES and the ACDEH. It is likely that OFD-OES would transfer the case to ACDEH to assume lead regulatory agency status if any additional investigation work is required.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Atlas Heating & Air Conditioning Company, their authorized representatives, and the regulators. No reliance on this report shall be made by anyone other than the client and regulators for whom it was prepared.

The findings and conclusions presented in this report are based wholly on documentation provided to SES by Bernabe and Brinker, Inc. SES did not participate in the planning or implementation of the discussed field activities. This report provides neither a certification nor guarantee that the property is free of hazardous substance contamination. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The SES personnel who prepared this report are qualified to conduct such work, and have accurately reported the information available but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the data were generated. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the historical site conditions as based on the investigation and remediation completed.

6.0 REFERENCES

California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB), 1999 .
East Bay Plain Groundwater Basin Beneficial Use Evaluation Report – Alameda and
Contra Costa Counties. June

Oakland Fire Department
UFST Closure Plan and Permit Application

CITY OF OAKLAND
FIRE PREVENTION BUREAU
250 Frank Ogawa Plaza, Ste. 3341
OAKLAND, CALIFORNIA 94612-2032
(510) 238-3851

APPLICATION for PERMIT to INSTALL, REMOVE or REPAIR TANKS
In the CITY OF OAKLAND

Request Submittal Date: 8/21/00 10/30/00

PLEASE CIRCLE APPROPRIATE ACTIONS: Application is hereby made for permit to:

(a) Remove (b) Install (c) Repair (d) Modify (e) Abandon/Close in Place **A**

TWO
(a) Gasoline (b) Fuel oil (c) ~~Diesel~~ (d) _____ tank(s) and excavate, commencing:

(a) four feet inside the curb line*; (b) inside the property line; (c) aboveground; (d) underground tank(s)
*inside curb line, please attach copy of sidewalk/excavation permit from PLANNING AND BUILDING

on the W side of Louise (St) Ave. 1000 feet 5 of 32ND (St) Ave.

Site Address: 1451 32ND Street Present storage 1 Gas 1 Diesel

Owner: Robert & Elizabeth Tuck Address 1451 32ND Street Phone 893-1343
Oakland CA 94608

Applicant: Bernabe Brinker Address 2240 Wood Street Phone 451-3482
Oakland CA 94608

Sidewalk surface to be disturbed NONE Number of Tanks 2 Capacity 2000 Gallons ea.

Remarks _____

Signature [Signature], Agent

PLEASE ATTACH/SUBMIT: (All applicants must have a City Business License Permit)

- (2) Copies of Closure Plans for underground tank removal(s)
- (2) Sets of plans and (1) copy of specifications for above ground tank removal
- (2) Sets of plans and (2) sets of application packets for underground tanks all with modifications
- (2) Sets of plans for aboveground tank installation and specifications
- copy or prepare to show Planning and Building approval for aboveground tank removal and tank repair

NOTE: FOR TANK INSTALLATION PLEASE SUBMIT THIS APPLICATION FORM ALONG WITH A APPLICATION FOR PERMIT TO OPERATE, MAINTAIN OR STORE

FOR OFFICE USE ONLY

Permit No. 81-00
Copies to: Electrical Inspection

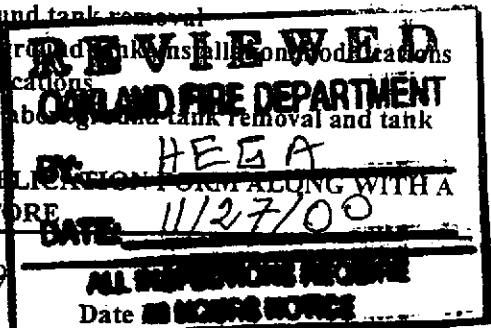
Amt. Recv'd 7650.00

Ck# 4599

Receipt# 809213

Cash

Recv'd by: [Signature]



**City of Oakland, Fire Department, Office of Emergency Services
Hazardous Materials Program
APPLICATION FOR UNDERGROUND TANK REMOVAL**

F A C I L I T Y	Project Contact & Phone # <u>Robert or Elizabeth Tuck</u>			
	Facility Name <u>Atlas Heating and Air Conditioning</u>		Phone# <u>(510) 893-1343</u>	
	Address <u>1451 32ND Street Oakland, CA 94608</u>			
	Cross Street <u>Louise</u>			
	Owner/Operator <u>Robert & Elizabeth Tuck</u>		Phone # <u>(510) 893-1343</u>	
C O N T R A C T O R	Contractor Name <u>Bernabe AND BRINKER, INC</u>		Phone # <u>(510) 451-3111</u>	
	Contractor Address <u>2240 Wood St Oakland, CA 94608</u>		CA License # <u>510617</u>	
	Hazardous Waste Certified: (Qualifying license category <u>A HAZ</u>) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Class <u>A HAZ</u>	
	City of Oakland Business Tax License # <u>546160</u>		Workers Comp# <u>1305773-00</u>	
	Does this site have a leaking UST (or did it have a leaking tank system?)		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	Permit # <u>Rec# 20733</u>			
T A N K S	State Tank ID#	Tank Size	Material That Was Stored	Proposed Removal Date
	39-	2000	Gasoline	
	39-	2000	Aired Gasoline	
	39-			
	39-			
	39-			
	39-			
P L A N	<p align="center"> <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> APPROVED WITH CONDITION(S) <input type="checkbox"/> DISAPPROVED </p>			
	PLAN REVIEWER'S SIGNATURE <u>[Signature]</u>		DATE OF APPROVAL <u>11/27/00</u>	

OAKLAND FIRE DEPARTMENT
 IR IE VASRP
 BY: HEEA
 DATE: 11/27/00
 ALL INSPECTIONS REQUIRE
 48 HOURS NOTICE

APPLICANT MUST PERFORM ALL WORK IN ACCORDANCE WITH CITY OF OAKLAND ORDINANCES, STATE LAWS, AND RULES AND REGULATIONS OF THE CITY OF OAKLAND FIRE SERVICES AGENCY. OWNER OR LICENSED AGENT'S SIGNATURE CERTIFIES THE FOLLOWING: I CERTIFY THAT IN THE PERFORMANCE OF THE WORK FOR WHICH THIS INSTALLATION PLAN IS ISSUED, I SHALL NOT EMPLOY ANY PERSON IN SUCH A MANNER AS TO BECOME SUBJECT TO WORKER'S COMPENSATION LAWS OF CALIFORNIA. CONTRACTOR'S HIRING OR SUBCONTRACTING SIGNATURE CERTIFIES THE FOLLOWING: I CERTIFY THAT IN THE PERFORMANCE OF THE WORK FOR WHICH THIS INSTALLATION PLAN IS ISSUED, I SHALL EMPLOY PERSONS SUBJECT TO WORKER'S COMPENSATION LAWS OF CALIFORNIA.

APPLICANT'S SIGNATURE [Signature] TITLE: Agent DATE: 8/21/2000

INDICATE THE RESPONSIBLE PARTY TO BE BILLED FOR ADDITIONAL FSA/OES STAFF TIME EXPENDED BEYOND THE HOURS COVERED BY THE INITIAL DEPOSIT AMOUNT. THE PARTY MUST ACKNOWLEDGE THIS RESPONSIBILITY FOR THE ADDITIONAL BILLING BY SIGNATURE AND DATE BELOW.

NAME Bernabe & Brinker, INC.

MAILING ADDRESS 2240 Wood St Oakland, CA 94607
STREET CITY, STATE, ZIP

DAY PHONE NUMBER (310) 451-3482
area code phone #

SIGNATURE John Doe, Agent

DATE 8/21/2000

CITY OF OAKLAND
Fire Department
Fire Prevention Bureau
Hazardous Materials Program
250 Frank H. Ogawa Plaza, Ste. 3341
Oakland, CA 94612-2032

UNDERGROUND TANK CLOSURE PLAN
(Complete according to instructions)

- 1) Name of Business Atlas Heating & Air Conditioning
Business Owner or Contact Person (PRINT) Robert or Elizabeth Tuck
- 2) Site Address 1451 32ND Street
City Oakland Zip 94608 Phone (510) 893-1343
- 3) Mailing Address 1451 32ND Street
City Oakland Zip 94608 Phone (510) 893-1343
- 4) Property Owner Robert & Elizabeth Tuck
Business Name (if applicable) Atlas Heating & Air Conditioning
Address 1451 32ND Street
City, State Oakland, CA Zip 94608
- 5) Generator name under which tank will be manifested
Robert & Elizabeth Tuck
- EPA ID Under which tank will be manifested CAC 002 325 433

6) Contractor Bernabe & Brinker, Inc.
Address 2240 Wood Street
City Oakland, CA 94608 Phone (510) 451-3482
License Type A HAZ IDS 510617

Effective January 1, 1992, Business and Professional Code Section 7058.7 require contractors to also hold Hazardous Waste certification issued by the State Contractor License Board

7) Consultant (if applicable) None
Address _____
City, State _____ Phone _____

8) Main Contact Person for Investigation (if applicable)
Name Robert Tuck Title OWNER
Company Atlas Heating & Air Conditioning
Phone (510) 893-1343

Number of underground tanks being closed with this plan Two (Confirmed with owner operator)

State Registered Hazardous Waste Transporters/Facilities (see instructions)

**
Underground storage tanks must be handled as hazardous waste **

a) Product/Residual Sludge/Rinsate Transporter
Name ECI EPA I.D. NO. CAD009466392
Hazardous Waste License No. _____ License Exp. Date _____
Address 255 Parr Blvd
City Richmond State CA Zip 94801

b) Product/Residual Sludge/Rinsate Disposal Site
Name ECI EPA ID No. CAD009466392
Address 255 Parr Blvd
City Richmond State CA Zip 94801

c) Tank and Piping Transporter

Name ECT EPA I.D. No. CAD 009 466392

c) Hauler License No. _____ License Exp. Date _____

Address _____
City _____ State _____ Zip _____

d) Tank and Piping Disposal Site

Name ECT EPA I.D. No. CAD 009 466392

Address _____
City _____ State _____ Zip _____

11) Sample Collector

Name Robert James Cox

Company Bernabe & Brinker Inc

Address 2240 Wood Street

City Oakland State CA Zip 94608

Phone 510 451 3482

12) Laboratory

Name CAL Coast

Address 472 Watt

City Emeryville State CA Zip 94608

State Certification No. 2421

13) Have tanks or pipes leaked in the past Yes No Unknown

If yes, describe _____

14) Describe methods to be used for rendering tank (s): inert:

Cold Water Rinse, Dry Ice at 30 Lbs per 1000
gallons of Capacity

Before tanks are pumped out and inserted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be permanently plugged.

The Bay Area Air Quality Management District, 415/771-6000 must also be contacted for tank removal permit. The use of a combustible gas indicator to verify tank inertness is required. It is the contractor's responsibility to bring a working combustible gas indicator on-site to verify that the tank is inert. Note: you may be required to recalibrate the combustible gas indicator on site, to show that it is working properly.

15) Tank History and Sampling Information *** (see instructions) ***

Tank		Material to be sampled (tank contents, soil, groundwater)	Location and Depth of Samples
Capacity	Use History include date last used (estimated)		
2000	Gasoline use to Dec. 1999	Soil and/or groundwater	2 feet under Tank at Natural Soil Interface Approx 8'-10'
2000	Diesel use to Dec. 1999	Soil and/or groundwater	
2000	Gasoline use to Dec 1999	Soil and/or groundwater	2 Ft. under tank at Natural Soil Interface Approx 8'-10'

One soil sample must be collected for every 20 linear feet of piping that is removed. A ground water sample must be collected if any ground water is present in the excavation.

EXCAVATED/STOCKPILED SOIL

Stockpiled Soil volume (estimated) <p align="center">20 yards</p>	Sampling Plan <p align="center">1 Composite</p>
---	---

Stockpiled soil must be placed on beamed plastic and must be completely covered by plastic sheeting

Will the excavated soil be returned to the excavation immediately after tank removal?

- yes
 No
 unknown

If yes, explain reasoning _____

If unknown at this point in time, please be aware that excavated soil may not be returned to the excavation without prior approval from Fire Services Agency, Office of Emergency Services. This means that the contractor, consultant, or responsible party must communicate with the Hazardous Materials Inspector **IN ADVANCE** of backfilling operations.

16. Chemical methods and associated detection limits to be used for analyzing samples:

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed.

See attached Table 2.

17. Submit Site Health and Safety Plan (see Instructions)

Contaminant Sought	EPA or Other Sample Preparation Method Number	EPA or Other Analysis Method Number	Method Detection Limit
Petroleum Hydrocarbons as Gas	GCFID (8030)	TPH AND BTEX by 8260	15
Benzene Toluene Xylene Ethylbenzene	8070 or 8240		
Lead MTBE	AA 8260		

18. Submit Workers Compensation Certificate copy

Name of Insurer State Fund # 1305773-00

19. Submit Plot Plan *****(Be Instructions)*****

20. Enclose Permit fee (See Instructions)

21. Report any leaks or contamination to this office within 5 days of discovery.

The written report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report (ULR) form.

22. Submit a closure report to this office within 60 days of the tank removal. The report must contain all information listed in item 22 of the instructions.

23. Submit State (Underground storage Tank Permit Application) Forms A and B (one B form for each UST to be removed) (mark box 8 for tank removed in the upper right hand corner)

I declare that to, the best of my knowledge and belief that the statements and information provided above are correct and true.

I understand that information, in addition to that proved above, may be needed in order to obtain approval from the Hazardous Materials Division and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and health Administration) requirements concerning; personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his age and that this responsibility is not shared nor assumed by the City of Oakland.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Inspector at least three working days in advance of site-work, to schedule the required inspections.

CONTRACTOR INFORMATION

Name of Business Bernabe & Bruner Inc

Name of Individual Robert J Cox

Signature [Signature] Date 9-5-2000

PROPERTY OWNER OR MOST RECENT TANK OPERATOR (Circle one)

Name of Business Atlas Heating & Air Conditioning
Name of Individual Robert J Cox, Agent
Signature [Signature] Date 9/5/2000

General Instructions

- Three (3) copies of this plan plus attachments and permit must be submitted to this Department.
- Any cutting into tanks requires Fire Services Agency approval.
- One complete copy of your approved plan must be at the construction site at all times; a copy of your approved plan must also be sent to the landowner.
- State of California Permit Application Forms A and B are to submit to this office One Form A per site, one Form B for each removed tank.

Line Item Specific Instructions

2. SITE ADDRESS
Address at which closure is taking place.
5. EPA I.D. NO. - under which the tanks will be manifested
EPA I.D. numbers may be obtained from the State Department of Toxic Substances Control, 916/324-1781
6. CONTRACTOR
Prime contractor for the project.
10. STATE REGISTERED HAZARDOUS WASTE TRANSPORTERS/FACILITIES
 - a) All residual liquids and sludges are to be removed from tanks before tanks are inerted.
 - c) Tanks must be hauled as hazardous waste.
 - d) This is the place where tanks will be taken for cleaning.
- 15) TANK HISTORY AND SAMPLING INFORMATION
Use History - This information is essential and must be accurate. Include tank installation date, products stored in the tank, and the date when the tank was last used.
Material to be sampled - e.g. water, oil, sludge, soil, etc.

Location and depth of samples - e.g. beneath the tank a maximum of two feet below the native soil/backfill interface, side wall at the trig } water mark, etc.
- 16) CHEMICAL METHODS AND ASSOCIATED DETECTION LIMITS
See attached Table 2.
- 17) SITE HEALTH AND SAFETY PLAN
A site specific Health and Safety plan must be submitted. We advocate the site health and safety plan include the following items, at a minimum:
 - a) The name and responsibilities of the site health and safety officer.
 - b) An outline of briefings to be held before work each day to appraise employees of site health and safety hazards;

City Of Oakland
FIRE PREVENTION BUREAU
250 Frank Ogawa Plaza, Ste. 3341
Oakland California 94612-2032
510-238-3851



*Permit To Excavate And Install, Repair,
Or Remove Inflammable Liquid Tanks*

Oakland, California November 28, 2000

Tank Permit Number: 81-00

Permission Is Hereby Granted To:

Remove gasoline Tank And Excavate Commencing: Feet Inside: property Line.

On The: W side of Louise Street, 1,000 feet S of 32nd Street

Site Address: 1451 32nd Street **Present Storage:** Gas/diesel

Owner: Robert & Elizabeth Tuck **Address:** 1451 32nd Street, Oakland, 94608 **Phone:** (510) 893-1341

Applicant: Bernabe & Brinker **Address:** 7240 Wood Street, Oakland, 94608 **Phone:** (510) 451-3482

Dimensions Of Street (sidewalk) Surface To Be Disturbed : X **No. Of Tanks** 2 **Capacity** 2,000 **Gallons, Each**

Remarks

This Permit Is Granted In Accordance With Existing City Ordinances. Owner Hereby Agrees To Remove Tanks On Discontinuance Of Use Or When Notified By The City Authorities When Installing, Removing Or Repairing Tanks, No Open Flame To Be On Or Near Premises.

CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Type Of Inspection: _____

Inspected And Passed On: _____

Approved: [Signature]
Fire Marshal

UST/AST Installations/modifications: _____

Pressure Test: Inspected By: _____ **Date:** _____

Primary Piping Test: Inspected By: _____ **Date:** _____

Inspection Fee Paid: \$ 230.00

Secondary Containment & Sump Testing: _____

Received By: 08/04/99 rec# 001213410

Inspected By: _____ **Date:** _____

Final: Inspected By: _____ **Date:** _____

Before Covering Tanks, Above Certification Must Be Signed When Ready For Inspection Notify Fire Prevention Bureau 238-3851

THIS PERMIT MUST BE LEFT ON THE WORK SITE AS AUTHORITY THEREFORE

**Oakland Fire Department
Site Inspection Documentation**

OAKLAND FIRE DEPARTMENT, OES UNDERGROUND STORAGE TANK CLOSURE/REMOVAL FIELD INSPECTION REPORT

Site Address: <u>1451 32nd St.</u>	Name of Facility: <u>ATLAS H + A</u>
Inspector: <u>H. Gomez</u>	Contact on site: <u>Fannie</u>
Date and Time of Arrival: <u>12/1/00 2:30 p.m.</u>	Contractor/Consultant: <u>Bernabe + Brinker</u>

General Requirements	Yes	No	N/A
Approved closure plan on site.	✓		
Changes to approved plan noted.			✓
Residuals properly stored/transported.			
Receipt for adequate dry ice noted.	✓		

General Requirements	Yes	No	N/A
Site Safety Plan properly signed.	✓		
40B:C fire extinguisher on site.	✓		
"No Smoking" signs posted.	✓		
Gas detector challenged by inspector.	✓		

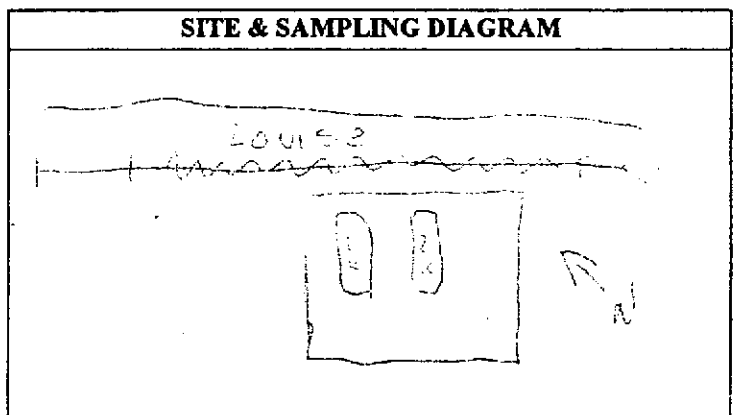
Tank Observations	T #1	T #2	T #3	T #4
Tank Capacity (gallons)	2K	2K		
Material last stored	<u>Gas</u>	<u>Gas</u>		
Dry ice used (pounds)	100	100		
Combustible gas concentration as %LEL. (Note time & sampling point)				
(1)	7.0	2.0		
(2)				
(3)				
Oxygen concentration as % volume. (Note time & sampling point)				
(1)	1.8	1.8		
(2)				
(3)				
Tank Material	<u>Steel</u>	<u>Steel</u>		
Wrapping/Coating, if any	<u>N/A</u>	<u>N/A</u>		
Obvious holes?				

Tank Observations	T #1	T #2	T #3	T #4
Obvious corrosion?	N	NO		
Obvious odors from tank?	Y	Y		
Seams intact?	Y	Y		
Tank bed backfill material	Y	Y		
Obvious discoloration?	Y	Y		
Obvious odors ex tank bed?	Y	Y		
Water in excavation?	Y	Y		
Sheen/product on water?	Y	Y		
Tank tagged by transporter?	Y	Y		
Tank wrapped for transport?	N	N		
Tank plugged w/ vent cap?	Y	Y		
Date/time tank hauled off?	<u>12/1</u>	<u>1000</u>		
No. of soil samples taken?	2	2		
Depth of soil samples (ft. bgs)				

Piping Removal	Yes	No	N/A
All piping removed hauled off w/ tanks?	✓		
Obvious holes on pipes?			
Obvious odors from pipes?	✓		
Obvious soil discoloration in piping trench?	✓		
Obvious odors from piping trench?	✓		
Water in piping trench?			✓
Number & depth of soil samples from piping trench?			
Number & depth of water samples from piping trench?			

General Observations	Yes	No	N/A
Leak from any tank suspected?		✓	
"Leak Report" form given to the operator?		✓	
Obviously contaminated soil excavated?	✓		
Soil stockpile sampled?	✓		
Stockpile lined AND covered?			
Water in excavation sampled?	✓		
Number/depth of water samples taken?			
All samples properly preserved for transport?	✓		

Additional Observations	Yes	No	N/A
Soil/water sampling protocols acceptable?	✓		
Sampling "chain of custody" noted?	✓		
Tank pit filled in or covered?			
Tank pit fenced or barricaded?			
Transporter a registered HW hauler?			
Uniform HW Manifest completed?			
Contractor/Consultant reminded of complete UST Removal Report due within 30 days?			
Date/Time removal/closure operations completed?			
OT hours or additional charges due from contractor?			



Notes/Comments: Need to re-scheduling for sampling - groundwater
on 12/1/00

**OAKLAND FIRE DEPARTMENT/OFFICE OF EMERGENCY SERVICES
HAZARDOUS MATERIALS UNIT**

1605 Martin Luther King Jr. Way, Oakland, CA 94612 • (510) 238-3938

HAZARDOUS MATERIALS INSPECTION REPORT

Site Number	Facility Name	Facility Address	Zip Code
	ATLAS Heating & Air Conditioning	1451 32 nd ST.	08

Inspection Report

PERMISSION TO INSPECT GRANTED

Sampling for 2 removed UST

4 Soil samples from each side wall
2 ft above H₂O line app. 7'

1 H₂O sample from the center of the
pit - 9 ft.

2 Composite soil samples from
stockpile

Facility Contact/Print Name: Robert J. Cox	Inspected By: HEBA <input type="checkbox"/> Insp. Griffin 238-7759 <input type="checkbox"/> Insp. Matthews 238-2396 <input type="checkbox"/> Insp. Craford 238-7758 <input checked="" type="checkbox"/> Insp. Gomez 238-7253
Facility Contact/Signature: Robert James Cox	
Date: 2/2/01	

**UFST Transport Manifest and
Certificate of Destruction**

0241434

UNIFORM HAZARDOUS
WASTE MANIFEST

1. Generator's US EPA ID No. **CA000232543330280**
Manifest Document No. **0241434**

2. Page 1
of 1

Information in the shaded areas
is not required by Federal law.

3. Generator's Name and Mailing Address
**Atlas Heating AND AIR CONDITIONING
1451 32ND Street Oakland, CA 94608**

A. State Manifest Document Number
99630280

4. Generator's Phone **510-893-1343**

B. State Generator's ID

5. Transporter 1 Company Name
Ecology Control Industries

6. US EPA ID Number
CA0982030173

C. State Transporter's ID (Reserved.)

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone
510-235-1393

E. State Transporter's ID (Reserved.)

9. Designated Facility Name and Site Address
**Ecology Control Industries
255 Parr Blvd
Richmond CA 94801**

10. US EPA ID Number
CA000232543330280

F. Transporter's Phone

G. State Facility's ID
CA000094663921

H. Facility's Phone
510-235-1393

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

12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	1. Waste Number	
			State	EPA/Other
a.				
b.				
c.				
d.				

Waste Empty Storage Tank
Non-RCRA Hazardous Waste Solid

092 TP 04000 P

J. Additional Descriptions for Materials Listed Above
QTY **2** Empty Storage Tank # **28767 28768**
Tanks have been inerted with 15 lbs
Dry Ice per 1000 Gallon capacity

K. Handling Codes for Wastes Listed Above
a. **01** b. c. d.

15. Special Handling Instructions and Additional Information
**Wear proper protective equipment while handling. Weights or volumes are approximate.
24 Hour emergency telephone number: (510) 837-3167
24 hour Emergency Contact: Jim Cox DOT ERG# 11a) 171**

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 **Robert J. Cox As Agent For Atlas Heating** Signature *[Signature]* Month **12** Day **01** Year **00**

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name **Bill Buchanan** Signature *[Signature]* Month **12** Day **01** Year **00**

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 **DAVID SATO** Signature *[Signature]* Month **12** Day **01** Year **00**

DO NOT WRITE BELOW THIS LINE.

Yellow: TSDf SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS.
[Generators who submit hazardous waste for transport out-of-state, produce completed copy of this copy and send to DTSC within 30 days.]

PHONE
235-1393

CERTIFICATE CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 382

CUSTOMER
JOB NO. 5241434
BERNADE & BRINKI

FOR: ECOLOGY CONTROL IND TANK NO. 28767

LOCATION: RICHMOND, CA DATE: 12/15/2000 TIME: 9:41:26

TEST METHOD VISUAL GASTECH/1314 SMPN LAST PRODUCT UG

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 2,000 Gal. Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9% LOWER EXPLOSIVE LIMIT LESS THAN 0.1% ECOLOGY CONTROL INDUSTRIES
HERBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN CUT OPEN, PROCESSED,
AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS WASTE FACILITY.
ECOLOGY CONTROL INDUSTRIES HAS THE APROPRIATE PERMITS FOR, AND HAS ACCEPTED
THE TANK SHIPPED TO US FOR PROCESSING.

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 that 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.

David M. Cleves
REPRESENTATIVE

TITLE

DAVE SATO
INSPECTOR

**Residual UFST Product and
Pit Water Disposal Documentation**

IN CASE OF 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. CA1C00023125433		Manifest Document No. 85601		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.				
3. Generator's Name and Mailing Address ATLAS HEATING & AIR 1451 32ND Street OAKLAND, CA 94608				A. State Manifest Document Number 20485601		B. State Generator's ID						
4. Generator's Phone (510) 953-4328		5. Transporter 1 Company Name UNIVERSAL ENVIRONMENTAL		6. US EPA ID Number CA1A09836522712		C. State Transporter's ID (Reserved.)						
7. Transporter 2 Company Name				8. US EPA ID Number		D. Transporter's Phone 707-747-6699		E. State Transporter's ID (Reserved.)				
9. Designated Facility Name and Site Address REGIC ENVIRONMENTAL 2081 BAY RD PALO ALTO CA 94303				10. US EPA ID Number CA1A09094526517		F. Transporter's Phone						
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) a. WASTE FLAMMABLE LIQUID, N.O.S. 3 UN1993, PG. II				12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste Number		
				No.		Type						State 214
				991		T, T00, 2, 2, 5 G						EPA/Other 6018, 0001, 00:
												State
												EPA/Other
J. Additional Descriptions for Materials Listed Above Profile # 353074				K. Handling Codes for Wastes Listed Above								
				a.		b.						
				c.		d.						
15. Special Handling Instructions and Additional Information WEAK DROPPA PPC IN CASE OF EMERGENCY CALL 800 747 6609												
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 Mike Puzanik				Signature <i>[Signature]</i>				Month Day Year 1 20 01				
17. Transporter 1 Acknowledgement of Receipt of Materials												
Printed/Typed Name JAMES J JONES				Signature <i>[Signature]</i>				Month Day Year 1 20 01				
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 P.D. # 10007							Month Day Year					

DO NOT WRITE BELOW THIS LINE.

COD



Seaport Environmental

NON-HAZARDOUS WATER TRANSPORT FORM

--	--	--	--

GENERATOR INFORMATION

Atlas Heating & Air Conditioning
1451 32nd St
Oakland Ca

CUSTOMER INFORMATION

Bernabo & Banker
PO# C.O.D.

DESCRIPTION OF WATER: Excavation dewatering
NON-HAZARDOUS WASTE WATER. MONITORING WELL PURGE WATER AND/OR AUGER RINSATE. TANK RINSATE OR ABOVE
GROUND WATER. THIS WATER MAY CONTAIN DISSOLVED HYDROCARBONS. I CERTIFY THAT THE ABOVE NAMED MATERIAL
IS A LIQUID EXEMPT FROM RCRA PER 40 CFR 261.4 (B)(10) AND DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE AS
DESCRIBED IN 22 CFR ARTICLE 11 OR ANY OTHER APPLICABLE STATE LAW. HAS BEEN PROPERLY DESCRIBED,
CLASSIFIED AND PACKAGED AND IS IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO APPLICABLE
REGULATIONS

Robert J Cox
Generator/Authorized Agent

[Signature] 1-16-01
Sign date

SITE INFORMATION

1451 32nd St
Oakland

GROSS	
TARE	
NET	
TOTAL GALLONS	4,800

Calculations in accordance with EPA 40 CFR

TRANSPORTER INFORMATION

Truck ID: 17032
Driver: William Crider with in 01-16-01
Print full name & sign date

TIME OUT	11:15	
TIME IN	9:00	
TIME SPENT	2.25	

DISPOSAL FACILITY INFORMATION EPA ID: CAL 00032058

Seaport Environmental
675 Seaport Boulevard
Newwood City, Ca 94063
Phone: (650) 364 1024

Approval Number

302 - 389

SOLIDS %WT off

NO 7

Solids Surcharge
@USG

Received by:
Print full name & sign

Mario Lopez 1-16-01
date



REPUBLIC SERVICES

WASTE CHARACTERIZATION FORM
PETROLEUM CONTAMINATED SOILS

IMPORTANT: This form is to be used to describe contaminated soils resulting from the release of petroleum products only and is not to be used for hazardous waste or FCE4 regulations by a Federal or applicable state or local authority.

INSTRUCTIONS: Information for completion of this form must be obtained from an authorized representative* of the generator. Please be thorough in your answers. The entire form must be completed, answers must be legibly printed in ink or typewritten, and the completed form must be signed and dated. Please attach any additional relevant information such as analytical data that will help to describe the waste and facilitate its review.

* AN AUTHORIZED REPRESENTATIVE IS AN INDIVIDUAL WHO HAS LEGAL RESPONSIBILITY FOR THE WASTE.

GENERATOR INFORMATION

a) Generator's Name: Atlas Heating

Generating Facility Address: 1451-32nd St
City: Oakland State: CA Zip: 94607

Generator's Representative: ROBERT D. TUCK

Title: OWNER

Telephone: (510) 893-1343
Fax: (510) 893-1419

Emergency/Information Contact: Jim Cox
Title: Project Mgr. Bernabe & Brinker Inc
Telephone: (510) 451-3482

billing INFORMATION

a) Customer's Name: Bernabe & Brinker Inc.
Customer's Billing Address: 2240 Wood St
City: Oakland State: CA Zip: 94607

Representative: Jim Cox / Ernie Bernabe
Telephone: (510) 451-3482
Fax: (510) 836-2635

a) This waste was generated as a result of: 1) LST Activity 2) 1987 Activity 3) L1 Spill 4) Other Waste Generated from Removal of Underground Storage Tank

b) Type of facility generating the contaminated soil: Heating & Air Conditioning Installation & Repair Company

c) Anticipated quantity: 80 cubic yards tons drums other

To be transported in: bulk drums (type/size) Other

d) Is this a "Hazardous Waste" as defined by 40 CFR 261.21-23? Yes No

e) Is this a "Solid Waste" as defined by 40 CFR 261.24-25? Yes No

f) Recommendations for waste management: None

DESCRIPTION OF WASTE

Does the waste contain any of the following: (Check all that apply)

- Free Liquids
- Free Cyanide
- Free Sulfide
- Organic Solvents
- OSHA Substances
- Etiological Agents
- Radioactive Materials
- PCBs not regulated by TSCA 40 CFR 761
- None of the Above

Description of the waste:

- Soil contaminated with leaded gasoline
 - Soil contaminated with unleaded gasoline
 - Soil contaminated with diesel fuel
 - Soil contaminated with heating oil
 - Soil contaminated with vehicle drain oil (used oil)
 - Soil contaminated with other petroleum products
- Specify: _____

Type and concentration: _____

4. ANALYTICAL SUMMARY (Attach all certified lab results and chain of custody documentation)

ORGANICS	AVG	HIGH	UNITS (PPM/PPB)	BTEX	AVG	HIGH	UNITS (PPM/PPB)
TOTAL PETROLEUM HYDROCARBONS							
Gasoline	6.5	250	PPM	Benzene	N/D	N/D	
Diesel				Toluene	0.017	0.12	PPB
Motor Oil or TOG				Ethylbenzene	0.012	0.37	PPB
Other: MTBE	N/D	N/D		Xylenes	0.021	9.7	PPB
VOLATILE ORGANICS List Detected Constituents:				SEMI-VOLATILE List Detected Constituents:			
Other Analysis:				Other Analysis:			

INORGANICS	AVG	HIGH	UNITS (PPM)	AVG	HIGH	UNITS (PPM)
Antimony (Sb)						
Arsenic (As)						
Barium (Ba)						
Beryllium (Be)						
Cadmium (Cd)						
Chromium (Cr)						
Hexavalent Cr (Cr VI)						
Cobalt (Co)						
Copper (Cu)						
Lead (Pb)	STLC	0.28	0.28			
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Selenium (Se)						
Silver (Ag)						
Thallium (Tl)						
Vanadium (V)						
Zinc (Zn)						

GENERATOR'S CERTIFICATION

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of composition or properties exist, that all known or suspected hazards have been disclosed, analytical results submitted are accurate and representative of the waste (per SW 846), and that the waste is not a regulated hazardous waste by the USEPA, by an applicable State or local authority, and does not contain PCBs regulated by TSCA (i.e., 40 CFR 761).

GENERATOR'S AUTHORIZED SIGNATORY:
 DATE: 3-21-01
 PRINT NAME: Robert J. Cox SIGNATURE: [Signature] TITLE: Project MGR
 TELEPHONE: (510) 451-3482 FAX: 510 836-2655



Republic Services
Vasco Road Landfill

4/30/01

4001 N. Vasco Road
 Livermore, CA 94550
 925-447-0491

BERNABE & BRINKER
 2240 WOOD ST
 OAKLAND CA 94607

2240 WOOD ST
 OAKLAND CA 94607

50- 12392 7

1447.92

VASCO ROAD LANDFILL

Date	Description	TKT#	Amount	Total
05/01	SOILS	132088	20.20	
05/01	SOILS	132065	21.78	363.60
05/01	SOILS	131944	17.74	392.04
05/01	SOILS	131950	20.72	319.32
				372.96

*paid 4862
6-20-01*

NOTE PLEASE REMIT PAYMENTS TO:
 4001 N VASCO RD, LIVERMORE, CA 94550

1447.92 .00 .00 .00

50-12392 7
 2240 WOOD ST

1447.92

APPENDIX C

**CERTIFIED ANALYTICAL
LABORATORY RESULTS AND
CHAIN-OF-CUSTODY RECORD**

Proj. Mgr.: Jim Cox
 Company: BERNARD & BRINKER
 Address: 2240 WOOD ST.
OAKLAND, CA 94607-1713

Samples (signature) _____ (Phone No.) _____
 (510) 451-3482
 (Fax No.) _____
 (510) 832-2635

Sample ID	Type	Date	Time	Preserve	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/ BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524 Z)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5020, 84F, E4F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	MTBE	LUFT	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	NUMBER OF CONTAINERS
West 1-4	composit	2/2/01																					
West 1-4	composit	2/2/01			X	X	X	X	X	X	X	X	X	X	X	X	X				X		
East 1-4	composit				X	X	X	X	X	X	X	X	X	X	X	X	X				X		
Soil S1					X	X	X	X	X	X	X	X	X	X	X	X	X				X		
Soil S2					X	X	X	X	X	X	X	X	X	X	X	X	X				X		
Soil S3					X	X	X	X	X	X	X	X	X	X	X	X	X				X		
Soil S4			2/2/01		X	X	X	X	X	X	X	X	X	X	X	X	X				X		
W1			2/2/01		X	X	X	X	X	X	X	X	X	X	X	X	X				X		

Project Information		Sample Receipt			
Project Name <u>Atlas Heating</u>	Total No. of Containers 6	Head Space			
Project No.	Rec'd Good Condition/Cold				
PO #	Conforms To Record				
TAT	Standard 5-Day	24	48	72	Other

Relinquished By (Signature)	1	Relinquished By (Signature)	2
(Printed Name)		(Printed Name)	
(Date)	(Time)	(Date)	(Time)
Received By (Signature)	1	Received By (Signature)	2
(Printed Name)		(Printed Name)	
(Date)	(Time)	(Date)	(Time)

Special Instructions / Comments
FAX Results ALSO to 238-7761



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mccampbell.com E-mail: main@mccampbell.com

Calcoast Analytical 4072 Watts Street Emeryville, CA 94608	Client Project ID: Atlas Heating	Date Sampled: 02/02/01
	Client Contact: Kevin Yan	Date Received: 02/02/01
	Client P.O:	Date Extracted: 02/02-02/08/01
		Date Analyzed: 02/02-02/08/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
 EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GC/FID(5030)

Lab ID	Client ID	Matrix	TPH(g) ¹	MTBE	Benzene	Toluene	Ethyl- benzene	Xylenes	% Recovery Surrogate
59355	West 1-4	S	6.5,g _d	ND	ND	0.030	ND	0.021	104
59356	East 1-4	S	ND	ND	ND	ND	ND	0.026	104
59357	Soil S1	S	ND	ND	ND	ND	ND	ND	108
59358	Soil S2	S	ND	ND	ND	ND	ND	ND	98
59359	Soil S3	S	250.g	ND<0.10	ND	0.12	0.87	9.7	98
59360	Soil S4	S	35,b	ND	ND	0.017	0.012	0.53	111
59361	W1	W	400,m	11,000	6.3	1.3	ND	10	102
Reporting limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/l., wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCE, P and SPLP extracts in ug/l.

* cluttered chromatogram; sample peak concludes with surrogate peak

**The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Calcoast Analytical 4072 Watts Street Emeryville, CA 94608	Client Project ID: Atlas Heating	Date Sampled: 02/02/01
	Client Contact: Kevin Yan	Date Received: 02/02/01
	Client P.O:	Date Extracted: 02/02/01
		Date Analyzed: 02/02-02/05/01

Lead*

EPA analytical methods 6010/200.7, 239.2'

Lab ID	Client ID	Matrix	Extraction *	Lead*	% Recovery Surrogate
59355	West 1-4	S	TTLIC	6.6	102
59356	East 1-4	S	TTLIC	14	100
59357	Soil S1	S	TTLIC	24	106
59358	Soil S2	S	TTLIC	6.9	104
59359	Soil S3	S	TTLIC	12	103
59360	Soil S4	S	TTLIC	10	101
59361	W1	W	TTLIC	0.010	N/A
Reporting limit unless otherwise stated; ND means not detected above the reporting limit		S	TTLIC	5.0 mg/kg	
		W	TTLIC	0.005 mg/l	
		--	STLIC, TCLP	0.2 mg/L	

* soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLIC / SPLP / TCLP extracts in mg/l.
 Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLIC & TCLP extracts and method 239.2 (AA Furnace) for water samples.
 @ DISTILC: extractions are performed using STLIC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid. DISTILC results are not applicable to STLIC regulatory limits.
 * EPA extraction methods 1311(TCLP), 3010/3020(water, TTLIC), 3040(organic matrices, TTLIC), 3050(solids, TTLIC); STLIC - CA Title 22
 * surrogate diluted out of range; N/A means surrogate not applicable to this analysis
 * reporting limit raised due matrix interference
 i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Calcoast Analytical 4072 Watts Street Emeryville, CA 94608	Client Project ID: Atlas Heating	Date Sampled: 02/02/01
	Client Contact: Kevin Yan	Date Received: 02/02/01
	Client P.O:	Date Extracted: 02/22-02/24/01
		Date Analyzed: 02/26/01

Lead*					
EPA analytical methods 6010/200.7, 239.2*					
Lab ID	Client ID	Matrix	Extraction °	Lead*	% Recovery Surrogate
59357-60	S1-S4	S	STLC	0.28	N/A
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	S	TTLC		3.0 mg/kg	
	W	TTLC		0.005 mg/L	
	--	STLC,TCLP		0.2 mg/L	

* soil and sludge samples are reported in mg/kg, wipe samples in ug/wipe, and water samples and all STLC / SPLP / TCLP extracts in mg/L
 °Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples
 ° DISTLC extractions are performed using STLC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid. DISTLC results are not applicable to STLC regulatory limits.
 ° EPA extraction methods 1311(TCLP), 3010/3020(water.TTLC), 3040(organic matrices.TTLC), 3050(solids.TTLC); STLC - CA Title 22
 ° surrogate diluted out of range; N/A means surrogate not applicable to this analysis
 ° reporting limit raised due matrix interference
 i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

CAM 17

Date: 02/26/01-02/27/01 Matrix: Soil/Sand

Extraction: TTLC

Compound	Concentration: mg/kg			%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	

SampleID: 22601

Instrument: ICP-1

Beryllium	0.000	5.1	5.0	5.00	103	101	2.3
Selenium	0.000	11.0	11.0	10.00	110	110	0.0
Molybdenum	0.000	5.2	4.9	5.00	104	99	4.6
Silver	0.000	0.4	0.4	0.50	84	83	1.8
Thallium	0.000	8.2	9.6	10.00	82	96	15.7
Barium	0.000	4.7	4.7	5.00	93	94	0.7
Nickel	0.000	5.2	5.0	5.00	103	99	3.8
Arsenic	0.000	9.2	9.3	10.00	92	93	1.1
Vanadium	0.000	4.8	4.5	5.00	96	90	5.8
Surrogate1	0.000	86.0	85.8	100.00	86	86	0.2
Zinc	0.000	5.2	5.1	5.00	104	101	2.2
Copper	0.000	4.6	4.7	5.00	93	94	1.6
Antimony	0.000	10.0	9.2	10.00	100	92	8.3
Lead	0.000	9.1	9.1	10.00	91	91	0.0
Cadmium	0.000	5.9	5.9	5.00	119	119	0.0
Cobalt	0.000	5.2	4.9	5.00	103	98	4.5
Mercury	0.000	1.2	1.2	1.00	125	117	6.5
Chromium	0.000	5.2	5.1	5.00	104	102	1.6

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2.100$$



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT LUFT

Date: 02/05/01-02/06/01 Matrix: Water

Extraction: TLC

Compound	Concentration: mg/L			%Recovery		RPD
	Sample	MS	MSD	MS	MSD	

SampleID: Z0501

Instrument: ICP-1

Surrogate 1	0.000	93.0	90.7	100.00	93	91	2.5
Copper	0.000	4.2	4.5	5.00	83	89	6.6
Zinc	0.000	5.0	5.0	5.00	100	100	0.3
Lead	0.000	4.5	4.6	5.00	89	91	2.3
Nickel	0.000	4.8	4.9	5.00	96	98	2.5
Chromium	0.000	5.0	4.8	5.00	99	95	4.4
Cadmium	0.000	4.9	5.2	5.00	97	103	6.0

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

CAM 17

Date: 02/02/01-02/03/01 Matrix: Soil

Extraction: TTLC

Compound	Concentration: mg/kg			%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	

SampleID: 20201

Instrument: ICP-1

Beryllium	0.000	5.7	5.3	5.00	114	106	7.3
Selenium	0.000	9.0	9.4	10.00	90	94	4.3
Molybdenum	0.000	5.2	5.0	5.00	104	100	3.9
Silver	0.000	0.6	0.5	0.50	120	100	18.2
Thallium	0.000	12.0	13.0	10.00	120	130	8.0
Barium	0.000	5.2	4.9	5.00	104	98	5.9
Nickel	0.000	5.3	5.2	5.00	106	104	1.9
Arsenic	0.000	8.8	10.0	10.00	88	100	12.8
Vanadium	0.000	5.2	4.9	5.00	104	98	5.9
Surrogate1	0.000	108.9	102.8	100.00	109	103	5.8
Zinc	0.000	5.3	5.2	5.00	106	104	1.9
Copper	0.000	5.3	4.9	5.00	106	98	7.8
Antimony	0.000	11.0	12.0	10.00	110	120	8.7
Lead	0.000	9.5	11.0	10.00	95	110	14.6
Cadmium	0.000	5.5	5.4	5.00	110	108	1.3
Cobalt	0.000	5.4	4.9	5.00	108	98	9.7
Mercury	0.000	0.8	0.9	1.00	80	80	0.0
Chromium	0.000	5.5	4.9	5.00	112	98	13.3

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

Date: 02/02/01-02/03/01 Matrix: Water

Extraction: TTLC

Compound	Concentration: ug/L			%Recovery		RPD	
	Sample	MS	MSD	MS	MSD		
SampleID: 20201		Instrument: GC-3					
Surrogate1	0.000	113.0	101.0	100.00	113	101	11.2
Xylenes	0.000	32.0	29.6	30.00	107	99	7.8
Ethyl Benzene	0.000	10.9	9.8	10.00	109	98	10.6
Toluene	0.000	11.5	9.9	10.00	115	99	15.0
Benzene	0.000	11.3	9.6	10.00	113	96	16.3
MTBE	0.000	10.8	9.9	10.00	108	99	8.7
GAS	0.000	82.8	84.7	100.00	83	85	2.3
SampleID: 12301		Instrument: GC-11 A					
Surrogate1	0.000	117.0	108.0	100.00	117	108	8.0
TPH (diesel)	0.000	8625.0	8125.0	7500.00	115	108	6.0

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

Date: 02/02/01-02/03/01 Matrix: Soil

Extraction: TTLC

Compound	Concentration: mg/kg			%Recovery		RPD	
	Sample	MS	MSD	Amount Spiked	MS		MSD
SampleID: 20201		Instrument: GC-3					
Surrogate1	0.000	101.000	105.000	100.00	101	105	3.9
Xylenes	0.000	0.272	0.283	0.30	91	94	4.0
Ethyl Benzene	0.000	0.091	0.096	0.10	91	96	5.3
Toluene	0.000	0.092	0.098	0.10	92	98	6.3
Benzene	0.000	0.094	0.098	0.10	94	98	4.2
MTBE	0.000	0.091	0.105	0.10	91	105	14.3
GAS	0.000	0.813	0.668	1.00	81	67	19.7

SampleID: 12301		Instrument: GC-11 A					
Surrogate1	0.000	103.000	105.000	100.00	103	105	1.9
TPH (diesel)	0.000	307.000	308.000	300.00	102	103	0.3

$$\% \text{ Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$