CO#201

Rec'd by Jim Gribi 6/26/01

REPORT OF SOIL AND GROUNDWATER INVESTIGATION AND RISK-BASED CORRECTIVE ACTION ASSESSMENT

Liquid Sugars, Inc. Site
1266 66th Street
Emeryville, California

GA Project No. 149-02-01

Prepared for:

Liquid Sugars, Inc.
P O Box 96
Oakland, California, 94604

Prepared by:

Gribi Associates
1350 Hayes Street, Suite C-14
Benicia, CA 94510
(707)748-7743

June 15, 1999

June 15, 1999

San Francisco Bay Regional
Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Attention: Derek Lee

Subject: Report of Soil and Groundwater Investigation And
Risk-Based Corrective Action Assessment
Liquid Sugars, Inc., 1266 66th Street
Emeryville, California
GA Project No. 149-02-01

Ladies and Gentlemen:

Gribi Associates is pleased to submit this report on behalf of Liquid Sugars, Inc. documenting a recently-completed soil and groundwater investigation and a Risk-Based Corrective Action (RBCA) assessment for the Liquid Sugars, Inc. property located at 1266 66th Street in Emeryville, California. The soil and groundwater investigation included the drilling and sampling of 13 soil borings at the site using direct-push coring equipment. The RBCA assessment involved modeling site-specific environmental and human health exposure risks posed by residual contaminants identified at the site. The goals of these activities has been to: (1) Attempt to determine whether or not identified halogenated volatile organic compounds (HVOCs) originated from onsite or offsite sources; and (2) Determine whether or not leaving these contaminants on-site poses a significant health or environmental risk for potential future onsite and offsite receptors.

Both field and laboratory analytical results seem to indicate small releases from both onsite and offsite sources which, due to low-permeability soils beneath the site, have resulted in small, concentrated plumes that have not migrated significant distances. Three apparently isolated release areas have been identified on the project site: (1) An area along the east property line adjacent to the Union Pacific Railroad tracks; (2) An area beneath the "tile room" portion of the project site building; and (3) An area on the west side of the "warm room" portion of the project site building.

Results from borings IB-1 through IB-5, IB-10, and Geomatrix boring B-4 indicate near-surface releases, possibly from past railroad or "midnight dumping" activities along the Union Pacific Railroad tracks and adjacent railspurs. Whereas the halogenated volatile organic compounds encountered in subsurface soils and groundwater would normally be expected to either volatilize or migrate downward through both soil and groundwater, the low-permeability soils beneath the project site appear to have essentially encapsulated these HVOCs near the release source. Further, the concentrations of breakdown products TCE, t-1,2-DCE, c-1,2-DCE, and VC relative to the probable PCE parent product clearly show that natural attenuation of these HVOCs has occurred over time.

While the exact cause of the release (or releases) in this area may never be identified, it seems most likely, based on land use alone, that the release occurred along the railroad tracks and adjacent railspurs, and did not result from past project site activities. Whereas no historic land use on the project site has been identified which would likely have resulted in this release, the myriad of railcar activities which have occurred along the east property line since the 1930s, as well as the ease of vehicular access from 66th Street for unauthorized chemical dumping, would suggest that these releases are related to railroad or unauthorized chemical dumping along the railroad tracks, and not project site activities.

Results from borings IB-11, IB-12, IB-13, and Geomatrix boring SB-2 suggest a near-surface release of HVOCs in the vicinity of IB-13 which has migrated vertically to groundwater and then in a westerly direction towards IB-11, IB-12, and SB-2. Whereas shallow soils are impacted in IB-13, no significant impacts were encountered in shallow soil samples from IB-11 or IB-12. Once again, the concentrations of breakdown products TCE, t-1,2-DCE, c-1,2-DCE, and VC relative to the probable PCE parent product show that natural attenuation of these HVOCs has occurred over time. While the exact cause of this release is not readily apparent, two possible sources include: (1) Surface spills on the east side of the project site building; and (2) Possible breaches in floor drain piping adjacent to boring IB-13.

Results from borings IB-6 through IB-11, and Geomatrix boring SB-3 show 1,2-DCA impacts to groundwater in the northwest corner of the project site building, but no 1,2-DCA impacts to subsurface soils. The large 1,2-DCA groundwater concentration gradient between borings IB-8 and IB-9, from 2.2 ppm in IB-8 to 0.032 ppm in IB-9 within a lateral distance of less than ten feet, may have resulted from: (1) An unidentified easterly source between IB-8 and IB-6; or (2) Differences in soil permeability, which could have resulted in a localized concentration of 1,-2 DCA in relatively tight soils in this area. This second scenario seems to fit the data better, given: (1) No detectable 1,2-DCA in shallow soils in any of the borings; (2) The slower groundwater recharge in borings IB-8 and IB-9 relative to surrounding borings, including IB-6 and IB-7; and (3) The relatively high concentration of 1,2-DCA in the grab groundwater sample from IB-7, located at the north project site property boundary northeast from borings IB-8, IB-9, and Geomatrix boring SB-3. Further, given the very slow recharge in borings IB-8 and IB-9, it seems likely that the 1,2-DCA identified in these borings is not migrating appreciably.

Results of this and previous investigations indicate that although solvent releases have impacted the project site environment, low-permeability soils beneath the project site have limited these impacts. Given these limited impacts, it appears unlikely that residual HVOCs identified at the site pose a significant risk to environmental or human health receptors. In order to test this conclusion, Gribi Associates conducted a Risk-Based Corrective Action (RBCA) assessment to determine whether or not residual HVOCs encountered at the project site pose a risk to potential nearby environmental and human health receptors.

Based on calculated risk estimates, it appears that there is no significant risk of exposure from any identified HVOC constituents present at the project site. The risk values associated with the outdoor air exposure and soil exposure pathways are below target risk levels. The total pathway cumulative carcinogenic risk values associated with indoor vapor exposure for the outside and inside project site areas are 4.9×10^{-5} and 2.0×10^{-5}, respectively. These cumulative risk values are below the cumulative risk target level of 1.0×10^{-4}. The only calculated risk values which exceed target risk levels are the individual carcinogenic risk values associated with possible indoor air exposure to vinyl chloride. These individual risk values for indoor vinyl chloride vapor exposure in the outside and inside project site areas are 3.8×10^{-5} and 1.8×10^{-5}, respectively. We believe that since these risk values are only slightly above the target risk of 1×10^{-5}, they do not represent a significant risk. It is also worth noting that because there is no building in the project site yard area, there is currently no risk of indoor vapor exposure in the yard area (the indoor air exposure pathway was modeled for the yard area only in the event that a building is constructed on this portion of the site in the future).

Based on the results of this and previous investigations at the site, we believe that regulatory case closure is warranted. The basis for this belief is as follows:

- The HVOC releases identified on the project site appear to represent small releases which, due to low-permeability soils beneath the site, have resulted in small, concentrated plumes that bound up in the soils and have not migrated significant distances.

- The sources of historic HVOC releases, whether onsite or offsite, are not currently present at the site. While the exact sources of historic HVOC releases are not known, it seems clear, based on current site activities and the high degree of natural attenuation of probable parent products, that these releases occurred in the distant past, prior to LSI ownership of the property.

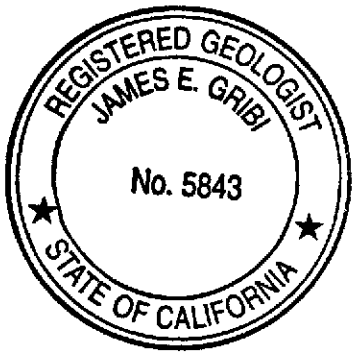
- The residual HVOCs present beneath the site pose no significant risk to current and future environmental and human health receptors at the site and in the site vicinity.

- The proposal to allow natural attenuation of the HVOCs is protective of groundwater resources in the site vicinity. Given the low groundwater recharge beneath the site and the lack of beneficial groundwater uses in the site area, allowing residual HVOCs to natural attenuate over time will not impact groundwater resources in the area.

- Given the probable age of these releases and their lack of migration over previous decades, we believe that long-term monitoring of the small releases identified beneath the site is not warranted.

We appreciate the opportunity to present this report for your review. Please call if you have questions or require additional information.

Very truly yours,



James E. Gribi
Registered Geologist
California No. 5843

Stanton Stubbs
Environmental Scientist

JEG/ct
Enclosure

c Mr. Rory Campbell,
Mr. Ron Mooney, Liquid Sugars, Inc.

C:\MyFiles\Reports\LSI-N-sbi.rp2.wpd

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 General Site Background 1
1.2 Scope of Work 1
1.3 Limitations 2

2.0 SITE AND SITE AREA HISTORY 2
2.1 Site History 2
Table 1 Summary of Historical Project Site Uses 2
2.2 Site Area History 4

3.0 DESCRIPTION OF FIELD ACTIVITIES 6
3.1 Prefield Activities 6
3.2 Location of Soil Borings 6
3.3 Drilling and Sampling of Soil Borings 6
3.4 Laboratory Analysis of Vapor and Groundwater Samples 7

4.0 RESULTS OF INVESTIGATION 8
4.1 General Subsurface Conditions 8
4.2 Results of Laboratory Analyses 8
Table 2 Summary of Soil and Groundwater Analytical Results 9

5.0 CONCLUSIONS 11

6.0 RISK-BASED CORRECTIVE ACTION MODELING 12
6.1 Preliminary Exposure Pathway Screening 12
Table 3 Preliminary Exposure Pathway Screening 13
6.2 RBCA Model Calculations 13
6.2.1 Model Input Parameters 14
6.2.2 Model Calculations of Baseline Risk 16
Table 4 Total Pathway Risk Estimates 16
6.3 Evaluation of RBCA Model Results 16

7.0 REQUEST FOR REGULATORY CLOSURE 17

FIGURES

Figure 1 Site Vicinity Map
Figure 2 Site Area Map
Figure 3 Site Plan
Figure 4 Soil HVOC Results
Figure 5 Groundwater HVOC Results
Figure 6 Groundwater PCE & 1,2-DCA Isoconcentration Map

APPENDICES

Appendix A	Summary of Geomatrix Sampling Results
Appendix B	Sanborn Fire Insurance Maps
Appendix C	Historical Aerial Photographs
Appendix D	Groundwater Flow Direction Maps From Oliver Rubber and Myers Drum Sites
Appendix E	Drilling Permit
Appendix F	Soil Boring Logs
Appendix G	Laboratory Data Report and Chain of Custody Record
Appendix H	RBCA Model Input Tables
Appendix I	RBCA Model Baseline Risk Tables

1.0 INTRODUCTION

This report documents a recently-completed soil and groundwater investigation and a Risk-Based Corrective Action (RBCA) assessment conducted by Gribi Associates for the Liquid Sugars, Inc. property located at 1266 66th Street in Emeryville, California (see Figure 1, Figure 2, and Figure 3). The soil and groundwater investigation included the drilling and sampling of 13 soil borings at the site using direct-push coring equipment. The RBCA assessment involved modeling site-specific environmental and human health exposure risks posed by residual contaminants identified at the site. The goals of these activities has been to: (1) Attempt to determine whether or not identified halogenated volatile organic compounds (HVOCs) originated from onsite or offsite sources; and (2) Determine whether or not leaving these contaminants on-site will pose a significant health or environmental risk for potential future onsite and offsite receptors.

1.1 General Site Background

Liquid Sugars, Inc., the current owner of the subject parcel, has operated a food-grade liquid sugar facility on the site since the 1970s. As part of a potential property transfer, Geomatrix recently conducted grab groundwater sampling from seven borings (SB-1 through SB-3, and B-1 through B-4) on the subject property. Results from these sampling activities are summarized in Appendix A. Laboratory analytical results from these borings indicated the presence of chlorinated hydrocarbons (HVOCs) in groundwater beneath the site. Specific HVOCs detected at various locations and concentrations included tetrachloroethene (PCE), trichloroethene (TCE) 1,2-dichloroethene (1,2-DCE), 1,2-dichloroethane (1,2-DCA), and vinyl chloride (VC). Elevated levels of PCE, TCE, and cis-1,2i-DCE were encountered in a grab groundwater sample collected from boring B-4, located near the east edge of the project site. In addition, an elevated level of 1,2-DCA was encountered in a groundwater sample collected from SB-3, located on the northwest side of the site. Geomatrix apparently met with the San Francisco Regional Water Quality Control Board (RWQCB), and the RWQCB indicated that a "no further action" might be possible for the project site if it can be demonstrated that the chlorinated hydrocarbons originated from offsite and that they pose no significant risk to potential receptors at the site.

On April 22, 1999, Gribi Associates submitted *Workplan to Conduct Soil Boring Investigation And Risk-Based Corrective Action Assessment* to the RWQCB. This workplan, which provided a detailed site history and proposed the drilling and sampling of approximately 12 investigative soil borings at the site, was approved verbally by Mr. Derrick Lee of your office on Tuesday, April 27, 1999.

1.2 Scope of Work

Gribi Associates was contracted by Liquid Sugars, Inc. to conduct the following scope of work:

- **Task 1** **Conduct prefield activities.**
- **Task 2** **Conduct drilling and sampling activities.**
- **Task 3** **Conduct laboratory analyses.**
- **Task 4** **Conduct RBCA Assessment.**
- **Task 5** **Prepare report of findings.**

These tasks were conducted in accordance with the approved the workplan and applicable investigative methods and guidelines.

1.3 Limitations

The services provided under this contract as described in this report include professional opinions and judgments based on data collected. These services have been provided according to generally accepted environmental protocol. The opinions and conclusions contained in this report are typically based on information obtained from:

1. Observations and measurements made by our field staff.
2. Contacts and discussions with regulatory agencies and others.
3. Review of available hydrogeologic data.

2.0 SITE AND SITE AREA HISTORY

Gribi Associates conducted a Phase I Environmental Site Assessment (ESA) for the subject site and adjacent LSI properties to the south. As part of this Phase I ESA, a detailed history was developed for the site and site vicinity using Sanborn Fire Insurance Maps, cross telephone directories, aerial photographs, and interviews with knowledgeable persons. Copies of relevant portions of selected Sanborn Maps and historical aerial photos are included in Appendix B and Appendix C, respectively. Gribi Associates also recently conducted additional interviews with knowledgeable persons in order to augment information obtained during the Phase I ESA. Results form these activities are summarized in the following sections.

2.1 Site History

Land uses identified for the project site, along with corresponding sources of historical information, are summarized in Table 1.

Table 1
SUMMARY OF HISTORICAL PROJECT SITE USES
Liquid Sugars North Parcel, 1266 66th Street

Date	Site Use	Information Sources and Comments
1903-1911	Residential	Sanborn Maps (1903, 1911).
1939-1974	Sodium silicate manufacturing (Diamond Alkali)	Aerial photos (1939, 1946, and 1968); Sanborn Maps (1950, 1952, 1967, and 1969); Interviews with Ron Mooney at LSI.
1974-present	Vegetable oil and liquid sugars processing (LSI)	Haines cross telephone directory (1979); Aerial photos (1977, 1989, and 1990); Interviews with Ron Mooney at LSI.

Sanborn Maps from 1903 and 1911 show a residential dwelling located in the southwest corner of the project site. Sanborn Maps from 1950 to 1969 show the project site to be occupied by Diamond Alkali, a manufacturer of sodium silicate. Aerial photographs taken in 1939, 1946, and 1968 show what appears to be the Diamond Alkali facility, as shown on Sanborn Maps, to be present. In a 1979 cross telephone directory, Vegetable Oil, Inc. (a former division of Liquid Sugars, Inc.) is listed at

the project site address. According to Mr. Ron Mooney of Liquid Sugars, Inc., the project site was purchased by a former Liquid Sugars, Inc. parent company in about 1974. Mr. Mooney stated that the five larger vertical above ground storage tanks (ASTs), along with most of the concrete slab underlying the project site yard area, was present when LSI purchased the property in 1974. When LSI took over the project site, these five larger ASTs were partially filled with solidified sodium silicate glass, and, in order to reuse these ASTs for vegetable oil products, it was necessary to manually remove the glass residue present in these tanks.

The current project site building configuration appears to have remained approximately the same since construction of the facility, presumable by Diamond Alkali, some time prior to 1939. The 1950 Sanborn Map shows the project site building as a "Factory Building", consisting of a lab in the southwest corner, a mixing room in the northwest corner, and warehouse and shipping occupying the remaining portions of the building. In 1950, the project site building appears to have been concrete paved, with the north portion of the building marked as "part concrete paved". On a 1939 aerial photo, the east half of the project site yard area appears to have been unpaved. In addition, the west half of the yard area appears to have included the currently-existing railspur along the east side of the project site building and approximately three large vertical ASTs (possibly still present on the site) immediately east from the railspur. On the 1946 aerial photo, the yard area on the east side of the project site contained five vertical ASTs in the approximate location of the currently-existing larger ASTs present on the site.

The manufacturing of sodium silicate involves the melting and processing of a soda ash and quartz sand mixture, with no use of chlorinated solvents or other organic compounds. According to the *Encyclopedia of Chemical Technology* (Kirk-Othmer, John Wiley & Sons, 1982), soluble silicate glasses are obtained in hearth regenerative furnaces by the reaction of quartz sand and sodium carbonate (soda ash) at temperatures greater than 1,100° Centigrade. Once the glass is produced in the furnace, it can be drawn and formed into solid lumps or dissolved into liquid form using rotary or pressure dissolvers. We talked with Ms. Marjorie L. Besemer, Senior Technical Services Representative for The PQ Corporation, a large sodium silicate manufacturer. Ms. Besemer stated that the only raw materials used in the manufacturing of sodium silicates are soda ash, silica sand, and water. She also stated that minimal mechanical devices are generally used in this process, and she is not aware of any use of chlorinated solvents or other organic chemicals associated with sodium silicate manufacturing. The PQ Corporation operated a sodium silicate manufacturing facility in Berkeley from about 1911 until recently. According to Mr. Jim Olivier, Plant Manager for The PQ Corporation Berkeley facility, the only groundwater issue that they have encountered at the Berkeley facility has been elevated pH levels in groundwater, and no chlorinated hydrocarbons have been encountered in groundwater beneath The PQ Corporation Berkeley facility.

The use of the project site by Liquid Sugars, Inc. has not involved significant use of any chlorinated solvents or other hydrocarbon compounds. The current Liquid Sugars, Inc. facility located on the project site comprises warehouse and office areas, laboratory, and numerous vertical silos and tanks related to the blending and packaging of various food-grade corn syrup and sugar products. The laboratory, which tests sugar and vegetable oil products, uses and generates wastes which include sulfuric acid, chloroform, acetic acid, sugars, and vegetable oil. Laboratory wastes are stored in small one to 55-gallon containers on a spill containment platform located in the warehouse area.

The project site building is elevated almost three feet above the surrounding outside ground surface, and water drainage within the building is provided by a series of floor drains that drain water in a northeasterly direction to storm drains in the project site yard area. There appear to be three distinct

floor drain systems within the project site building: (1) A series of four small round apparently older floor drains located in the "tile" room; (2) A series of square catch basins in the northwest warehouse and "warm" room area; and (3) A newer slit drain along the northeast corner of the warehouse area. The small round floor drains in the "tile" room are heavily rusted and may have been constructed during original building construction. The catch basins in the warehouse/"warm" room area include one catch basin in the warehouse with liquid sludge, one cemented-over catch basin in the warehouse area, and an in-line series of catch basins in the "warm" room which include two oil/water separators and one catch basin which was apparently cemented-over in 1988. The catch basins in the warehouse/"warm" room area may be younger than the "tile" room floor drains, but are older than the slit drain in the warehouse area, which was installed by Liquid Sugars, Inc.

The project site yard area contains about 20 vertical ASTs which are used to store food-grade products or associated raw materials. The yard area is covered with a concrete ground surface and contains an outer concrete berm around the above ground tank farm. Several catch basins in the yard divert rain water and potential spills to sumps located in the southeast and southwest corners of the yard area prior to discharge to the LSI main yard to the south across 66th Street. Ultimately, this drainage flows to the LSI wastewater treatment area located on the southernmost LSI parcel (on the south side of 65th Street) prior to discharge to the sanitary sewer. The project site ASTs are accessed from east and west railspurs via a series of pumps and piping. The boiler room in the project site yard area contains a spill containment platform used to store five-gallon drums labeled "Boiler Water Treatment".

2.2 Site Area History

Several industrial sites and activities located in an expected upgradient (northeast to east) direction from the project site have operated in the past. These have included: (1) Railroad transportation activities on railroad tracks and railspurs located immediately east from the project site; (2) Various industrial activities conducted in facilities bordering the project site on the north; (3) The Fabco Automotive factory, located approximately 65 feet east from the project site; (4) The former Oliver Rubber facility, located approximately 70 feet southeast from the project site; and (5) The former Myers Drum Company facility, located approximately 180 feet east from the project site and stretching approximately 1,000 feet further east to San Pablo Avenue.

The railroad tracks located immediately east from the project site, currently owned by Union Pacific Railroad, are not shown on the 1911 Sanborn Map but are shown on the 1939 aerial photo. In the 1939 aerial photo, the railspur currently located on the west side of the project site yard is present. Also, the railspur currently present on the east side of the project site yard area is present, but this railspur extends further north to provide railroad access to the old building immediately north from the project site yard (before this north building was extended eastward to the railroad tracks).

Rather than long-haul, through-going railroad activities, the primary activity associated with the railroad tracks in the site vicinity includes the on-loading and off-loading of raw materials and products from a wide variety of industrial sites located along the railroad tracks and associated railspurs in Berkeley and Emeryville. While long-haul, through-going railroad activities would not be expected to result in significant hazardous materials spills, the types of slow, bi-directional movements and railcar switchings associated with the materials transfer activities in the site vicinity would have a higher probability of resulting in unreported hazardous materials releases along the railroad tracks. During a recent visit to the project site, we noted several hazardous liquid chemical railcars being shuffled on the railroad tracks adjacent to the project site.

In addition, we noted that surface soils east from the project site between the railroad tracks and the Fabco Automotive facility appear to be discolored, possibly due to surface spills from railcars.

Bordering the project site on the north is an older industrial building occupied by George Martin Machining Company. While we were unable to access a detailed chemical inventory for this facility, machining activities would generally be expected to include the use of cutting oils and other solvents. On the 1950 and 1952 Sanborn Maps, a doughnut factory is shown immediately north from the project site yard area, and Bacon Vulcanizer Manufacturing Company is shown immediately west, north, and northeast from the project site building. The east portion of the Bacon Vulcanizer building, near the northeast corner of the project site building, is shown as a Machine Shop with a wooden floor. The west portion of the Bacon Vulcanizer building, near the northwest corner of the project site building, is shown with a concrete floor and includes a Smelting Room. On the 1969 Sanborn Map, the doughnut factory has expanded westward to include the entire currently-existing George Martin Machining building, and a brass and copper specialties factory is shown occupying the currently-existing New Logic International building, bordering the project site on the west.

According to Alameda County Health Agency files, Fabco Automotive, located approximately 65 feet east from the project site, began manufacturing truck components at the facility in 1919. Manufacturing processes generally include metal casting and welding, and chemicals used at the site include cutting oils, grease, machine tool coolant, iron and aluminum oxides, copper, silicon, and chromium. On the 1939 aerial photo, the Fabco Automotive facility extends westward only to the northern extension of Vallejo Street, approximately 150 feet east from the project site. On the 1946 aerial photo, the Fabco Automotive facility extends further westward to the railroad tracks, as it currently exists.

The former Oliver Rubber facility, located approximately 70 feet southeast from the project site, appears to have been constructed in it's current form sometime between 1939 and 1946. Alameda County Health Agency files list the use of zinc oxide, aromatic oils, naphthenic oil, and motor oil at the site. Nonhalogenated solvents were apparently stored in underground storage tanks (USTs) located in 65th Street, several hundred feet southeast from the project site. In addition, a Stormwater Pollution Control Plan indicates the storage of "Aromatic Oil" in a concrete-lined vault located on the west side of the Oliver Rubber yard area, approximately 140 feet east-southeast from the project site. Data from three shallow groundwater wells located on 65th Street, approximately 350 feet south from the project site indicated a southwesterly groundwater flow direction at the Oliver Rubber site. A representative groundwater flow direction map from the Oliver Rubber site is included in Appendix D.

According to DTSC files, the Myers Drum business began in 1917, originally as a cooperage (wooden barrel) operation and transitioning to steel drum cleaning and reconditioning in about 1942. In 1991, a Remedial Action Order was issued by the DTSC for the Myers Drum Company site. Subsequent soil and groundwater investigations included the installation and sampling of 13 groundwater monitoring wells at the site. Soil and groundwater analytical results indicated hydrocarbon contamination of soil and groundwater on the east half of the property, with some low levels of chlorinated solvents, particularly TCE, detected in downgradient (west) wells. Volatile organic compounds encountered at the Myers Drum site have included: (1) Acetone in the 1,000 part-per-billion (ppb) to 10,000 ppb range; (2) Toluene, Xylenes, PCE, TCE, 4-Methyl-2-Pentanone, 1,1-DCA, cis-1,2-DCE, and Vinyl Chloride in the 100 ppb to 1,000 ppb range; and (3) Chloroethane and 1,2-DCA in the 10 ppb to 100 ppb range. Based on results of site investigations, the DTSC

entered into an agreement with the responsible parties for Myers Drum Company requiring Myers Drum to conduct extensive soil and groundwater investigation and remediation as part of site closure. It is not clear whether potential impacts to nearby utilities have been investigated. Groundwater flow direction at this site, as summarized on maps contained in Appendix D, is towards the west.

Underground utility trenches that are visible in 66th Street adjacent to the project site include: (1) A water main apparently running under the north 66th Street sidewalk; (2) An East Bay Municipal Utility District sewer line apparently running along the north side of 66th Street; and (3) Large underground piping, possibly stormwater piping, apparently running down the middle of 66th Street.

3.0 DESCRIPTION OF FIELD ACTIVITIES

The 13 soil borings were drilled and sampled on Wednesday, Thursday, and Friday, April 28, 29, and 30, 1999.

3.1 Prefield Activities

Prior to initiating drilling activities, a soil boring installation permit was obtained from Alameda Department of Public Works. A copy of this permit is contained in Appendix E. In addition, proposed boring locations were marked with white paint, and Underground Services Alert (USA) was notified at least 48 hours prior to drilling. Also, Foresite, a private underground utility locator, cleared proposed boring locations and assisted in mapping underground utilities on the site and in 66th Street adjacent to the site. Prior to initiating drilling activities, a Site Safety Plan was prepared, and a tailgate safety meeting was conducted with all site workers.

3.2 Location of Soil Borings

Locations of the 13 investigative soil borings, IB-1 through IB-13, are shown on Figure 3. Two borings, IB-1 and IB-3, were sited on the adjacent north 66th Street City of Emeryville right-of-way, where railroad tracks cross 66th Street. Two borings, IB-2 and IB-5, were located adjacent to Geomatrix boring B-4; two borings, IB-8 and IB-9, were sited adjacent to the SB-3 Geomatrix boring; and two borings, IB-11 and IB-12, were sited close the SB-2 Geomatrix boring. The purpose of these borings was primarily to investigate potential impacts to near-surface soils in these "hot spot" areas. The remaining five borings, IB-4, IB-6, IB-7, IB-10, and IB-13, were sited at various locations on the project site to provide additional soil and groundwater data where needed.

3.3 Drilling and Sampling of Soil Borings

The 13 investigative borings were drilled to total depths ranging from about 15 feet to 20 feet below surface grade by Kvilhaug Well Drilling using Geoprobe™ hydraulically-driven soil coring equipment. This coring system allowed for the retrieval of almost continuous soil cores, which were contained in a clear plastic acetate tube nested inside a stainless steel core barrel. After the core barrel was brought to the surface and exposed, the soil core was logged by a qualified Gribi Associates scientist using sight, smell, and photoionization detector (PID). Boring logs for the 13 investigative soil borings are contained in Appendix F. Note that the ground floor surface in the project site building is elevated approximately 2.5 feet above the surrounding ground surface. Thus, below ground surface depths for inside borings IB-7, IB-8, IB-9, IB-11, IB-12, and IB-13,

which have not been corrected on boring logs, are approximately 2.5 feet shallower relative to below ground surface depths for outside borings IB-1 through IB-5, and IB-10.

Soil samples were collected from each of the borings at depths of about three feet and six feet below surface grade, with additional deeper soil samples collected in some of the borings. After the sample and core barrel was raised to the surface, each sample was collected as follows: (1) The soil-filled clear acetate tube was exposed for visual examination; (2) The selected sampling interval was collected by cutting the sample and acetate plastic tubing to the desired length (typically about six inches); (3) The ends of the selected sample were quickly wrapped with teflon sheets, capped with plastic end caps, labeled and wrapped tightly with tape; and (4) The sealed soil sample was immediately placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. All coring and sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water.

Following completion of soil sampling activities, 3/4 inch diameter Schedule 40 PVC well casing was placed in 11 of the borings (sloughing of gravel rail ballast in boring IB-2 precluded groundwater sampling from this boring, and groundwater was not sampled in IB-12). For borings IB-4, IB-5, and IB-10, it was necessary to wait two to three hours for sufficient groundwater to enter the borings for sampling. For borings IB-8 and IB-9, it was necessary to leave the borings overnight prior to sampling. Prior to collecting groundwater samples, groundwater depths were measured in the borings using an electronic sounder. Grab groundwater samples were collected from 12 of the borings using a clean small-diameter stainless steel bailer as follows: (1) Four 40-ml glass VOA vials were completely filled directly from the bailer with a minimum of agitation; (2) After making sure that no air bubbles were present, each container was tightly sealed with a teflon-lined septum; and (3) Each container was labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. Note that a duplicate groundwater sample was collected from IB-13 to provide a measure of laboratory quality assurance. All sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing as described above.

After completing sampling activities, the PVC well casing was removed and the 13 borings were grouted to match existing grade using a cement\sand slurry. Soil cuttings and rinseate were contained onsite in sealed DOT-approved containers pending laboratory analysis.

3.4 Laboratory Analysis of Vapor and Groundwater Samples

A total of 28 soil samples and 12 grab groundwater samples were analyzed for the following parameters:

USEPA 8260 Halogenated Volatile Organic Compounds (HVOCs)

All analyses were conducted by Acculabs, Inc., a California-certified analytical laboratory, with two-week turn around on lab results.

4.0 RESULTS OF INVESTIGATION

4.1 General Subsurface Conditions

Native soils encountered in the 13 borings were generally similar, consisting primarily of dark grey to olive grey and brown silts and clays with occasional thin sandy gravel units. In many of the borings, gravelly clay and silt units were encountered; however, the gravel clasts were interspersed throughout the clay and silt matrix and appeared to possess low permeabilities. Only in borings IB-1, IB-2, IB-4, and IB-13 were thin sandy friable gravels encountered. In IB-1 IB-4, and IB-13, these friable gravel units were encountered from 11 feet to 14 feet in depth, eight to ten feet in depth, and five feet to eight feet in depth, respectively, (depths for IB-13 corrected approximately three feet to match outside ground surface depths). In IB-2, sandy wet gravels were encountered from about five feet to 12 feet in depth.

During drilling, water-saturated soils were generally only encountered below about 12 feet in depth, and for borings IB-8, IB-9, and IB-11, water-saturated soils were not encountered down to total depths of about 20 feet (17 feet corrected outside ground surface depth). For borings IB-1, IB-3, IB-4, IB-5, IB-11, and IB-13, groundwater rose in the borings to relatively shallow depths of about five to six feet below outside ground surface grade. For borings IB-7, IB-8, and IB-9, groundwater rose only to about 13 feet below outside ground surface grade. We were unable to measure groundwater depths in IB-2 and IB-10 due to sloughing surface gravels in the borings.

Although soils and groundwater encountered in the 13 borings did not exhibit visual or olfactory evidence of HVOC impacts, some PID levels were recorded in soil samples collected from IB-1, IB-2, IB-3, IB-4, IB-6, IB-7, and IB-13. Of these, low to moderate PID levels were noted in shallow soil samples in IB-1, IB-2, IB-3, IB-4, and IB-13.

4.2 Results of Laboratory Analyses

Soil and water analytical results are summarized in Table 2 and on Figure 4 and Figure 5, respectively. A groundwater PCE and 1,2-DCA isoconcentration map is shown on Figure 6. The laboratory data report and chain-of-custody record for soil and groundwater analyses is contained in Appendix G. Note that for several of the samples, it was necessary to re-run laboratory analysis at different sample dilutions.

Table 2
SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS
Liquid Sugars North Parcel, 1266 66th Street

Sample ID	Sample Type	Sample Depth	Soil Description	PID	Concentration (ppm)						
					VC	c-1,2-DCE	c-1,2-DCE	TCE	PCE	1,2-DCA	Other
IB-1.1	Soil	2.0 ft	Grey firm CLAY	0	**0.045**	<0.012	**0.32**	**0.21**	**0.039**	<0.012	<.0120
IB-1.2	Soil	4.0 ft	Grey green gravelly CLAY	1.6	**0.014**	<0.0050	**0.18**	**0.13**	**0.12**	<0.0050	<0.0050
IB-1.3	Soil	13.0 ft	Brown to grey silty GRAVEL	3.8	<0.0050	<0.0050	**0.0094**	**0.012**	**0.028**	<0.0050	<0.0050
IB-1W	Water	6.9 ft		--	**0.0034**	<0.00050	**0.036**	**0.024**	**0.210**	<0.00050	<0.00050
IB-2.1[1]	Soil	2.0 ft	Grey loose GRAVEL	3.8	<0.050	<0.050	<0.050	**0.024**[2]	**0.28**	<0.050	**0.0021**[3]
IB-2.2	Soil	6.0 ft	Grey green silty CLAY	**78**	**0.13**	**0.024**	**0.33**	**0.11**	**0.29**	<0.0050	<0.0050
IB-2.3	Soil	11.5 ft	Brown sandy GRAVEL	6.8	**0.0063**	**0.021**	**0.099**	**0.048**	**2.6**	<0.0050	**0.0072**[4]
IB-3.1	Soil	2.0 ft	Grey sandy GRAVEL	3.8	<0.0050	<0.0050	<0.0050	<0.0050	**0.017**	<0.0050	<0.0050
IB-3.2	Soil	5.5 ft	Grey to brown clayey GRAVEL	0	<0.0050	<0.0050	<0.0050	<0.0050	**0.068**	<0.0050	<0.0050
IB-3W	Water	5.5 ft		--	<0.0010	<0.00050	<0.00050	**0.0052**	**0.036**	<0.00050	<0.00050
IB-4.1	Soil	3.5 ft	Grey-brown silty CLAY	364	**0.039**	<0.025	**0.82**	**0.025**	**0.048**	<0.025	<0.025
IB-4.2	Soil	5.5 ft	Olive brown friable SILT	42	<0.025	<0.025	**0.37**	<0.025	<0.025	<0.025	<0.025
IB-4W	Water	6.2 ft		--	**0.150**	**0.016**	**0.940**	**0.048**	**0.064**	<0.00050	<0.0050
IB-5.1	Soil	3.5 ft	Grey green silty CLAY	0	**0.0090**	<0.0050	**0.078**	**0.0080**	**0.010**	<0.0050	<0.0050
IB-5.2	Soil	6.0 ft	Brown clayey GRAVEL	0	<0.0050	<0.0050	**0.044**	**0.0073**	**0.025**	<0.0050	<0.0050
IB-5W	Water	6.1 ft		--	<0.025	<0.012	**1.200**	**0.200**	**2.500**	<0.012	<0.012
IB-6.1	Soil	3.5 ft	Grey green silty CLAY	0	<0.0050	<0.0050	**0.0061**	**0.0096**	**0.0052**	<0.0050	<0.0050
IB-6.2	Soil	6.0 ft	Brown-grey gravelly SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-6.4	Soil	15.0 ft	Reddish brown CLAY	6.0	<0.0050	<0.0050	<0.0050	<0.0050	**0.011**	**0.012**	<0.0050
IB-6W	Water	14.4 ft[5]		--	<0.00050	<0.00050	<0.00050	<0.00050	**0.020**	**0.038**	<0.00050
IB-7.1	Soil	4.5 ft	Dark grey wet CLAY	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-7.2	Soil	12.0 ft	Brown silty GRAVEL	1.6	<0.0050	<0.0050	<0.0050	<0.0050	**0.042**	**0.042**	<0.0050
IB-7W	Water	13.5 ft[5]		--	<0.00050	<0.00050	**0.0039**	<0.00050	**0.010**	**0.220**	<0.00050

Table 2
SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS
Liquid Sugars North Parcel, 1266 66th Street

Sample ID	Sample Type	Sample Depth	Soil Description	PID	Concentration (ppm)						
					VC	t-1,2-DCE	c-1,2-DCE	TCE	PCE	1,2-DCA	Other
IB-8.1	Soil	3.0 ft	Dark grey silty CLAY	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-8.2	Soil	6.0 ft	Olive green-brown silty CLAY	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-8W	Water	12.4 ft[5]		--	**<0.0044**	<0.00050	**0.0042**	**0.0052**	**0.035**	**2.200**	**0.0975[6]**
IB-9.1	Soil	3.0 ft	Dark grey CLAY	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-9.2	Soil	6.5 ft	Olive green clayey SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-9W	Water	12.5 ft[5]		--	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	**0.032**	<0.00050
IB-10.1	Soil	6.5 ft	Reddish brown gravelly SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-10W	Water	--		--	**0.0082**	**0.0026**	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
IB-11.1	Soil	3.5 ft	Dark grey clayey SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	**0.020**	<0.0050	<0.0050
IB-11.2	Soil	6.0 ft	Brown gravelly SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-11W	Water	5.0 ft[5]		--	**0.024**	**0.019**	**0.320**	**0.150**	**0.620**	**0.038**	**0.0099[7]**
IB-12.1	Soil	3.0 ft	Dark grey clayey SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	**0.0087**	<0.0050	<0.0050
IB-12.2	Soil	7.0 ft	Brown clayey, gravelly SILT	0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
IB-13.1	Soil	6.0 ft	Olive green-brown clayey SILT	48	**0.18**	**0.011**	**0.039**	<0.025	**0.078**	<0.0050	<0.0050
IB-13.2	Soil	9.0 ft	Grey-brown sandy GRAVEL	42	<0.0050	<0.0050	**0.13**	**0.041**	**0.10**	<0.0050	<0.0050
IB-13W	Water	3.9 ft[5]		--	**0.076**	**0.057**	**0.630**	**0.160**	**0.390**	**0.087**	**0.0142[8]**
D-1[9]	Water	3.9 ft[5]		--	**0.080**	**0.052**	**0.660**	**0.160**	**0.410**	**0.087**	**0.0135[10]**

PID = Photoionization Detector reading, in parts per million as measured using a 100-ppm isobutylene standard.
VC = Vinyl Chloride
t-1,2-DCE = trans-1,2-Dichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
TCE = Trichloroethene
PCE = Tetrachloroethene
1,2-DCA = 1,2-Dichloroethane
Other = Sum of concentrations of 22 remaining HVOC compounds (see footnotes for specific compounds and concentrations).
<0.012 = Not detected above the value expressed in parentheses.
1 = Acculabs data report states "Sample Name IB-2.1 (2.0) had dibromofluoromethane surrogate recovery below control chart acceptance criteria and Toluene-d8 surrogate recovery above control chart acceptance criteria. These recovery problems are due to sample matrix interferences."
2 = Acculabs data report states "the measured concentration is an estimated value below the method Reporting Level."
3 = 0.0021 ppm of Chloromethane. Acculabs data report states "the measured concentration is an estimated value below the method Reporting Level."
4 = 0.0072 ppm of Chloroethane
5 = Inside boring groundwater depths corrected 2.7 feet upwards to match outside boring groundwater depths.
6 = Sum of 0.0035 ppm Chloromethane, 0.078 ppm Chloroform, and 0.016 ppm 1,2-Dichloropropane.
7 = Sum of 0.0034 Chloromethane, 0.0032 1,1-Dichloroethene, and 0.0033 ppm 1,1-Dichloroethane.
8 = Sum of 0.0066 ppm 1,1-Dichloroethene and 0.0076 ppm 1,1-Dichloroethane.
9 = Duplicate sample from IB-13.
10 = Sum of 0.0062 ppm 1,1-Dichloroethene and 0.0075 ppm 1,1-Dichloroethane

5.0 CONCLUSIONS

Both field and laboratory analytical results seem to indicate small releases from both onsite and offsite sources which, due to low-permeability soils beneath the site, have resulted in small, concentrated plumes that have not migrated significant distances. Three apparently isolated release areas have been identified on the project site: (1) An area along the east property line adjacent to the Union Pacific Railroad tracks; (2) An area beneath the "tile room" portion of the project site building; and (3) An area on the west side of the "warm room" portion of the project site building.

Results from borings IB-1 through IB-5, IB-10, and Geomatrix boring B-4 indicate near-surface releases, possibly from past railroad or "midnight dumping" activities along the Union Pacific Railroad tracks and adjacent railspurs. Whereas the halogenated volatile organic compounds encountered in subsurface soils and groundwater would normally be expected to either volatilize or migrate downward through both soil and groundwater, the low-permeability soils beneath the project site appear to have essentially encapsulated these HVOCs near the release source. Further, the concentrations of breakdown products TCE, t-1,2-DCE, c-1,2-DCE, and VC relative to the probable PCE parent product clearly show that natural attenuation of these HVOCs has occurred over time. While the exact cause of the release (or releases) in this area may never be identified, it seems most likely, based on land use alone, that the release occurred along the railroad tracks and adjacent railspurs, and did not result from past project site activities. Whereas no historic land use on the project site has been identified which would likely have resulted in this release, the myriad of railcar activities which have occurred along the east property line since the 1930s, as well as the ease of vehicular access from 66th Street for unauthorized chemical dumping, would suggest that these releases are related to railroad or unauthorized chemical dumping along the railroad tracks, and not project site activities.

Results from borings IB-11, IB-12, IB-13, and Geomatrix boring SB-2 suggest a near-surface releases of HVOCs in the vicinity of IB-13 which has migrated vertically to groundwater and then in a westerly direction towards IB-11, IB-12, and SB-2. Whereas shallow soils are impacted in IB-13, no significant impacts were encountered in shallow soil samples from IB-11 or IB-12. Once again, the concentrations of breakdown products TCE, t-1,2-DCE, c-1,2-DCE, and VC relative to the probable PCE parent product clearly show that natural attenuation of these HVOCs has occurred over time. While the exact cause of this release is not readily apparent, two possible sources include: (1) Surface spills on the east side of the project site building; and (2) Possible breaches in floor drain piping adjacent to boring IB-13.

Results from borings IB-6 through IB-11, and Geomatrix boring SB-3 show 1,2-DCA impacts to groundwater in the northwest corner of the project site building, but no 1,2-DCA impacts to subsurface soils. The large 1,2-DCA groundwater concentration gradient between borings IB-8 and IB-9, from 2.2 ppm in IB-8 to 0.032 ppm in IB-9 within a lateral distance of less than ten feet, may have resulted from: (1) An unidentified easterly source between IB-8 and IB-6; or (2) Differences in soil permeability, which could have resulted in a localized concentration of 1,-2 DCA in relatively tight soils in this area. This second scenario seems to fit the data better, given: (1) No detectable 1,2-DCA in shallow soils in any of the borings; (2) The slower groundwater recharge in borings IB-8 and IB-9 relative to surrounding borings, including IB-6 and IB-7; and (3) The relatively high concentration of 1,2-DCA in the grab groundwater sample from IB-7, located at the north project

site property boundary northeast from borings IB-8, IB-9, and Geomatrix boring SB-3. Further, given the very slow recharge in borings IB-8 and IB-9, it seems likely that the 1,2-DCA identified in these borings is not migrating appreciably.

Results of this and previous investigations indicate that although solvent releases have impacted the project site environment, low-permeability soils beneath the project site have limited these impacts. Given these limited impacts, it appears unlikely that residual HVOCs identified at the site pose a significant risk to environmental or human health receptors. In order to test this conclusion, Gribi Associates conducted a Risk-Based Corrective Action (RBCA) assessment to determine whether or not residual HVOCs encountered at the project site pose a risk to potential nearby environmental and human health receptors.

6.0 RISK-BASED CORRECTIVE ACTION MODELING

In order to assess potential risk associated with HVOCs encountered at the site, Gribi Associates conducted Tier 2 Risk-Based Corrective Action (RBCA) modeling for the project site. Given the spatial distribution of HVOCs, we conducted RBCA modeling for two general areas of the site: (1) The southern portion of the project site yard area extending offsite to the east, which includes borings IB-1, IB-2, IB-4, IB-5, IB-10, and Geomatrix boring B-4 ("outside area"); and (2) The entire building area, which includes IB-6, IB-7, IB-8, IB-9, IB-11, IB-12, IB-13, and Geomatrix borings SB-1, SB-2, SB-3, and B-1 ("inside area"). The northern portion of the project site yard, which includes Geomatrix borings B-2 and B-3 was excluded from the RBCA modeling due to limited data and apparent low to nondetectable HVOC levels in groundwater beneath this portion of the site. The RBCA modeling included: (1) Conducting preliminary exposure pathway screening for the site to eliminate incomplete exposure pathways; (2) Conducting RBCA risk calculations for complete exposure pathways; and (3) Evaluating results of RBCA modeling.

6.1 Preliminary Exposure Pathway Screening

Gribi Associates conducted a preliminary evaluation of all potential exposure pathways for both the outside and inside project site areas. The purpose of this evaluation was to eliminate those exposure pathways which are not complete and, hence, do not apply to the project site. Results of this evaluation are summarized in Table 3.

Table 3
PRELIMINARY EXPOSURE PATHWAY SCREENING
Liquid Sugars North Parcel, 1266 66th Street

Exposure Pathway	Complete?		Discussion
	Outside Area	Inside Area	
Air Exposure Pathway			
Surface soil volatilization. to ambient air	Possible	No	
Subsurface soil volatilization to ambient air	Possible	No	
Subsurface soil volatilization to enclosed space	Possible	Possible	Outside area- possible future building construction.
Groundwater volatilization to ambient air	Possible	No	
Groundwater volatilization to enclosed space	Possible	Possible	Outside area - possible future building construction
Soil Exposure Pathway			
Dermal contact/ingestion of surface soils	Possible	Possible	Construction worker
Dermal contact/ingestion of subsurface soils	Possible	Possible	Construction worker
Groundwater Exposure Pathway			
Soil leaching to groundwater, ingestion	No	No	No nearby water use wells.
Dissolved/free phase groundwater ingestion	No	No	No nearby water use wells
Surface Water Exposure Pathway			
Soil leaching to surface water	No	No	No nearby surface water bodies.
Groundwater plume discharge to surface water	No	No	No nearby surface water bodies.

6.2 RBCA Model Calculations

Gribi Associates conducted Tier 2 RBCA calculations using the *Tier 1 and Tier 2 RBCA Spreadsheet System*, Version 1.01 computer model developed by Groundwater Services, Inc. This model provides for Tier 2 RBCA calculations in accordance with and using default values contained in ASTM Standard E-1739. Based on preliminary exposure pathway screening, as summarized above, Gribi Associates ran RBCA calculations for both the outside and inside project site areas for the following pathways: (1) Inhalation of HVOC vapors via surface soil, subsurface soil, and groundwater volatilization; and (2) Direct ingestion of and dermal contact with HVOC-impacted surface soil and subsurface soil (subsurface soil is soil that is greater than three feet in depth).

The RBCA modeling process can be divided into the following general tasks: (1) Input of site specific and general parameters; (2) Calculation of baseline intake rates and risk levels associated with actual site conditions; and (3) Calculation of Site-Specific Target Levels (SSTLs) for individual and multiple constituent health risks. These activities are summarized in the following sections.

6.2.1 Model Input Parameters

Input data tables generated as part of the computer model output are contained in Appendix H. These tables summarize general input parameters, chemical and toxicological data for specific site constituents, and user-specified values for key model parameters. Some of these specified values include the following:

- **Contaminants of concern (COC):** 1,2-DCA, c-1,2-DCE, t-1,2-DCE, PCE, TCE, and VC. Based on site use and investigative results.
- **Onsite and offsite groundwater ingestion exposure:** No water use wells identified in site vicinity.
- **Onsite surface soil direct ingestion/dermal contact exposure:** Possible future construction-related activities.
- **Onsite outdoor air exposure:** Commercial receptors, only for outside area of site.
- **Offsite outdoor air exposure:** Not evaluated (onsite more protective).
- **Indoor onsite air exposure:** Commercial receptors, both project site building area and outside area (possible future construction in current project site yard area).
- **Contaminated soil area:** *Outside Area:* 10,000 square feet (100 ft x 100 ft). *Inside Area:* 13,200 square feet (80 ft x 165 ft)
- **Depth to top of affected subsurface soils:** 4.0 feet
- **Vadose zone thickness:** *Outside Area:* 13 feet. *Inside Area:* 17 feet.
- **Hydraulic conductivity:** 1 x 10^{-5} centimeters per second (based on soil type and slow groundwater recharge).
- **Groundwater flow gradient:** 0.01 feet/feet (west). Approximate average of selected historical gradient calculations from Myers Drum Company and Oliver Rubber sites.
- **Representative surface soil COC concentrations:** *Outside Area:* The upper 95% confidence limit (UCL) of the mean concentration from the shallowest soil samples from IB-1, IB-2, IB-4, IB-5, and IB-10 for each constituent. *Inside Area:* The maximum constituent concentrations in samples above four feet in depth (only PCE was encountered in these samples). Representative surface soil COC concentrations used are:

	Outside Area	**Inside Area**
1,2-DCA	0.0025 mg/kg	0.005 mg/kg
c-1,2-DCE	0.55 mg/kg	0.005 mg/kg
t-1,2-DCE	0.0025 mg/kg	0.005 mg/kg
PCE	0.12 mg/kg	0.087 mg/kg

TCE	0.091 mg/kg	0.005 mg/kg
VC	0.038 mg/kg	0.005 mg/kg

- **Representative subsurface soil COC concentrations:** *Outside Area:* The upper 95% confidence limit (UCL) of the mean concentration from soil samples below four feet in depth from IB-1, IB-2, IB-4, IB-5, and IB-10 for each constituent. *Inside Area:* The upper 95% confidence limit (UCL) of the mean concentration from soil samples below four feet in depth from IB-6, IB-7, IB-8, IB-9, IB-11, IB-12, and IB-13 for each constituent. Representative subsurface soil COC concentrations used are:

	Outside Area	**Inside Area**
1,2-DCA	0.0025 mg/kg	0.0068 mg/kg
c-1,2-DCE	0.30 mg/kg	0.0077 mg/kg
t-1,2-DCE	0.01 mg/kg	0.0025 mg/kg
PCE	0.25 mg/kg	0.02 mg/kg
TCE	0.15 mg/kg	0.0055 mg/kg
VC	0.031 mg/kg	0.0084 mg/kg

- **Representative groundwater COC concentrations:** *Outside Area:* The upper 95% confidence limit (UCL) of the mean concentration from grab groundwater from IB-1, IB-4, IB-5, IB-10, and Geomatrix boring B-4 for each constituent. *Inside Area:* The upper 95% confidence limit (UCL) of the mean concentration from soil samples below four feet in depth from IB-6, IB-7, IB-8, IB-9, IB-11, IB-13, and from Geomatrix borings SB-1, SB-2, and SB-3 for each constituent. Representative groundwater COC concentrations used are:

	Outside Area	**Inside Area**
1,2-DCA	0.00025 mg/kg	0.13 mg/kg
c-1,2-DCE	1.3 mg/kg	0.058 mg/kg
t-1,2-DCE	0.0032 mg/kg	0.0042 mg/kg
PCE	2.6 mg/kg	0.07 mg/kg
TCE	0.24 mg/kg	0.026 mg/kg
VC	0.017 mg/kg	0.0084 mg/kg

- **Target Risk Levels:** For Class A carcinogens, we used Individual and Cumulative Carcinogenic Risk Goals of 10^{-5} and 10^{-4}, respectively, which represent upperbound excess lifetime risks from chronic exposure to individual and multiple constituents. The Individual Carcinogenic Risk Goal of 10^{-5} was used, rather than the ASTM value of 10^{-6}, based on our understanding of RWQCB requirements for commercial receptors in the East Bay area. In order to evaluate individual and cumulative risk from non-carcinogenic effects, we used default Hazard Quotient and Hazard Index values of 1 for both, which represent the ratio of the exposure level to established hazard threshold levels for the COCs.

For other parameters, such as exposure parameters and building parameters, we used default values, which conform to ASTM E-1739 default parameter values and are conservative.

6.2.2 Model Calculations of Baseline Risk

Tabulated model calculations of site-specific constituent baseline intake rates and risk levels for each exposure pathway are contained in Appendix I. The baseline risk represents the excess risk to which the receptor would be exposed under current or anticipated future site conditions if no remedial measures are implemented. Total carcinogenic risk and toxic effects risk for each complete pathway are summarized in Table 4.

Table 4
TOTAL PATHWAY RISK ESTIMATES
Liquid Sugars North Parcel, 1266 66th Street

Exposure Pathway	Carcinogenic Risk				Toxic Effects Risk			
	Individual COC Risk		Cumulative COC Risk		Individual COC Risk		Cumulative COC Risk	
	Maximum Value	Target Risk	Total Value	Target Risk	Hazard Index	Applicable Limit	Hazard Quotient	Applicable Limit
Outside Area								
Outdoor air exposure pathways	2.6×10^{-7}	1×10^{-5}	3.4×10^{-7}	1×10^{-4}	1.0×10^{-5}	1	1.0×10^{-4}	1
Indoor air exposure pathways	3.8×10^{-5}	1×10^{-5}	4.9×10^{-5}	1×10^{-4}	1.0×10^{-3}	1	1.0×10^{-2}	1
Soil Exposure Pathways	7.5×10^{-7}	1×10^{-5}	8.3×10^{-7}	1×10^{-4}	1.6×10^{-3}	1	2.4×10^{-3}	1
Inside Area								
Indoor air exposure pathways	1.8×10^{-5}	1×10^{-5}	2.0×10^{-5}	1×10^{-4}	2.2×10^{-2}	1	2.2×10^{-2}	1
Soil Exposure Pathways	9.8×10^{-8}	1×10^{-5}	1.5×10^{-7}	1×10^{-4}	2.5×10^{-4}	1	3.0×10^{-4}	1

6.3 Evaluation of RBCA Model Results

Based on model risk estimates, it appears that there is no significant risk of exposure from any identified HVOC constituents present at the project site. The risk values associated with the outdoor air exposure and soil exposure pathways are below target risk levels. The total pathway cumulative carcinogenic risk values associated with indoor vapor exposure for the outside and inside project site areas are 4.9×10^{-5} and 2.0×10^{-5}, respectively. These cumulative risk values are below the cumulative risk target level of 1.0×10^{-4}. The only calculated risk values which exceed target risk levels are the individual carcinogenic risk values associated with possible indoor air exposure to vinyl chloride. These individual risk values for indoor vinyl chloride vapor exposure in the outside and inside project site areas are 3.8×10^{-5} and 1.8×10^{-5}, respectively. We believe that since these risk values are only slightly above the target risk of 1×10^{-5}, they do not represent a significant risk. It is also worth noting that because there is no building in the project site yard area, there is currently no risk of indoor vapor exposure in the yard area (the indoor air exposure pathway was modeled for the yard area only in the event that a building is constructed on this portion of the site in the future).

Factors which we believe would tend to mitigate the low levels of risk associated with indoor vapor exposure in both the outside and inside project site areas include:

- **Subsurface soils have very low permeabilities and would not be expected to transmit HVOC vapors very readily.** The RBCA model used default values to calculate vapor exposure concentrations, rather than site-specific values (which have not been measured). Given the low permeability soils beneath the site, we would expect risk values based on actual site conditions to be lower than those calculated using default values.

- **Grab groundwater sample results used for the risk assessment may be elevated relative to true groundwater conditions.** It is our experience that grab groundwater samples from open borings are usually higher than true groundwater conditions.

We believe that these mitigating factors would tend to decrease the risk associated with the indoor air exposure pathway to below the target risk level.

7.0 REQUEST FOR REGULATORY CLOSURE

Based on the results of this and previous investigations at the site, we believe that regulatory case closure is warranted. The basis for this belief is as follows:

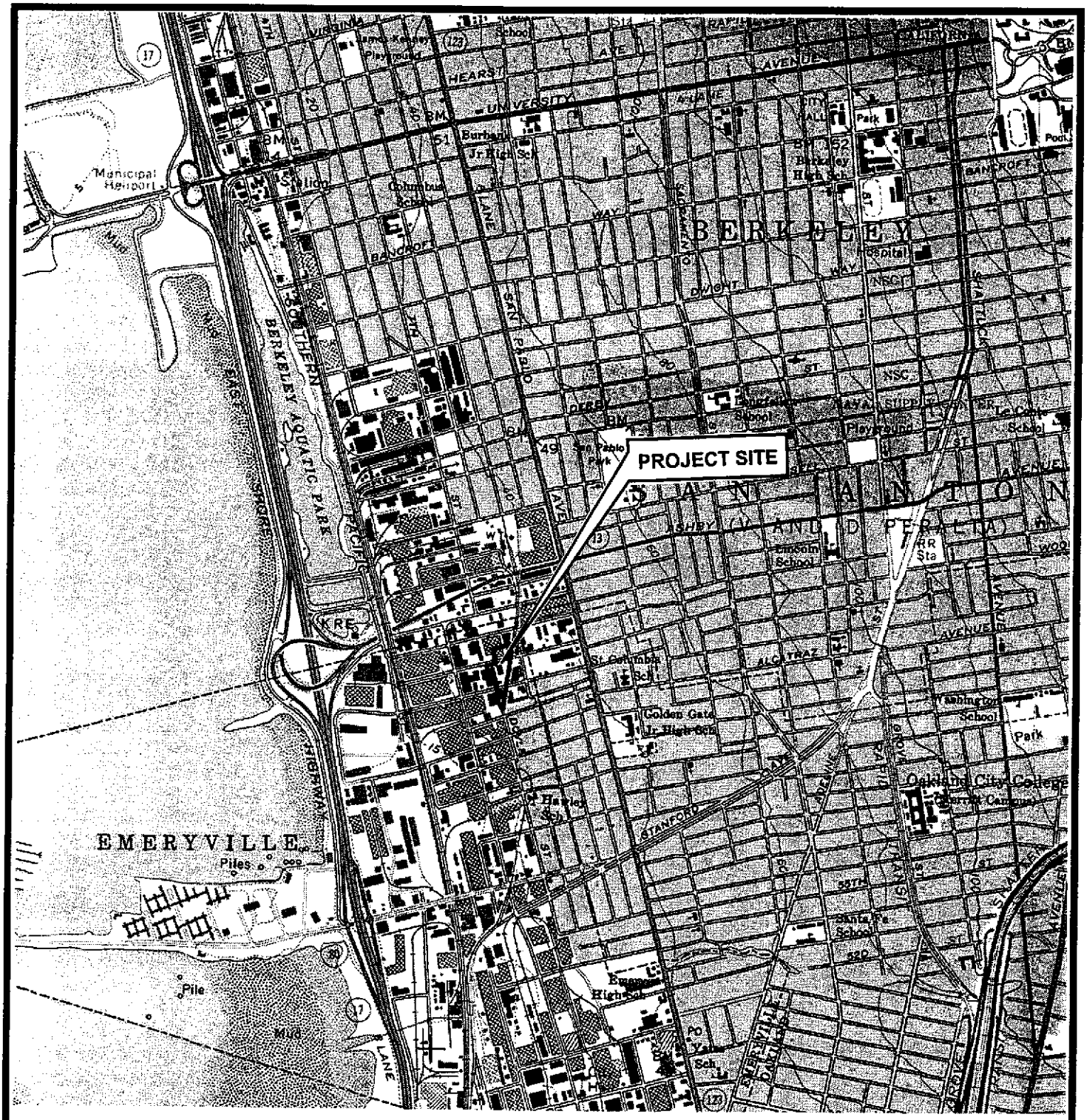
- The HVOC releases identified on the project site appear to represent small releases which, due to low-permeability soils beneath the site, have resulted in small, concentrated plumes that are bound up in tight soils and have not migrated significant distances.

- The sources of historic HVOC releases, whether onsite or offsite, are not currently present at the site. While the exact sources of historic HVOC releases are not known, it seems clear, based on current site activities and the high degree of natural attenuation of probable parent products, that these releases occurred in the distant past, prior to LSI ownership of the property.

- The residual HVOCs present beneath the site pose no significant risk to current and future environmental and human health receptors at the site and in the site vicinity.

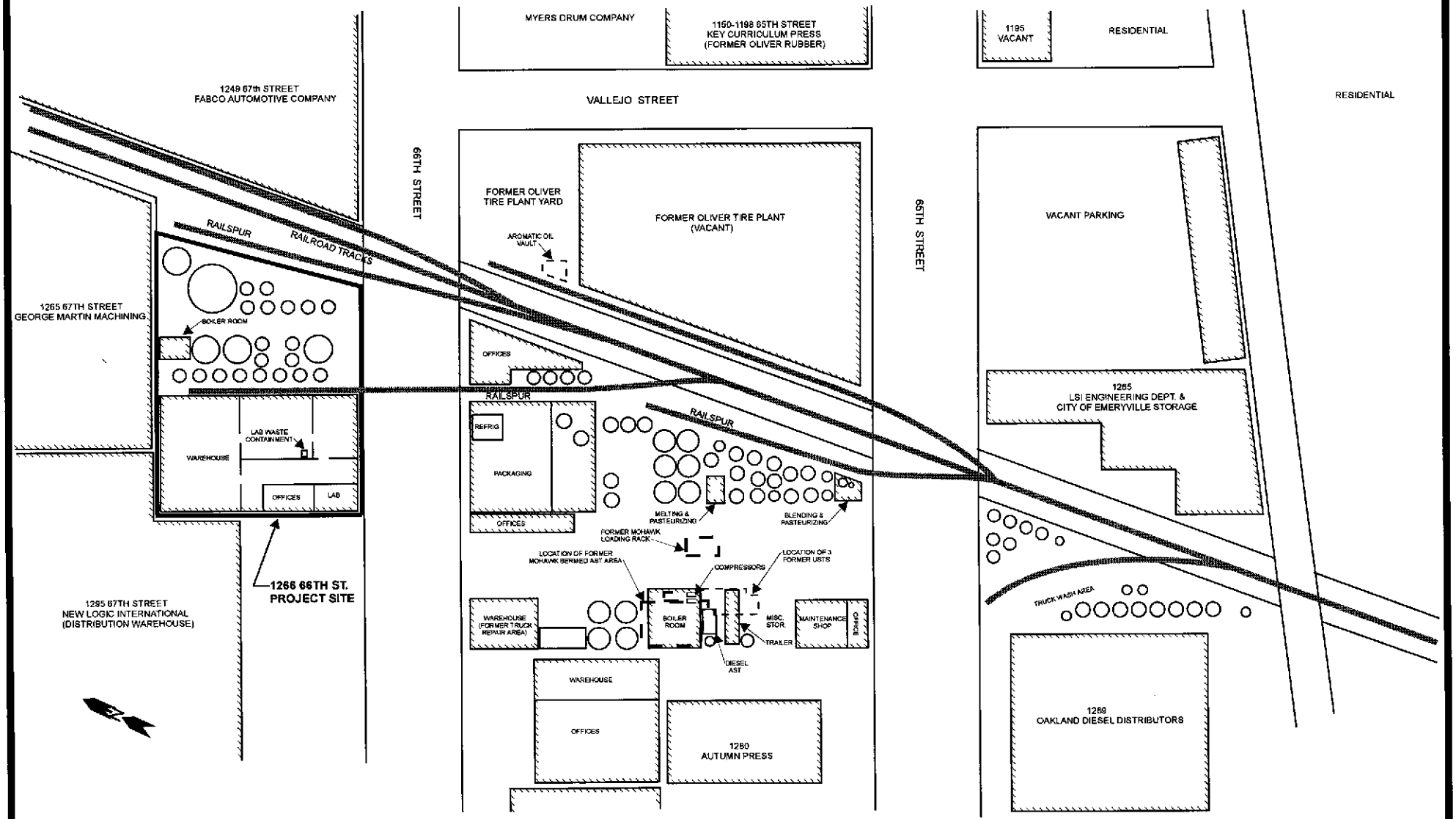
- The proposal to allow natural attenuation of the HVOCs is protective of groundwater resources in the site vicinity. Given the low groundwater recharge beneath the site and the lack of beneficial groundwater uses in the site vicinity, allowing residual HVOCs to natural attenuate over time will not impact groundwater resources in the area.

- Given the probable age of these releases and their lack of migration over previous decades, we believe that long-term monitoring of the small releases identified beneath the site is not warranted.



TOPOGRAPHY FROM USGS OAKLAND, WEST, CALIFORNIA
7.5-MINUTE QUADRANGLE MAPS, (TOPO! 1997).

DESIGNED BY:	CHECKED BY:	**SITE VICINITY MAP**	DATE: 11/09/98	FIGURE: 1
DRAWN BY: JG	SCALE: 1:24,000	LIQUID SUGARS, INC. EMERYVILLE, CALIFORNIA	**GRIBI Associates**	
PROJECT NO: 149-01-01				



NOTES

- VERTICAL PRODUCT SILO/TANK
- RAILROAD TRACKS OR RAILSPUR

ALL LSI PARCELS ARE PAVED (90+% CONCRETE)

0 70 140

APPROX. SCALE IN FEET

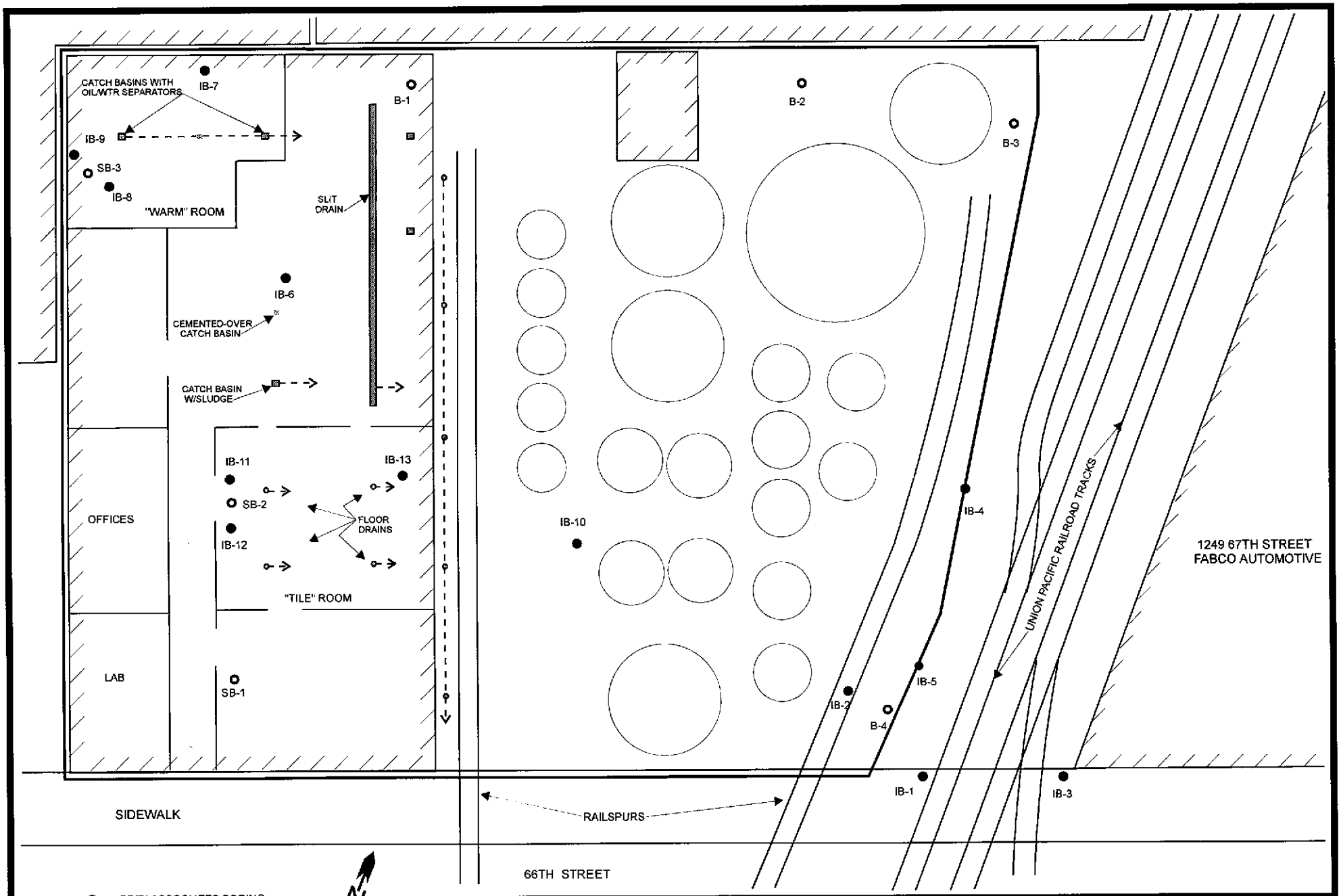
DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE:
PROJECT NO: 149-01-03	

SITE AREA MAP

LIQUID SUGARS, INC. FACILITY
EMERYVILLE, CALIFORNIA

DATE: 06/09/99 | FIGURE: 2

GRIBI Associates



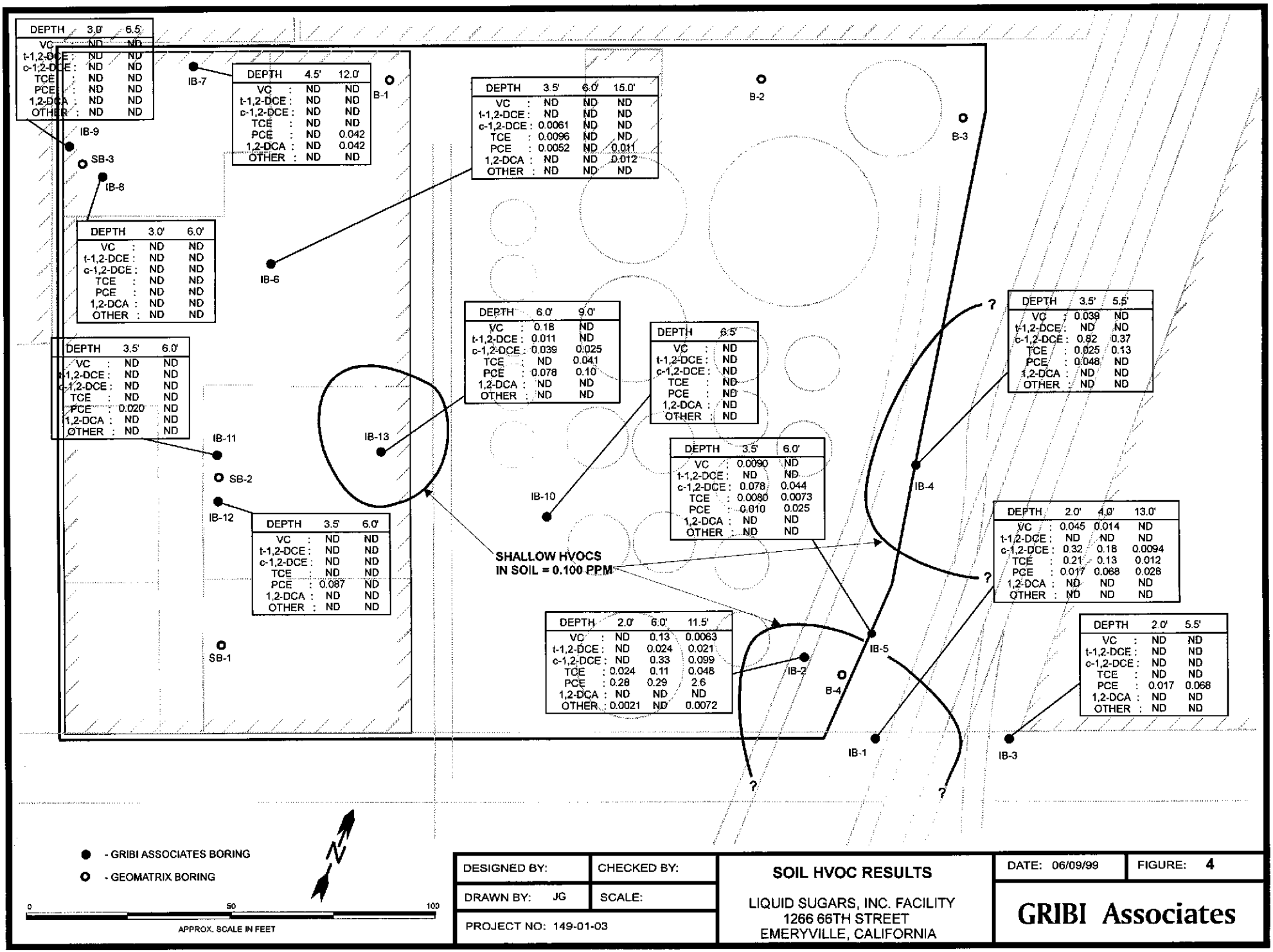
DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE:
PROJECT NO: 149-01-03	

SITE PLAN

LIQUID SUGARS, INC. FACILITY
1266 66TH STREET
EMERYVILLE, CALIFORNIA

DATE: 06/09/99 | FIGURE: 3

GRIBI Associates



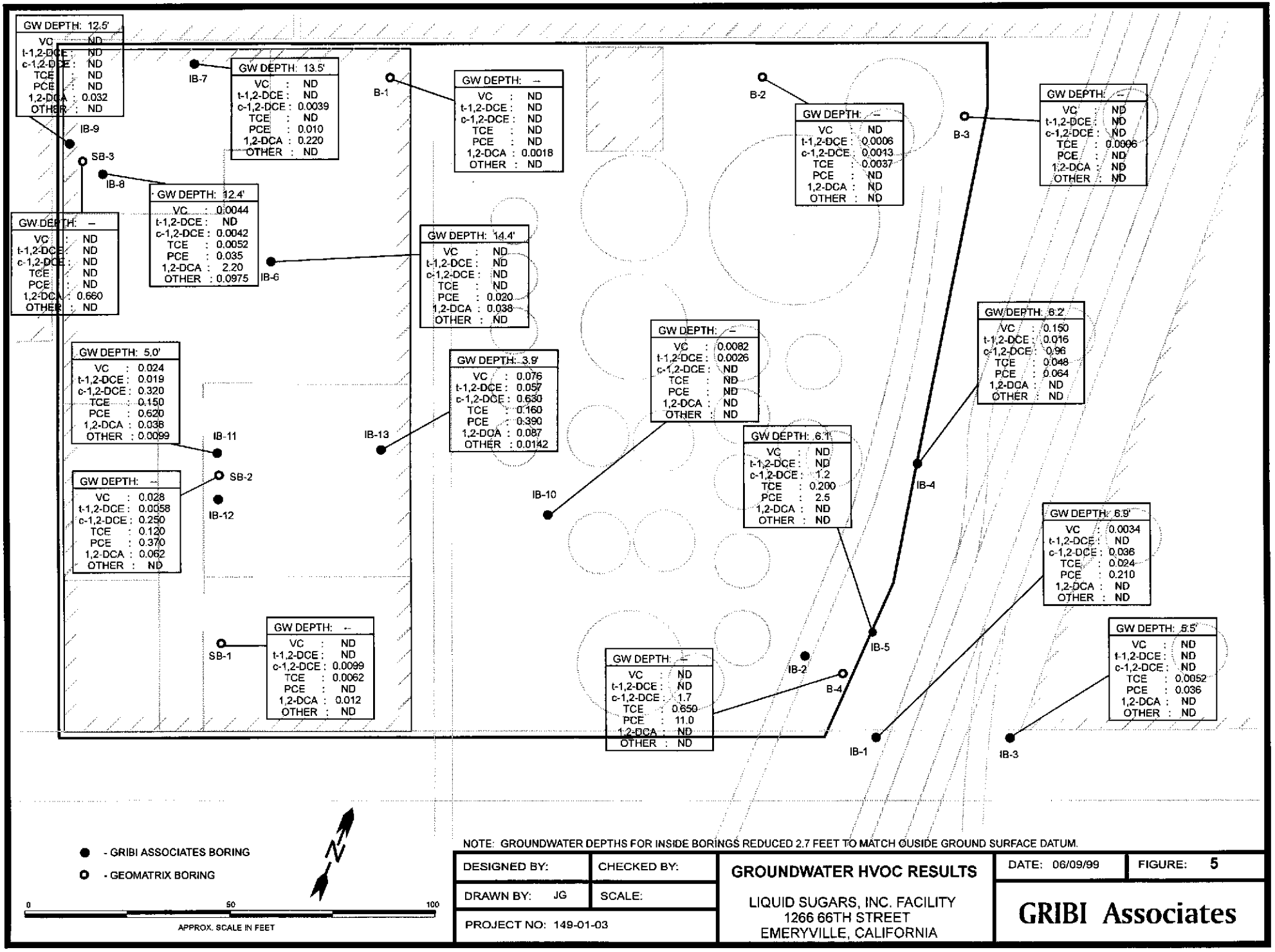
DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE:
PROJECT NO: 149-01-03	

SOIL HVOC RESULTS

LIQUID SUGARS, INC. FACILITY
1266 66TH STREET
EMERYVILLE, CALIFORNIA

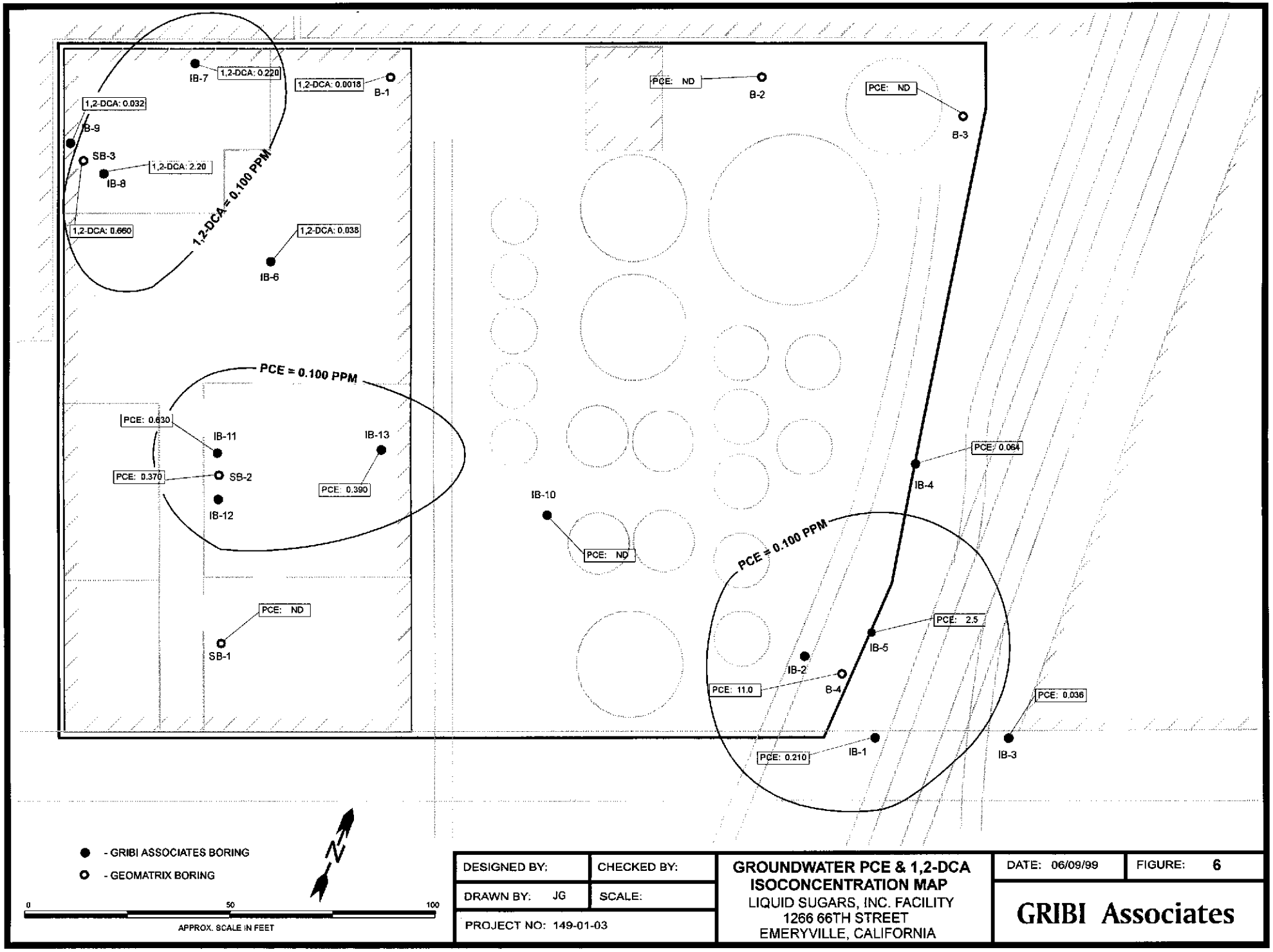
DATE: 06/09/99 | FIGURE: 4

GRIBI Associates



NOTE: GROUNDWATER DEPTHS FOR INSIDE BORINGS REDUCED 2.7 FEET TO MATCH OUSIDE GROUND SURFACE DATUM.

DESIGNED BY:	CHECKED BY:	**GROUNDWATER HVOC RESULTS**	DATE: 06/09/99 / FIGURE: 5
DRAWN BY: JG	SCALE:	LIQUID SUGARS, INC. FACILITY 1266 66TH STREET EMERYVILLE, CALIFORNIA	**GRIBI Associates**
PROJECT NO: 149-01-03			



DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE:
PROJECT NO: 149-01-03	

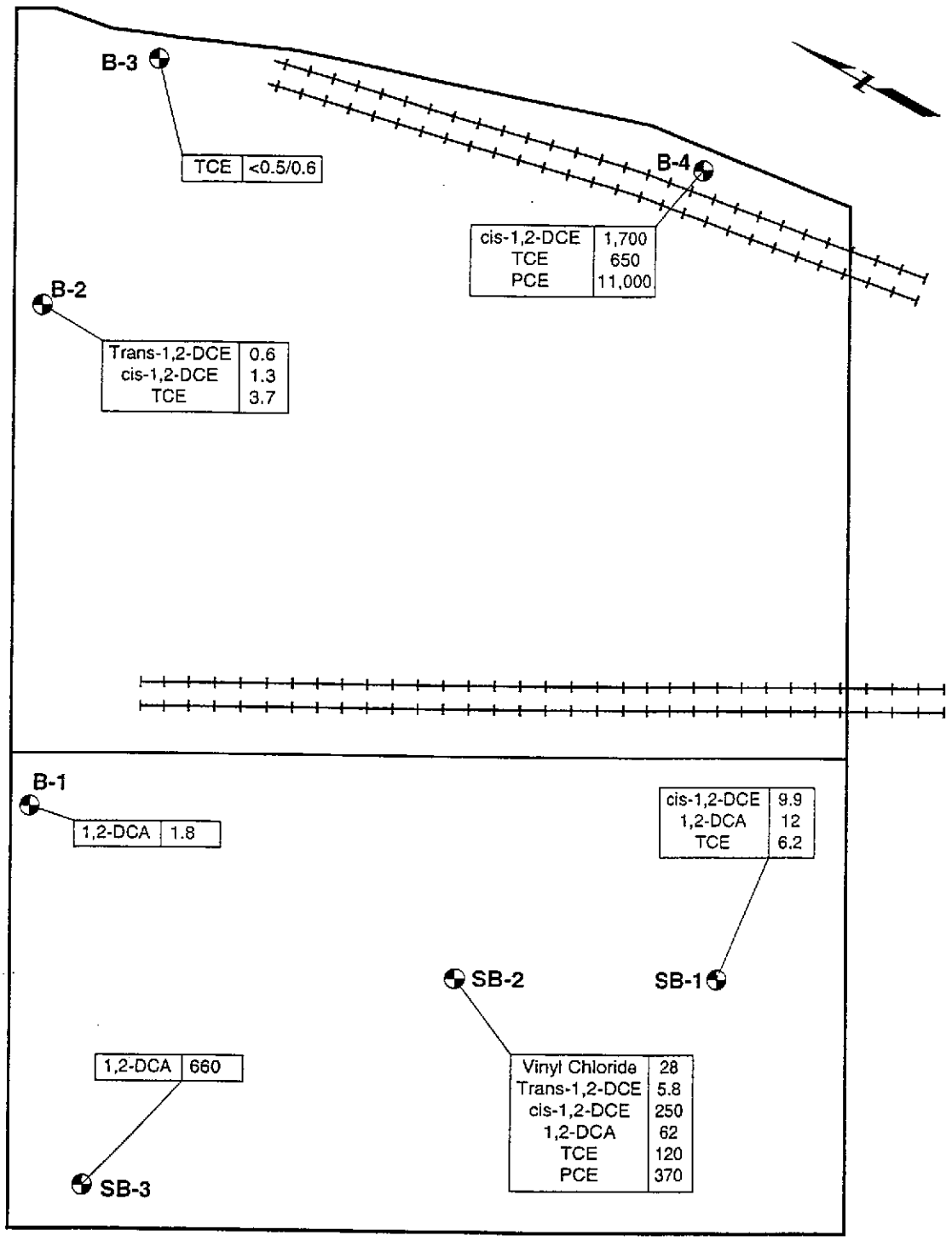
GROUNDWATER PCE & 1,2-DCA ISOCONCENTRATION MAP
LIQUID SUGARS, INC. FACILITY
1266 66TH STREET
EMERYVILLE, CALIFORNIA

DATE: 06/09/99 | FIGURE: 6

GRIBI Associates

APPENDIX A

SUMMARY OF GEOMATRIX SAMPLING RESULTS



Notes:

1) SB-1 through SB-3 analyzed using EPA Method 8260. B-1 through B-4 analyzed using EPA Method 8260A. All samples analyzed by Curtis and Tomkins of Berkeley, California.
2) Only detected analytes are shown.
3) Abbreviations: TCE = Trichloroethene; PCE = Tetrachloroethene; DCE = Dichloroethene; DCA = Dichloroethane.
4) Concentrations in micrograms per liter.

0 30 Feet

S:\5200\5228_fig_01.ai

GEOMATRIX

GRAB GROUNDWATER ANALYTICAL RESULTS
1266 66th Street
Emeryville, California

Project No.
5228

Figure
1

TABLE 1

GRAB GROUNDWATER SAMPLE RESULTS[1]

1266 66th Street
Emeryville, California

Concentrations in micrograms per liter (µg/l)

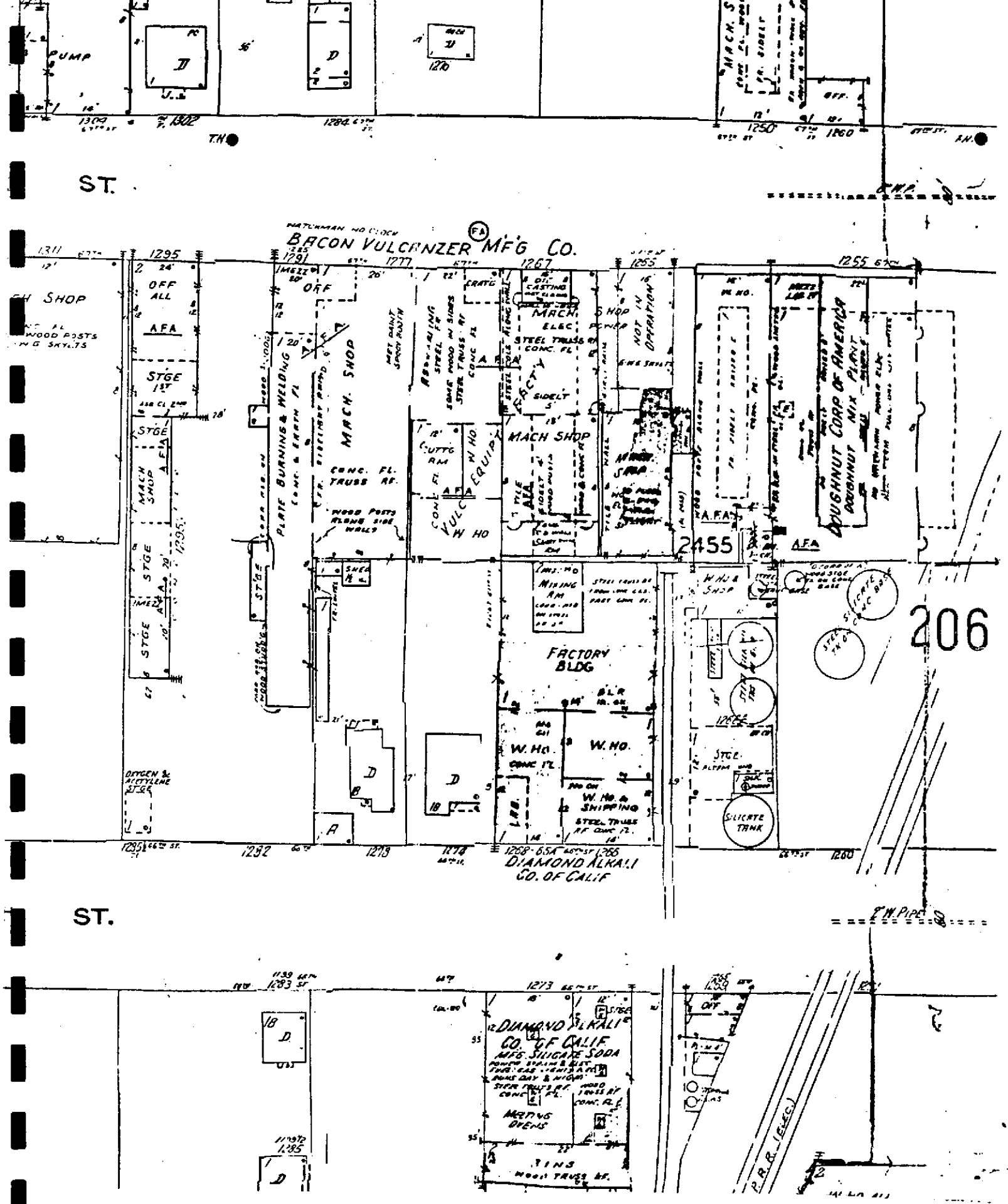
Boring ID	Vinyl Chloride	Trans-1,2-DCE	Cis-1,2-DCE	1,2-DCA	TCE	PCE
SB-1	<10	<5	9.9	12	6.2	<5
SB-2	28	5.8	250	62	120	370
SB-3	<50	<25	<25	660	<25	<25
B-1	<1	<0.5	<0.5	1.8	<0.5	<0.5
B-2	<1	0.6	1.3	<0.5	3.7	<0.5
B-3[2]	<1/<1	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<0.5/0.6	<0.5/<0.5
B-4	<170	<83	1,700	<83	650	11,000

1 Samples collected by Geomatrix Consultants, Inc. and analyzed by Curtis and Tomkins, Ltd., of Berkeley, California using EPA Methods 8260 or 8260A.

2 / indicates duplicate sample results.

APPENDIX B

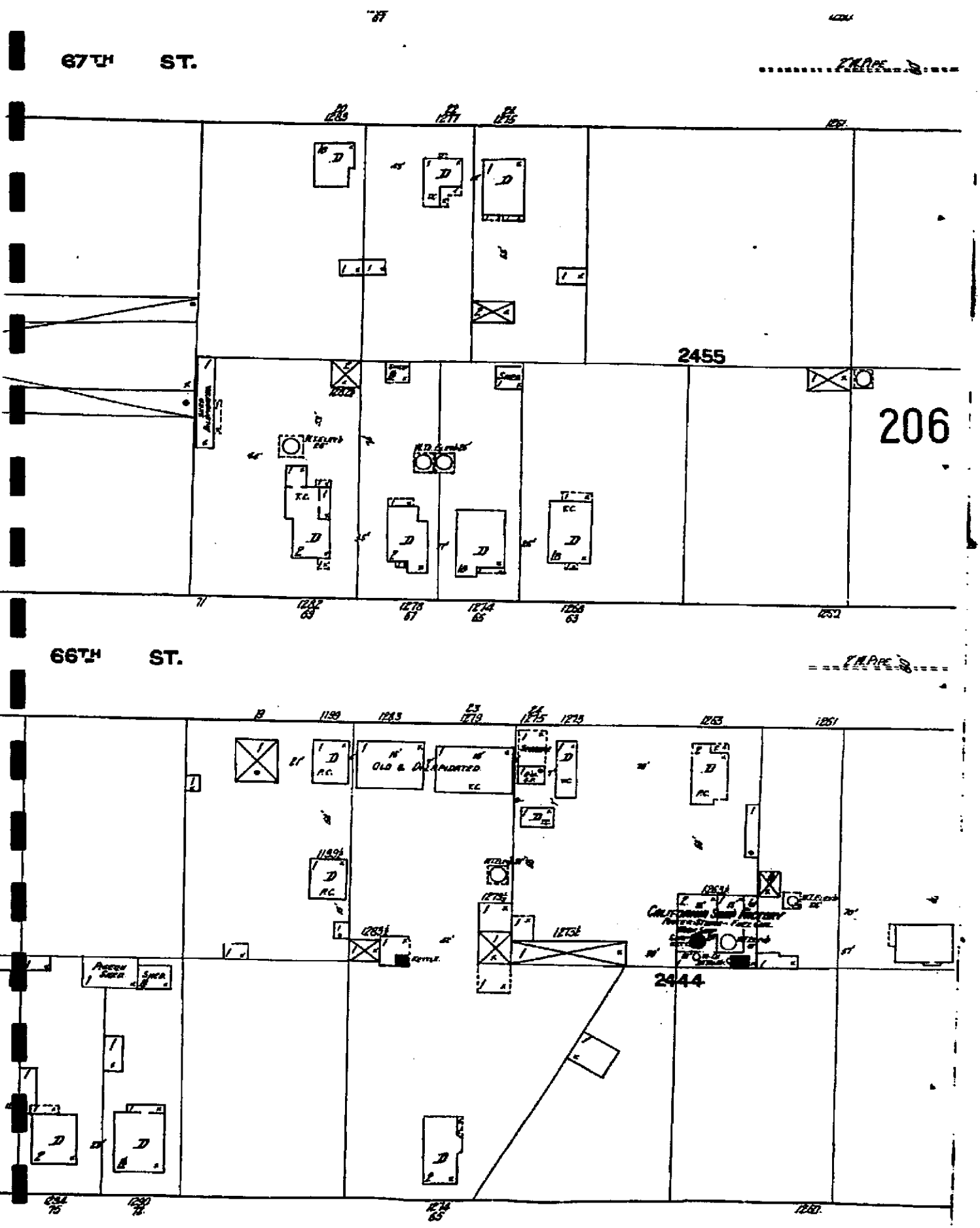
SANBORN FIRE INSURANCE MAPS



SANBORN MAP
1950
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

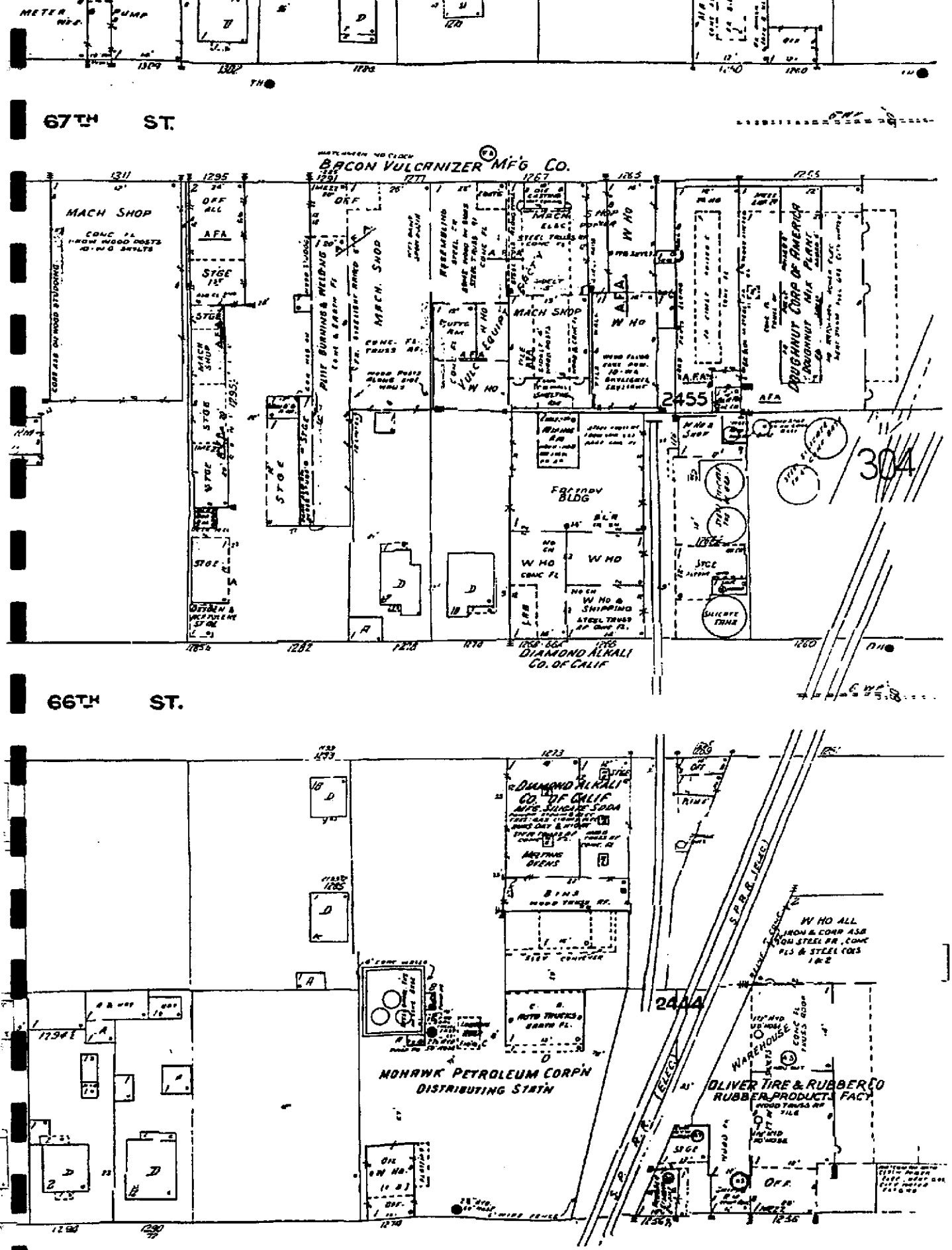
N



SANBORN MAP
1911
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

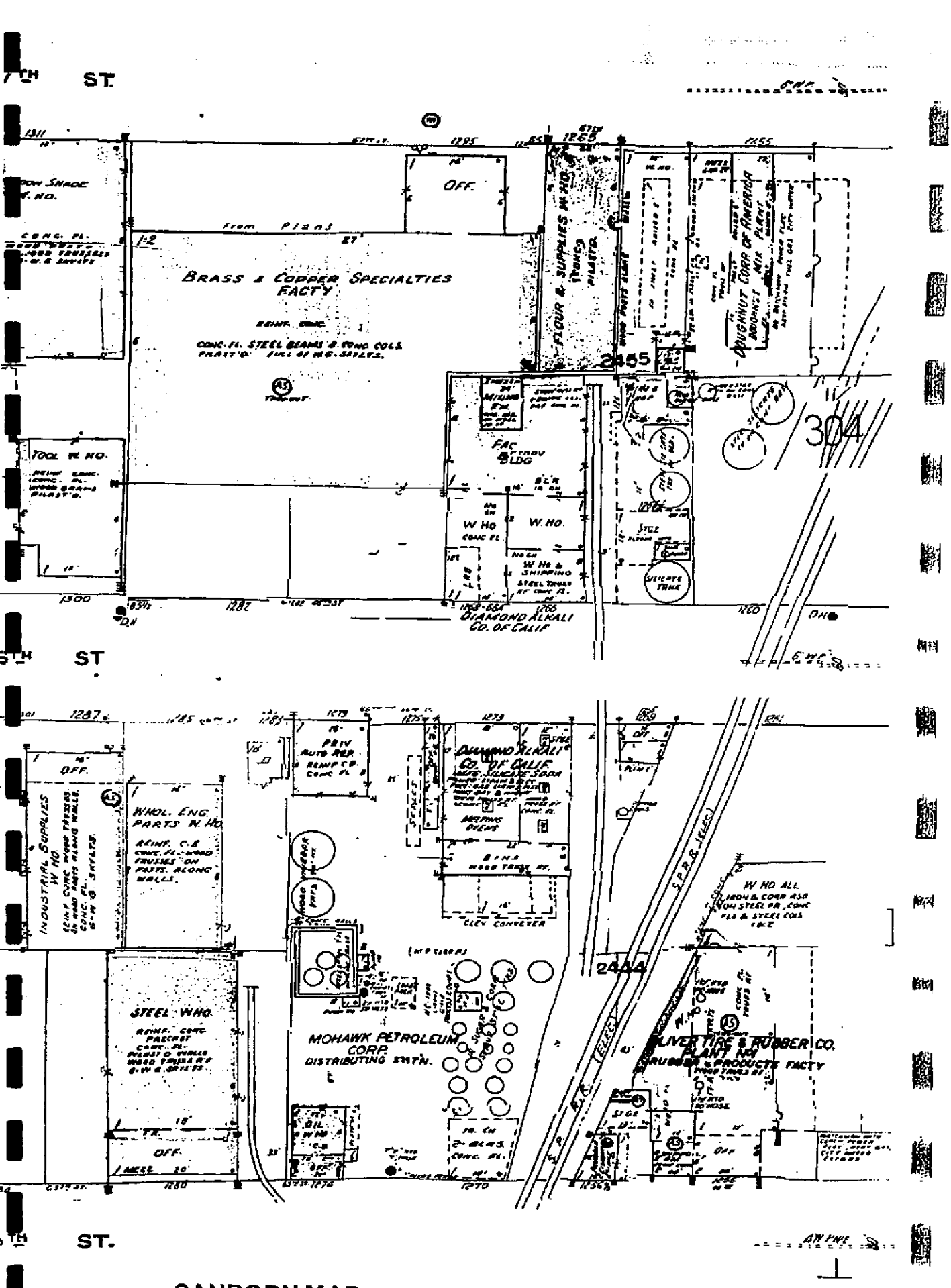
N



SANBORN MAP
1952
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N



SANBORN MAP
1969
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N

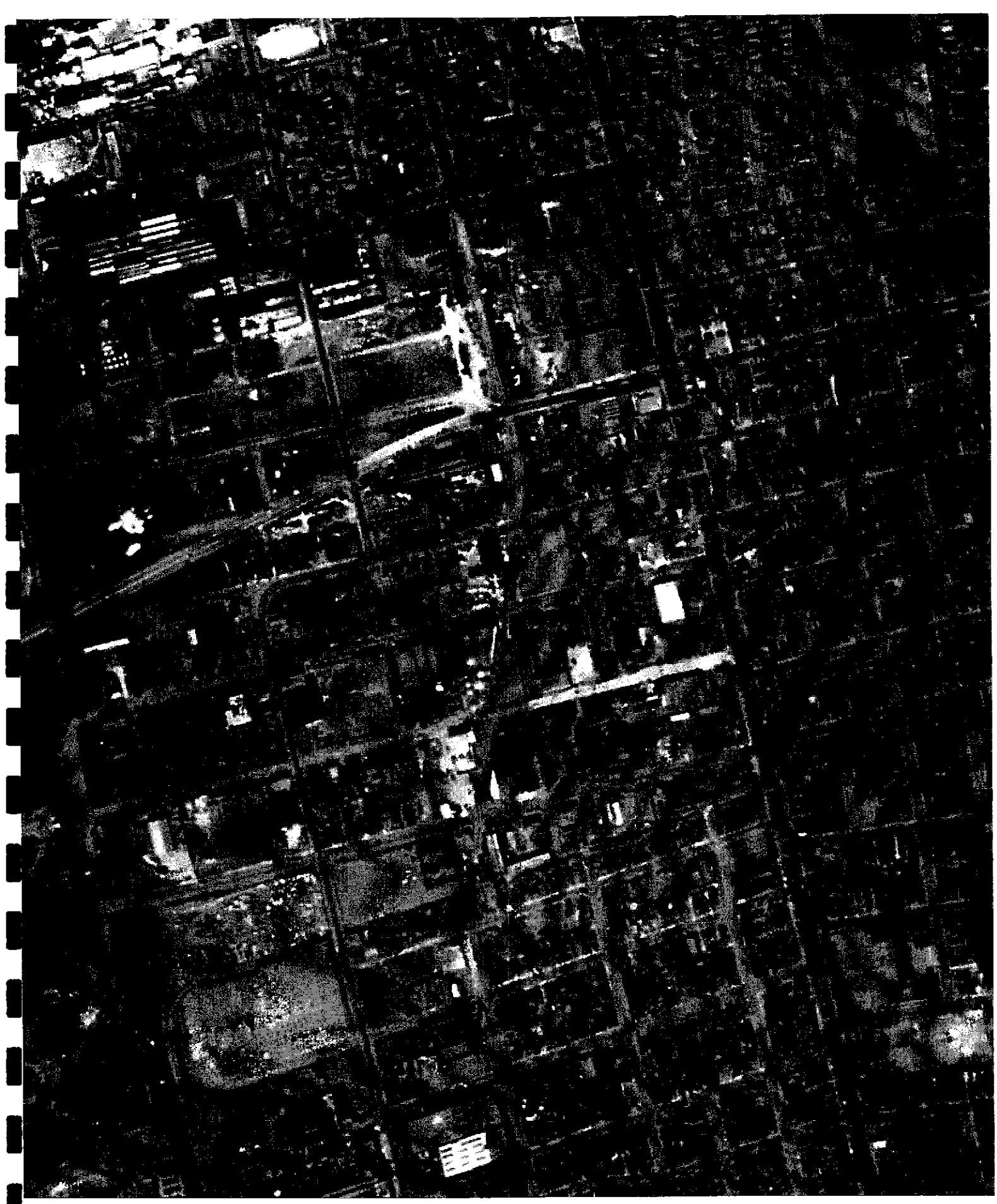
APPENDIX C

HISTORICAL AERIAL PHOTOGRAPHS

AERIAL PHOTOGRAPH
1939
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N



AERIAL PHOTOGRAPH
1946
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

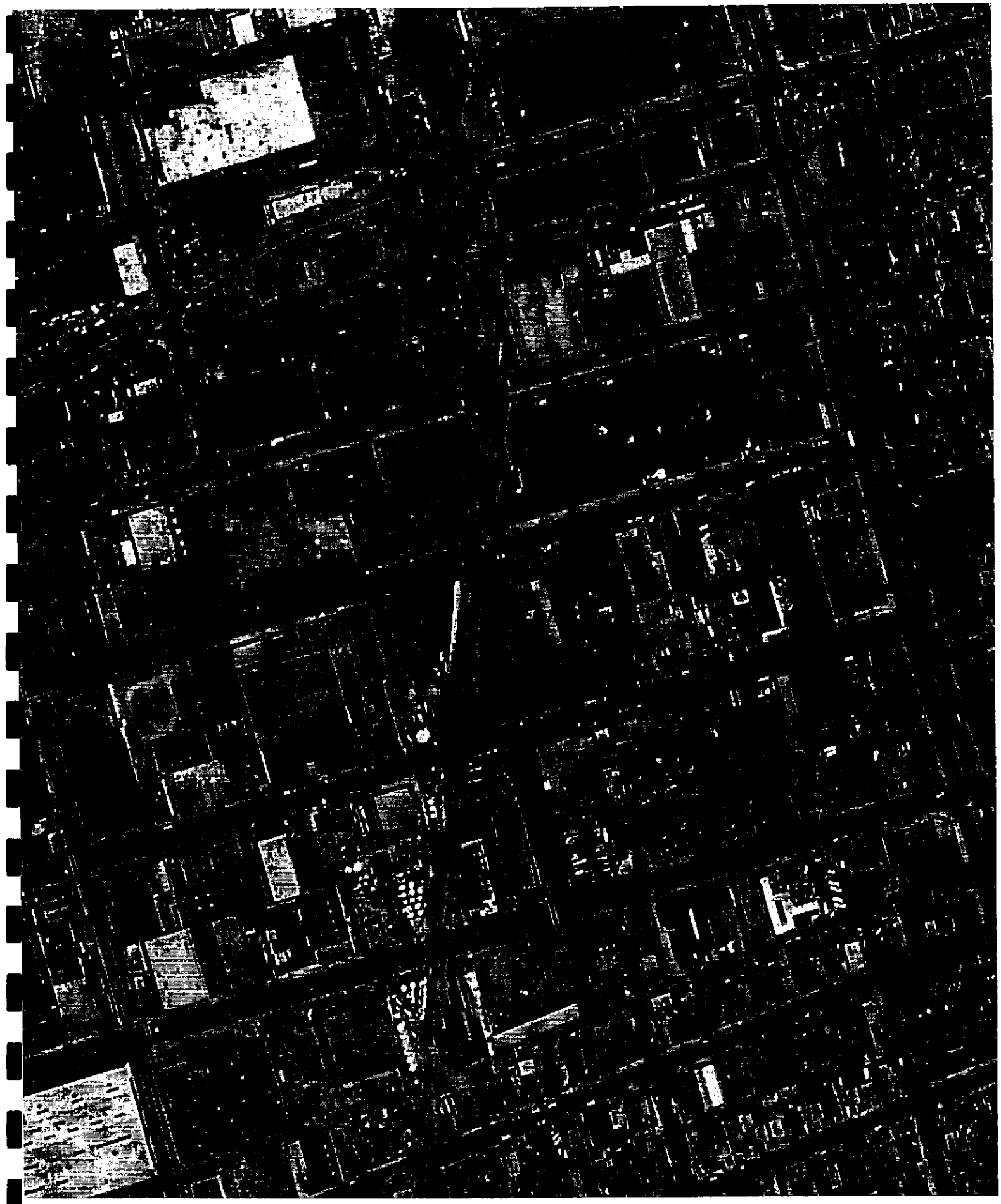
GRIBI ASSOCIATES

N

AERIAL PHOTOGRAPH
1968
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N



AERIAL PHOTOGRAPH
1977
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N

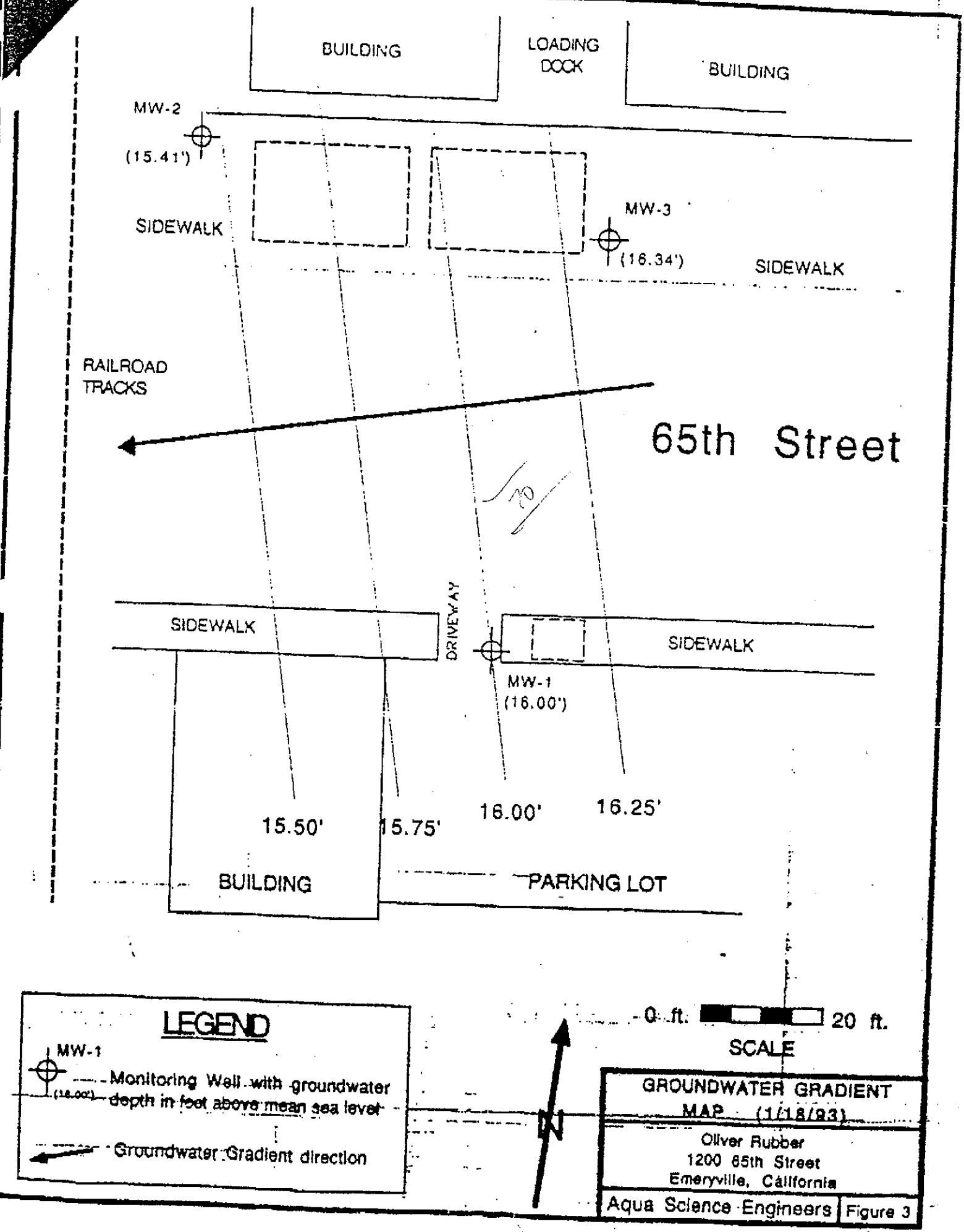
AERIAL PHOTOGRAPH
1989
LIQUID SUGARS, INC.
EMERYVILLE, CALIFORNIA

GRIBI ASSOCIATES

N

APPENDIX D

GROUNDWATER FLOW DIRECTION MAPS FROM OLIVER RUBBER AND MYERS DRUM SITES


BUILDING
LOADING DOCK
BUILDING
MW-2
(15.41')
SIDEWALK
MW-3
(16.34')
SIDEWALK
RAILROAD TRACKS
65th Street
SIDEWALK
DRIVEWAY
SIDEWALK
MW-1
(16.00')
15.50'
15.75'
16.00'
16.25'
BUILDING
PARKING LOT
LEGEND
MW-1
(16.00')
Monitoring Well with groundwater depth in feet above mean sea level
Groundwater Gradient direction
N
0 ft.
20 ft.
SCALE
GROUNDWATER GRADIENT MAP (1/18/93)
Oliver Rubber
1200 65th Street
Emeryville, California
Aqua Science Engineers
Figure 3

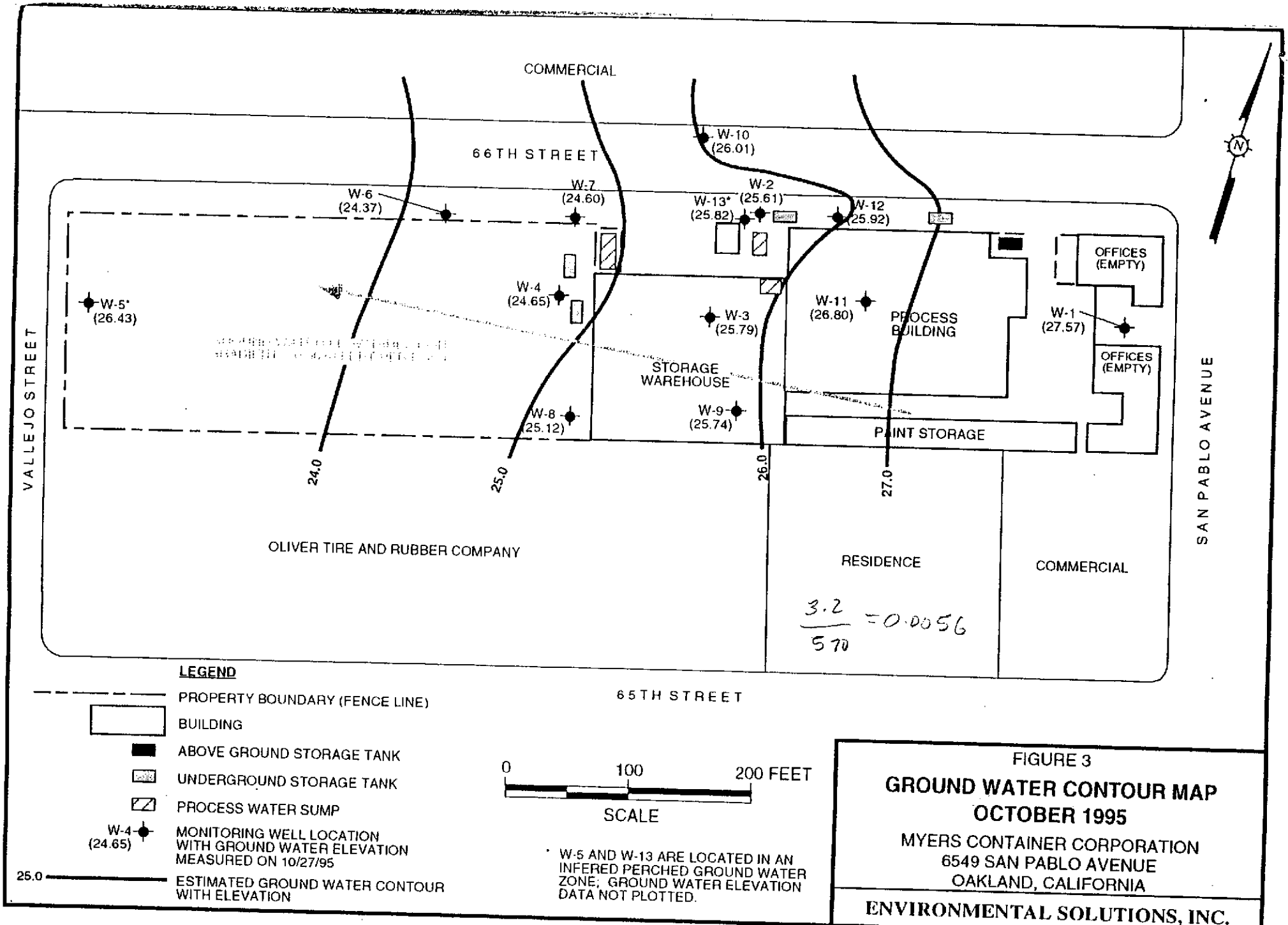


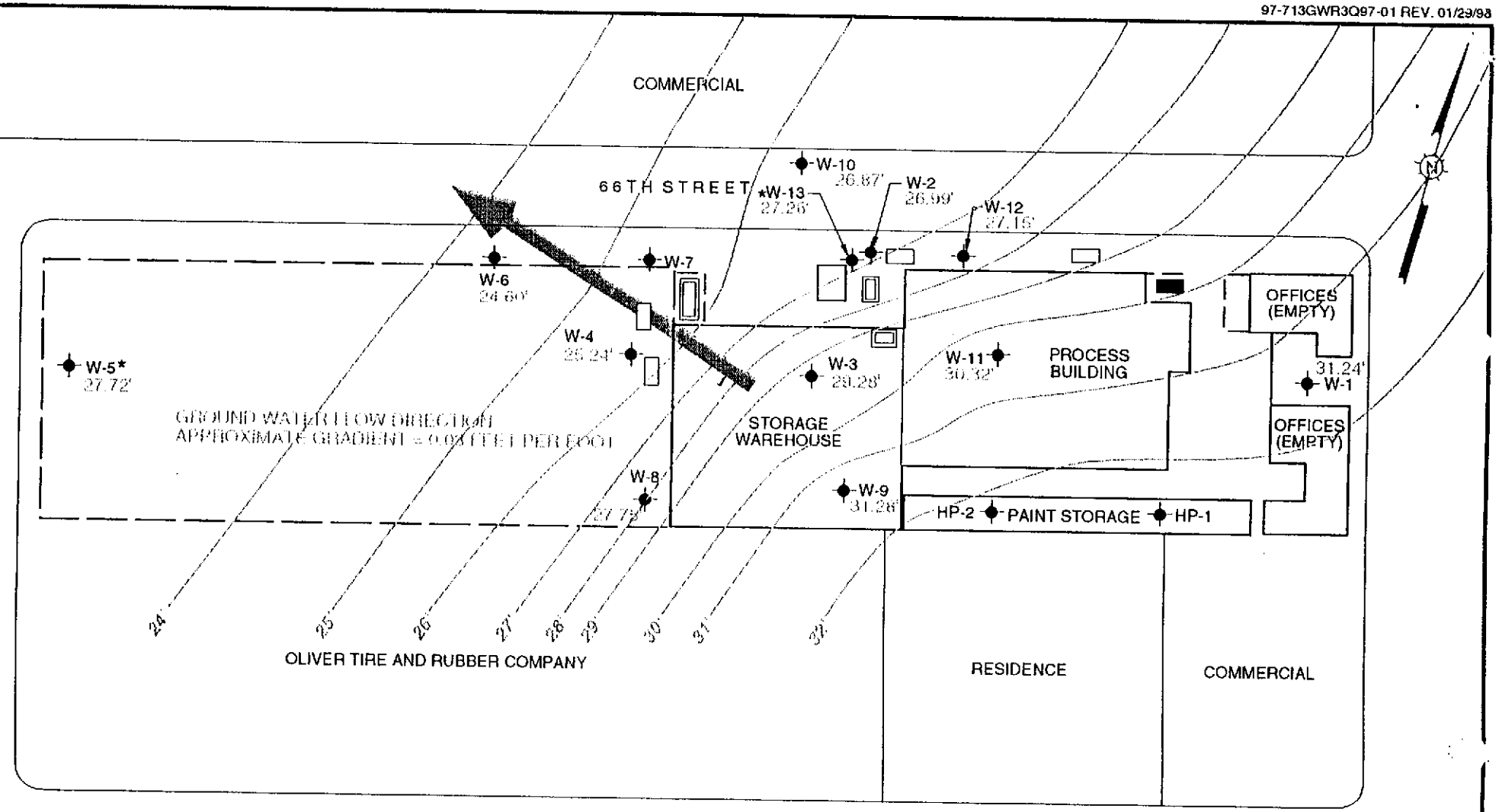
FIGURE 3

GROUND WATER CONTOUR MAP OCTOBER 1995

MYERS CONTAINER CORPORATION
6549 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

97-713GWR3Q97-01 REV. 01/29/98



65TH STREET

210
L

LEGEND

- PROPERTY BOUNDARY (FENCE LINE)
- BUILDING
- ABOVE GROUND STORAGE TANK
- UNDERGROUND STORAGE TANK
- PROCESS WATER SUMP
- W-5 — MONITORING WELL LOCATION
- 25.0 — GROUND WATER CONTOUR (ELEVATION IN FEET ABOVE MEAN SEA LEVEL)

* W-5 AND W-13 ARE LOCATED IN AN INFERRED PERCHED GROUND WATER ZONE, THEIR GROUND WATER DATA ARE NOT INCLUDED IN THE ELEVATION CONTOURS.

0 70 140 FEET

APPROXIMATE SCALE

GROUND WATER CONTOUR MAP DECEMBER 1997

MYERS CONTAINER CORPORATION
6549 SAN PABLO AVENUE
OAKLAND, CALIFORNIA

TRC

FIGURE 3

APPENDIX E

DRILLING PERMIT

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
951 TURNER COURT, SUITE 300
HAYWARD, CA 94545-2651
(510) 670-5543

DATE: 4-27-99

FAX TRANSMITTAL

No. of Pages (including cover): 2

TO	JIM GRIBI
	FAX: (707) 748-7763

FROM	ROBT HALE
	WTR. RES. MGR.
	FAX: (510) 670-5262

Should you have problems receiving this FAX transmittal, please call: (510) 670 5563

SUBECT: PERMIT FOR GEOTECH WELL (DOE6) AT 12666 66TH STREET, EMERYVILLE

TRANSMITTING THE FOLLOWING:

Permit.

RH Hale

PDO - Fax form

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5579 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5368 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1266 66Th STREET
EMERYVILLE CA
(Liquid Sugars, INC)

Easting & Coordinates Source _____ ft. Accuracy ± ___ ft.
SCA _____ ft. CCE _____ ft.
APN _____

CLIENT
Name Liquid Sugars, INC
Address 700 Embarcadero Dr Phone 510/777-4780
City OAKLAND CA Zip 94621

APPLICANT
Name Jim Gribi
Gribi Associates Fax 707/748-7763
Address 1550 Hayes Street Ste 14 Phone 707/748-7743
City Benicia CA Zip 94510

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply	2	Contamination	X
Monitoring	3	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other _____	

DRILLING METHOD

Mud Rotary	2	Air Rotary		Auger	
Cable		Other	Geoprobe		

DRILLER'S LICENSE NO. 402-390 (Kullhaug)

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 12 Maximum
Hole Diameter 2 1/4 in. Depth 20 ft

EST. STARTING DATE 4/28/99
EST. COMPLETION DATE 4/30/99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE James E Gribi DATE 4/22/99
James E. Gribi

FOR OFFICE USE
PERMIT NUMBER 99WR162
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie

F. WELL DESTRUCTION
See attached

G. SPECIAL CONDITIONS

APPROVED [signature] DATE 4-27-99

** TOTAL PAGE.03 **

APPENDIX F

SOIL BORING LOGS

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-1**

GRIBI Associates

BORING LOCATION:
WEST SIDE OF RAILROAD TRACKS

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 19 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.0 Ft. Asphalt & base rock.	
	IB-1.1	2.0 FT		ZERO / 2.0 Ft.	CL	1.0 - 3.0 Ft. Grey CLAY, firm, dense, moist.	
				1.6 / 3.0 Ft.			
	IB-1.2	4.0 FT			CL	3.0 - 6.0 Ft. Grey green gravelly CLAY, firm, dense, moist, <1" gravel, subangular, some dark grey staining.	
5					SM	6.0 - 7.0 Ft. Reddish brown gravelly SILT, sandy, friable, moist, no staining.	
					ML	7.0 - 11.0 Ft. Red brown clayey SILT, slightly GRAVEL, moist, no staining.	
10					GM	11.0 - 14.0 Ft. Red brown to grey green silty gravel, friable, Loc clayey, wet, spotty grey green staining.	
	IB-1.3	13.0 FT		3.8 / 13.0 Ft.			
15					SM	14.0 - 17.0 Ft. Brown reddish silty fine-grained SAND, soft, wet, no staining.	
					CL	17.0 - 19.0 Ft. Reddish brown, silty CLAY, firm, wet, no staining.	
20						END OF BORING	
25						TOTAL DEPTH: 19.0 FEET GROUNDWATER DEPTH: APPROX. 6.9 FEET NOTE: GROUNDWATER WAS ENCOUNTERED AT 11.0 Ft., BUT ROSE TO 6.9 Ft.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-2**

BORING LOCATION: MIDDLE OF RR TRACKS NEXT TO EAST SIDE OF TANKS

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:

LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

GRIBI Associates

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 12 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.5 Ft. Concrete & base rock.	
	IB-2.1	2.0 FT		3.8 / 2.0 Ft.	GM	1.5 - 3.0 Ft. Gray green-dark grey GRAVEL, loose, wet.	
					CL	3.0 - 5.0 Ft. Gray green silty CLAY, moist.	
5	IB-2.2	6.0 FT		78 / 6.0 Ft.	GM	5.0 - 10.5 Ft. Gray green sandy GRAVEL, loose, friable, wet.	
10	IB-2.3	11.5 FT		6.0 / 11.5 Ft.	GM	10.5 - 12.0 Ft. Red brown sandy GRAVEL, wet, no staining.	
						END OF BORING	
15							
20							
25							

TOTAL DEPTH: 12 FEET
GROUNDWATER DEPTH: UNABLE TO RETRIEVE WATER.

NOTE: BORING CAVED IN, UNABLE TO COLLECT WATER SAMPLE.

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-3**

GRIBI Associates

BORING LOCATION:
EAST SIDE OF RR TRACKS, NEAR FABCO.

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:

LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 19 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
					GC	0 - 1.5 Ft. Gray to brown sandy GRAVEL.	
	IB-3.1	2.0 FT		3.8 / 2.0FT	GC	1.5 - 3.5 Ft. Dark gray sandy GRAVEL, moist, loose, slight hydrocarbon odor.	
5					GC	3.5 - 7.0 Ft. Gray green to brown clayey GRAVEL, moist, firm, slight dark gray staining.	
	IB-3.2	5.5 FT		0 / 5.5FT			
					GC	7.0 - 10.0 Ft. Reddish brown sandy clayey GRAVEL, friable to firm, some red brick staining.	
10							
15				0 / 15.0 FT	CL	10.0 - 19.0 Ft. Red brown silty CLAY, slightly gravelly, moist to wet, no odor.	
						END OF BORING	
20							
25						TOTAL DEPTH: 19 FEET GROUNDWATER DEPTH: 5.5 FEET NOTE: GROUNDWATER WAS ENCOUNTERED AT 12 to 15 Ft., BUT ROSE TO 5.5 Ft.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-4**

GRIBI Associates

BORING LOCATION:
EAST OF LST TANKS MOST NORTH

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 17 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.5 Ft. Asphalt & base rock.	
	IB-4.1	3.5 FT		364 / 3.5 FT	CL	1.5 - 4.0 Ft. Gray green to brown silty CLAY, firm, moist, moderate hydrocarbon odor at 3.5 to 4.5.	
5	IB-4.2	5.5 FT		42 / 5.5 FT	ML	4.0 - 8.0 Ft. Light brown to olive SILT, friable, dry, slight to moderate hydrocarbon odor.	
					GM	8.0 - 10.0 Ft. Brown to olive silty GRAVEL, friable, moist to wet, no hydrocarbon odor, sandy.	
10				2.7 / 10 FT			
					ML	10.0 - 17.0 Ft. Red brown clayey SILT, firm, dense, some soft gray wet clayey sand interbeds from 13' to 15'.	
15							
				3.8 / 17 FT		END OF BORING	
20							
25						TOTAL DEPTH: 17 FEET GROUNDWATER DEPTH: APPROX. 6.2 FEET NOTE: GROUNDWATER WAS ENCOUNTERED AT 15.5 Ft., BUT ROSE TO 6.2 Ft.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-5**

GRIBI Associates

BORING LOCATION:
IMMEDIATLY NORTH OF GEOMATRIX B-4

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 16 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.0 Ft. Asphalt & base rock.	
					CL	1.0 - 3.0 Ft. Dark gray silty CLAY, soft to firm, dense, moist, no hydrocarbon odor.	
				0 / 3.0 FT			
	IB-5.1	3.5 FT			CL	3.0 - 5.0 Ft. Grey green silty CLAY, soft to firm, dense, moist, no hydrocarbon odor.	
5				0 / 5.0 FT			
	IB-5.2	6.0 FT			GM	5.0 - 9.0 Ft. Brown to tan clayey GRAVEL, friable, sandy, no hydrocarbon odor or staining.	
				0 / 9.0 FT			
10					ML	9.0 - 14.0 Ft. Red brown clayey SILT, firm, dense, moist to wet.	
15					ML	14.0 - 16.0 Ft. Red brown sandy silt SILT to silty SAND, very fine, wet.	
						END OF BORING	
20							
25						TOTAL DEPTH: 16.0 FEET GROUNDWATER DEPTH: 6.1 FEET NOTE: GROUNDWATER ENCOUNTERED AT APPROX. 13 Ft., BUT ROSE TO 6.1 Ft.	

LOG OF WELL BORING

GRIBI Associates

SHEET _1_ OF _1_

BORING NUMBER : **IB-6**

BORING LOCATION:
OUTSIDE WARM ROOM DOOR

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 20 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 2.0 Ft. Concrete & base rock.	
	IB-6.1	3.5 FT		0 / 3.0 FT	CL	2.0 - 5.0 Ft. Dark gray green silty CLAY, firm, dense, moist, strong swampy odor.	
5	IB-6.2	6.0 FT			ML	5.0 - 6.5 Ft. Brown to grey green gravelly SILT, clayey firm, dense.	
	IB-6.3	8.0 FT			ML	6.5 - 8.0 Ft. Red brown clayey SILT, firm, dense.	
					ML	8.0 - 10.0 Ft. Grey brown gravelly SILT, gravel pea-sized, friable, dry, fertelizer odor.	
10							
					CL	10.0 - 17.0 Ft. Red brown CLAY, some grey staining, firm, dense, moist.	
15	IB-6.4	15.0 FT		6 / 15.0 FT			
					ML	17.0 - 20.0 Ft. Red brown SILT, some small pebbles, soft to firm, wet.	
20				3.8 / 20.0 FT		END OF BORING	
25						TOTAL DEPTH: 20.0 FEET GROUNDWATER DEPTH: DRY, BUT ROSE TO 17.09 Ft. AFTER TWO HOURS. NOTE: GROUNDWATER SLOW RECHARGE.	

LOG OF WELL BORING

GRIBI Associates

SHEET _1_ OF _1_

BORING NUMBER : **IB-7**

BORING LOCATION:
NORTH WALL WARM ROOM

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 18 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.5 Ft. Cement & base rock.	
					CL	1.5 - 6.0 Ft. Dark olive gray to gray CLAY, very firm, dense, wet.	
5	IB-7.1	4.5 FT					
					ML	6.0 - 10.0 Ft. Brown clayey SILT, moist, firm.	
10							
	IB-7.2	12.0 FT		1.6 / 12.0 FT	GM	10.0 - 14.0 Ft. Brown clayey silty GRAVEL, firm to loose, wet.	
15					ML	14.0 - 18.0 Ft. Reddish brown clayey SILT, dense, moist to wet.	
						END OF BORING	
20							
25						TOTAL DEPTH: 18.0 FEET GROUNDWATER DEPTH: 16.18 FEET NOTE: PERCHED WATER AT 1 TO 6 FEET.	

LOG OF WELL BORING

GRIBI Associates

SHEET _1_ OF _1_

BORING NUMBER : **IB-8**

BORING LOCATION:
SOUTHWEST CORNER WARM ROOM

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 18 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.5 Ft. Cement & base rock.	
	IB-8.1	3.0 FT		0 / 3.0 FT	CL	1.5 - 5.0 Ft. Dark gray to black silty CLAY, moist, soft, swampy odor.	
5	IB-8.2	6.0 FT		0 / 6.0 FT	CL	5.0 - 10.0 Ft. Olive green to brown silty CLAY, dense, moist.	
10					CL	10.0 - 13.0 Ft. Brown gravelly CLAY, dense, moist.	
15					ML	13.0 - 17.0 Ft. Reddish brown clayey SILT, dense, moist.	
				0 / 18.0 FT	CL	17.0 - 18.0 Ft. Reddish brown gravelly CLAY, firable, moist.	
						END OF BORING	
20							
25						TOTAL DEPTH: 18.0 FEET GROUNDWATER DEPTH: DRY, BUT ROSE TO 15.10 Ft. AFTER 24 HOURS.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-9**

GRIBI Associates

BORING LOCATION:
WEST WALL WARM ROOM

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 20 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 2.0 Ft. Cement & base rock.	
	IB-9.1	3.0 FT			ML	2.0 - 5.0 Ft. Dark gray clayey SILT, firm, moist, no odor.	
5							
	IB-8.2	6.5 FT			ML	5.0 - 10.0 Ft. Olive green clayey SILT, firm, moist.	
10					ML	10.0 - 12.0 Ft. Reddish brown clayey SILT, firm, moist.	
15					CL	12.0 - 20.0 Ft. Reddish brown gravelly CLAY, dense, firm, moist.	
20						END OF BORING	
25						TOTAL DEPTH: 20.0 FEET GROUNDWATER DEPTH: DRY, BUT ROSE TO 15.2 Ft. AFTER 24 HOURS.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-10**

GRIBI Associates

BORING LOCATION:
EAST OF BUILDING WEST OF ASTS

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 20 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER\ WELL INSTALLATION
						0 - 2.0 Ft. Cement & base rock.	
				0 / 3.0 FT	CL	2.0 - 6.0 Ft. Dark gray silty CLAY, small clasts.	
5							
				0 / 6.0 FT	ML	6.0 - 8.0 Ft. Reddish brown gravelly SILT, wet, loose.	
	IB-10.1	6.5 FT			ML	8.0 - 9.0 Ft. Reddish brown clayey SILT, loose to firm, wet.	
10					GM	9.0 - 12.0 Ft. Gray brown GRAVEL, loose large clasts.	
				0 / 12.0 FT	CL	12.0 - 14.0 Ft. Reddish brown CLAY, firm to dense moist.	
15						14.0 - 20.0 Ft. No soil recovery.	
20						END OF BORING	
25						TOTAL DEPTH: 20.0 FEET GROUNDWATER DEPTH: 12.0 TO 16.0 FEET NOTE: USED MACRO CORE FROM 14 TO 20 Ft. - NO SOIL RECOVERY. GROUNDWATER SAMPLED FROM 12 TO 14 Ft. USING PERISTALTIC PUMP. PURGED APPROX. 2 GALLONS BEFORE SAMPLING.	

LOG OF WELL BORING

SHEET _1_ OF _1_

BORING NUMBER : **IB-11**

GRIBI Associates

BORING LOCATION:
NORTH OF GEOMATRIX SB-2 IN TILE ROOM

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 20 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER\ WELL INSTALLATION
						0 - 1.0 Ft. Gravel & base rock.	
				0 / 3.0 FT	ML	1.0 - 4.0 Ft. Dark gray clayey SILT, soft, firm, moist, swampy odor.	
	IB-11.1	3.5 FT					
5							
	IB-11.2	6.0 FT		0 / 6.0 FT			
					ML	4.0 - 10.0 Ft. Red brown SILT, slightly gravelly, friable, dry to moist.	
10							
					CL	10.0 - 13.0 Ft. Red brown silty CLAY, dense, firm to soft.	
15							
					ML	13.0 - 20.0 Ft. Red brown clayey SILT, soft to firm, moist.	
20						END OF BORING	
25						TOTAL DEPTH: 20.0 FEET GROUNDWATER DEPTH: DRY, BUT ROSE TO 7.7 FEET	

LOG OF WELL BORING

BORING NUMBER : **IB-12**

SHEET _1_ OF _1_

BORING LOCATION: SOUTH OF GEOMATRIX SB-2 BORING IN TILE ROOM

GRIBI Associates

DRILLING CONTRACTOR: KVILHAUG DRILLING

BORING TYPE: INVESTIGATIVE BORING

DRILLING METHOD: GEOPROBE

PROJECT NAME:

LIQUID SUGARS NORTH PARCEL

BOREHOLE DIAMETER: 2-1/2 INCHES

START DATE: 4/28/99

BORING TOTAL DEPTH: 7.5 FEET

PROJECT NUMBER: 149-01-03

COMPLETION DATE: 4/28/99

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER\ WELL INSTALLATION
						0 - 1.0 Ft. Cement & base rock.	
					ML	1.0 - 3.0 Ft. Black clayey SILT, loose, moist.	
	IB-12.1	3.0 FT		0 / 3.0 FT			
5					ML	3.0 - 7.5 Ft. Brown clayey gravelly SILT, firm, moist.	
	IB-12.2	7.0 FT		0 / 7.0 FT			
						END OF BORING	
10							
15							
20							
25						TOTAL DEPTH: 7.5 FEET GROUNDWATER DEPTH: NOT ENCOUNTERD	

LOG OF WELL BORING

GRIBI Associates

BORING NUMBER : **IB-13**

BORING LOCATION:
NEAR EAST WALL IN TILE ROOM

BORING TYPE: INVESTIGATIVE BORING

PROJECT NAME:
LIQUID SUGARS NORTH PARCEL

PROJECT NUMBER: 149-01-03

START DATE: 4/28/99

COMPLETION DATE: 4/28/99

SHEET _1_ OF _1_

DRILLING CONTRACTOR: KVILHAUG DRILLING

DRILLING METHOD: GEOPROBE

BOREHOLE DIAMETER: 2-1/2 INCHES

BORING TOTAL DEPTH: 20 FEET

COMPLETION METHOD: GROUTED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING /DEPTH	USCS	LOG OF MATERIAL	PIEZOMETER/ WELL INSTALLATION
						0 - 1.5 Ft. Cement & base rock.	
					CL	1.5 - 3.5 Ft. Dark gray silty CLAY, moist, soft to firm, slight swampy odor.	
				0 / 3.5 FT			
5							
	IB-13.1	6.0 FT		48 / 6.0 FT	ML	3.5 - 9.0 Ft. Olive green to brown clayey SILT, firm, moist, slight hydrocabon odor.	
	IB-13.2	9.0 FT		42 / 9.0 FT			
10					GM	9.0 - 11.0 Ft. Gray to reddish brown silty sandy GRAVEL, locally clayey, loose, moist to wet, no hydrocarbon odor.	
					ML	11.0 - 16.0 Ft. Reddish brown clayey SILT, soft to firm, moist to wet.	
15				15 / 16.0 FT			
					CL	16.0 - 20.0 Ft. Reddish brown silty CLAY, firm, dense, moist.	
20				0 / 20.0 FT		END OF BORING	
25						TOTAL DEPTH: 20.0 FEET GROUNDWATER DEPTH: 6.6 FEET	

APPENDIX G

LABORATORY DATA REPORT AND CHAIN OF CUSTODY RECORD

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 20, 1999

Jim Gribi
Gribi Associates
1350 Hayes Street, #C-14
Benicia, CA 94510

Subject : 12 Water and 29 Soil samples
Project Name : LSI - Emeryville
Project Number :

Location : Emeryville, CA

Dear Mr. Gribi,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Acculabs - Davis is certified by the State of Arizona (AZ0583) and the State of California (# 2330). If you have any questions regarding procedures or results, please call me at 530-757-0920.

Sincerely,

Tom Kwoka

Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Subject : 12 Water and 29 Soil samples
Project Name : LSI - Emeryville
Project Number :

Sample Log 19964
May 20, 1999

Location : Emeryville, CA

Case Narrative

Analysis: VOCs by EPA 8260B

Sample Name IB-2.1 (2.0) had dibromofluoromethane surrogate recovery below control chart acceptance criteria and Toluene-d8 surrogate recovery above control chart acceptance criteria. These recovery problems are due to sample matrix interferences. The "J" added after Chloromethane and Trichloroethene denotes that the measured concentration is an estimated value below the Method Reporting Level.

Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-1.1 (2.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/11/99

Date Received : 04/30/99
Dilution : 1:2.5
Sample Matrix : Soil
Lab Number : 19964-01

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.012	< 0.012	mg/Kg
Vinyl Chloride	**0.012**	**0.045**	mg/Kg
Bromomethane	0.012	< 0.012	mg/Kg
Chloroethane	0.012	< 0.012	mg/Kg
Trichlorofluoromethane	0.012	< 0.012	mg/Kg
1,1-Dichloroethene	0.012	< 0.012	mg/Kg
Methylene Chloride	0.012	< 0.012	mg/Kg
t-1,2-Dichloroethene	0.012	< 0.012	mg/Kg
1,1-Dichloroethane	0.012	< 0.012	mg/Kg
c-1,2-Dichloroethene	**0.012**	**0.32**	mg/Kg
Chloroform	0.012	< 0.012	mg/Kg
1,1,1-Trichloroethane	0.012	< 0.012	mg/Kg
Carbon Tetrachloride	0.012	< 0.012	mg/Kg
1,2-Dichloroethane	0.012	< 0.012	mg/Kg
Trichloroethene	**0.012**	**0.21**	mg/Kg
1,2-Dichloropropane	0.012	< 0.012	mg/Kg
Bromodichloromethane	0.012	< 0.012	mg/Kg
c-1,3-Dichloropropene	0.012	< 0.012	mg/Kg
t-1,3-Dichloropropene	0.012	< 0.012	mg/Kg
1,1,2-trichloroethane	0.012	< 0.012	mg/Kg
Tetrachloroethene	**0.012**	**0.039**	mg/Kg
Dibromochloromethane	0.012	< 0.012	mg/Kg
Chlorobenzene	0.012	< 0.012	mg/Kg
Bromoform	0.012	< 0.012	mg/Kg
1,1,2,2-Tetrachloroethane	0.012	< 0.012	mg/Kg
1,3-Dichlorobenzene	0.012	< 0.012	mg/Kg
1,4-Dichlorobenzene	0.012	< 0.012	mg/Kg
1,2-Dichlorobenzene	0.012	< 0.012	mg/Kg
Dibromofluoromethane (surr)		112	% Recovery
Toluene - d8 (surr)		86	% Recovery
4-Bromofluorobenzene (surr)		68	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-1.2 (4.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-02

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	**0.0050**	**0.014**	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.18**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.13**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.12**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		100	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		91	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-1.3 (13.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-03

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.0094**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.012**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.028**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		97	% Recovery
Toluene - d8 (surr)		96	% Recovery
4-Bromofluorobenzene (surr)		80	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 20, 1999

Sample Name : **IB-2.1 (2.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:10
Sample Matrix : Soil
Lab Number : 19964-04

Parameter	MRL	Measured Conc.	Units
Chloromethane	**0.050**	**0.0021 J**	mg/Kg
Vinyl Chloride	0.050	<0.050	mg/Kg
Bromomethane	0.050	<0.050	mg/Kg
Chloroethane	0.050	<0.050	mg/Kg
Trichlorofluoromethane	0.050	<0.050	mg/Kg
1,1-Dichloroethene	0.050	<0.050	mg/Kg
Methylene Chloride	0.050	<0.050	mg/Kg
t-1,2-Dichloroethene	0.050	<0.050	mg/Kg
1,1-Dichloroethane	0.050	<0.050	mg/Kg
c-1,2-Dichloroethene	0.050	<0.050	mg/Kg
Chloroform	0.050	<0.050	mg/Kg
1,1,1-Trichloroethane	0.050	<0.050	mg/Kg
Carbon Tetrachloride	0.050	<0.050	mg/Kg
1,2-Dichloroethane	0.050	<0.050	mg/Kg
Trichloroethene	**0.050**	**0.024 J**	mg/Kg
1,2-Dichloropropane	0.050	<0.050	mg/Kg
Bromodichloromethane	0.050	<0.050	mg/Kg
c-1,3-Dichloropropene	0.050	<0.050	mg/Kg
t-1,3-Dichloropropene	0.050	<0.050	mg/Kg
1,1,2-trichloroethane	0.050	<0.050	mg/Kg
Tetrachloroethene	**0.050**	**0.28**	mg/Kg
Dibromochloromethane	0.050	<0.050	mg/Kg
Chlorobenzene	0.050	<0.050	mg/Kg
Bromoform	0.050	<0.050	mg/Kg
1,1,2,2-Tetrachloroethane	0.050	<0.050	mg/Kg
1,3-Dichlorobenzene	0.050	<0.050	mg/Kg
1,4-Dichlorobenzene	0.050	<0.050	mg/Kg
1,2-Dichlorobenzene	0.050	<0.050	mg/Kg
Dibromofluoromethane (surr)		57	% Recovery
Toluene - d8 (surr)		162	% Recovery
4-Bromofluorobenzene (surr)		79	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kweka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 12, 1999

VOCs by EPA 8260B

Sample Name : **IB-2.2 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-05

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	**0.0050**	**0.13**	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	**0.0050**	**0.024**	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.90 E**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.27 E**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.46 E**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		103	% Recovery
Toluene - d8 (surr)		98	% Recovery
4-Bromofluorobenzene (surr)		81	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-2.2 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/11/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19964-05

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.025	< 0.025	mg/Kg
Vinyl Chloride	0.025	< 0.025	mg/Kg
Bromomethane	0.025	< 0.025	mg/Kg
Chloroethane	0.025	< 0.025	mg/Kg
Trichlorofluoromethane	0.025	< 0.025	mg/Kg
1,1-Dichloroethene	0.025	< 0.025	mg/Kg
Methylene Chloride	0.025	< 0.025	mg/Kg
t-1,2-Dichloroethene	0.025	< 0.025	mg/Kg
1,1-Dichloroethane	0.025	< 0.025	mg/Kg
c-1,2-Dichloroethene	**0.025**	**0.33**	mg/Kg
Chloroform	0.025	< 0.025	mg/Kg
1,1,1-Trichloroethane	0.025	< 0.025	mg/Kg
Carbon Tetrachloride	0.025	< 0.025	mg/Kg
1,2-Dichloroethane	0.025	< 0.025	mg/Kg
Trichloroethene	**0.025**	**0.11**	mg/Kg
1,2-Dichloropropane	0.025	< 0.025	mg/Kg
Bromodichloromethane	0.025	< 0.025	mg/Kg
c-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
t-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
1,1,2-trichloroethane	0.025	< 0.025	mg/Kg
Tetrachloroethene	**0.025**	**0.29**	mg/Kg
Dibromochloromethane	0.025	< 0.025	mg/Kg
Chlorobenzene	0.025	< 0.025	mg/Kg
Bromoform	0.025	< 0.025	mg/Kg
1,1,2,2-Tetrachloroethane	0.025	< 0.025	mg/Kg
1,3-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,4-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,2-Dichlorobenzene	0.025	< 0.025	mg/Kg
Dibromofluoromethane (surr)		104	% Recovery
Toluene - d8 (surr)		90	% Recovery
4-Bromofluorobenzene (surr)		71	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-2.3 (11.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-06

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	**0.0050**	**0.0063**	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	**0.0050**	**0.0072**	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	**0.0050**	**0.021**	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.35 E**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.24 E**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.92 E**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		100	% Recovery
Toluene - d8 (surr)		99	% Recovery
4-Bromofluorobenzene (surr)		80	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-2.3 (11.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/11/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19964-06

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.025	< 0.025	mg/Kg
Vinyl Chloride	0.025	< 0.025	mg/Kg
Bromomethane	0.025	< 0.025	mg/Kg
Chloroethane	0.025	< 0.025	mg/Kg
Trichlorofluoromethane	0.025	< 0.025	mg/Kg
1,1-Dichloroethene	0.025	< 0.025	mg/Kg
Methylene Chloride	0.025	< 0.025	mg/Kg
t-1,2-Dichloroethene	0.025	< 0.025	mg/Kg
1,1-Dichloroethane	0.025	< 0.025	mg/Kg
c-1,2-Dichloroethene	**0.025**	**0.099**	mg/Kg
Chloroform	0.025	< 0.025	mg/Kg
1,1,1-Trichloroethane	0.025	< 0.025	mg/Kg
Carbon Tetrachloride	0.025	< 0.025	mg/Kg
1,2-Dichloroethane	0.025	< 0.025	mg/Kg
Trichloroethene	**0.025**	**0.048**	mg/Kg
1,2-Dichloropropane	0.025	< 0.025	mg/Kg
Bromodichloromethane	0.025	< 0.025	mg/Kg
c-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
t-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
1,1,2-trichloroethane	0.025	< 0.025	mg/Kg
Tetrachloroethene	**0.025**	**2.0 E**	mg/Kg
Dibromochloromethane	0.025	< 0.025	mg/Kg
Chlorobenzene	0.025	< 0.025	mg/Kg
Bromoform	0.025	< 0.025	mg/Kg
1,1,2,2-Tetrachloroethane	0.025	< 0.025	mg/Kg
1,3-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,4-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,2-Dichlorobenzene	0.025	< 0.025	mg/Kg
Dibromofluoromethane (surr)		109	% Recovery
Toluene - d8 (surr)		90	% Recovery
4-Bromofluorobenzene (surr)		69	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-2.3 (11.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:50
Sample Matrix : Soil
Lab Number : 19964-06

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.25	<0.25	mg/Kg
Vinyl Chloride	0.25	<0.25	mg/Kg
Bromomethane	0.25	<0.25	mg/Kg
Chloroethane	0.25	<0.25	mg/Kg
Trichlorofluoromethane	0.25	<0.25	mg/Kg
1,1-Dichloroethene	0.25	<0.25	mg/Kg
Methylene Chloride	0.25	<0.25	mg/Kg
t-1,2-Dichloroethene	0.25	<0.25	mg/Kg
1,1-Dichloroethane	0.25	<0.25	mg/Kg
c-1,2-Dichloroethene	0.25	<0.25	mg/Kg
Chloroform	0.25	<0.25	mg/Kg
1,1,1-Trichloroethane	0.25	<0.25	mg/Kg
Carbon Tetrachloride	0.25	<0.25	mg/Kg
1,2-Dichloroethane	0.25	<0.25	mg/Kg
Trichloroethene	0.25	<0.25	mg/Kg
1,2-Dichloropropane	0.25	<0.25	mg/Kg
Bromodichloromethane	0.25	<0.25	mg/Kg
c-1,3-Dichloropropene	0.25	<0.25	mg/Kg
t-1,3-Dichloropropene	0.25	<0.25	mg/Kg
1,1,2-trichloroethane	0.25	<0.25	mg/Kg
Tetrachloroethene	**0.25**	**2.6**	mg/Kg
Dibromochloromethane	0.25	<0.25	mg/Kg
Chlorobenzene	0.25	<0.25	mg/Kg
Bromoform	0.25	<0.25	mg/Kg
1,1,2,2-Tetrachloroethane	0.25	<0.25	mg/Kg
1,3-Dichlorobenzene	0.25	<0.25	mg/Kg
1,4-Dichlorobenzene	0.25	<0.25	mg/Kg
1,2-Dichlorobenzene	0.25	<0.25	mg/Kg
Dibromofluoromethane (surr)		101	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		74	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-3.1 (2.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-07

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.017**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		108	% Recovery
Toluene - d8 (surr)		83	% Recovery
4-Bromofluorobenzene (surr)		72	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-3.2 (5.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-08

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.068**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		98	% Recovery
Toluene - d8 (surr)		87	% Recovery
4-Bromofluorobenzene (surr)		69	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-4.1 (3.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/11/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19964-09

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.025	< 0.025	mg/Kg
Vinyl Chloride	**0.025**	**0.039**	mg/Kg
Bromomethane	0.025	< 0.025	mg/Kg
Chloroethane	0.025	< 0.025	mg/Kg
Trichlorofluoromethane	0.025	< 0.025	mg/Kg
1,1-Dichloroethene	0.025	< 0.025	mg/Kg
Methylene Chloride	0.025	< 0.025	mg/Kg
t-1,2-Dichloroethene	0.025	< 0.025	mg/Kg
1,1-Dichloroethane	0.025	< 0.025	mg/Kg
c-1,2-Dichloroethene	**0.025**	**0.82**	mg/Kg
Chloroform	0.025	< 0.025	mg/Kg
1,1,1-Trichloroethane	0.025	< 0.025	mg/Kg
Carbon Tetrachloride	0.025	< 0.025	mg/Kg
1,2-Dichloroethane	0.025	< 0.025	mg/Kg
Trichloroethene	**0.025**	**0.025**	mg/Kg
1,2-Dichloropropane	0.025	< 0.025	mg/Kg
Bromodichloromethane	0.025	< 0.025	mg/Kg
c-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
t-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
1,1,2-trichloroethane	0.025	< 0.025	mg/Kg
Tetrachloroethene	**0.025**	**0.048**	mg/Kg
Dibromochloromethane	0.025	< 0.025	mg/Kg
Chlorobenzene	0.025	< 0.025	mg/Kg
Bromoform	0.025	< 0.025	mg/Kg
1,1,2,2-Tetrachloroethane	0.025	< 0.025	mg/Kg
1,3-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,4-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,2-Dichlorobenzene	0.025	< 0.025	mg/Kg
Dibromofluoromethane (surr)		113	% Recovery
Toluene - d8 (surr)		88	% Recovery
4-Bromofluorobenzene (surr)		70	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-4.2 (5.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/11/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19964-10

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.025	< 0.025	mg/Kg
Vinyl Chloride	0.025	< 0.025	mg/Kg
Bromomethane	0.025	< 0.025	mg/Kg
Chloroethane	0.025	< 0.025	mg/Kg
Trichlorofluoromethane	0.025	< 0.025	mg/Kg
1,1-Dichloroethene	0.025	< 0.025	mg/Kg
Methylene Chloride	0.025	< 0.025	mg/Kg
t-1,2-Dichloroethene	0.025	< 0.025	mg/Kg
1,1-Dichloroethane	0.025	< 0.025	mg/Kg
c-1,2-Dichloroethene	**0.025**	**0.37**	mg/Kg
Chloroform	0.025	< 0.025	mg/Kg
1,1,1-Trichloroethane	0.025	< 0.025	mg/Kg
Carbon Tetrachloride	0.025	< 0.025	mg/Kg
1,2-Dichloroethane	0.025	< 0.025	mg/Kg
Trichloroethene	0.025	< 0.025	mg/Kg
1,2-Dichloropropane	0.025	< 0.025	mg/Kg
Bromodichloromethane	0.025	< 0.025	mg/Kg
c-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
t-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
1,1,2-trichloroethane	0.025	< 0.025	mg/Kg
Tetrachloroethene	0.025	< 0.025	mg/Kg
Dibromochloromethane	0.025	< 0.025	mg/Kg
Chlorobenzene	0.025	< 0.025	mg/Kg
Bromoform	0.025	< 0.025	mg/Kg
1,1,2,2-Tetrachloroethane	0.025	< 0.025	mg/Kg
1,3-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,4-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,2-Dichlorobenzene	0.025	< 0.025	mg/Kg
Dibromofluoromethane (surr)		103	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		71	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-5.1 (3.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-11

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	**0.0050**	**0.0090**	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.078**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.0080**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.010**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		100	% Recovery
Toluene - d8 (surr)		90	% Recovery
4-Bromofluorobenzene (surr)		74	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-5.2 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/04/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-12

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.044**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.0073**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.025**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		91	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-6.4 (15.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/05/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-16

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	**0.0050**	**0.012**	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.011**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		116	% Recovery
Toluene - d8 (surr)		76	% Recovery
4-Bromofluorobenzene (surr)		61	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-7.1 (4.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/05/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-17

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		110	% Recovery
Toluene - d8 (surr)		75	% Recovery
4-Bromofluorobenzene (surr)		66	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 07, 1999

Sample Name : **IB-7.2 (12.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/05/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-18

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	**0.0050**	**0.042**	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.042**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		106	% Recovery
Toluene - d8 (surr)		84	% Recovery
4-Bromofluorobenzene (surr)		70	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-8.1 (3.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-19

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		106	% Recovery
Toluene - d8 (surr)		82	% Recovery
4-Bromofluorobenzene (surr)		72	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-8.2 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-20

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		99	% Recovery
Toluene - d8 (surr)		95	% Recovery
4-Bromofluorobenzene (surr)		79	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-9.1 (3.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-21

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		105	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		78	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-9.2 (6.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-22

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		96	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		75	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-10.1 (6.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-23

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		102	% Recovery
Toluene - d8 (surr)		90	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-11.1 (3.5)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/03
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-24

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.020**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		98	% Recovery
Toluene - d8 (surr)		94	% Recovery
4-Bromofluorobenzene (surr)		78	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-11.2 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-25

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		103	% Recovery
Toluene - d8 (surr)		94	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-12.1 (3.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-26

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.0087**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		104	% Recovery
Toluene - d8 (surr)		97	% Recovery
4-Bromofluorobenzene (surr)		80	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-12.2 (7.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/07/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-27

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	0.0050	<0.0050	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	0.0050	<0.0050	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		109	% Recovery
Toluene - d8 (surr)		100	% Recovery
4-Bromofluorobenzene (surr)		81	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-13.1 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/08/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-28

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	**0.0050**	**0.18**	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	**0.0050**	**0.011**	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.94 E**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.25 E**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**1.4 E**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		117	% Recovery
Toluene - d8 (surr)		84	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 19, 1999

VOCs by EPA 8260B

Sample Name : **IB-13.1 (6.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Soil
Lab Number : 19964-28

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.025	< 0.025	mg/Kg
Vinyl Chloride	0.025	< 0.025	mg/Kg
Bromomethane	0.025	< 0.025	mg/Kg
Chloroethane	0.025	< 0.025	mg/Kg
Trichlorofluoromethane	0.025	< 0.025	mg/Kg
1,1-Dichloroethene	0.025	< 0.025	mg/Kg
Methylene Chloride	0.025	< 0.025	mg/Kg
t-1,2-Dichloroethene	0.025	< 0.025	mg/Kg
1,1-Dichloroethane	0.025	< 0.025	mg/Kg
c-1,2-Dichloroethene	**0.025**	**0.039**	mg/Kg
Chloroform	0.025	< 0.025	mg/Kg
1,1,1-Trichloroethane	0.025	< 0.025	mg/Kg
Carbon Tetrachloride	0.025	< 0.025	mg/Kg
1,2-Dichloroethane	0.025	< 0.025	mg/Kg
Trichloroethene	0.025	< 0.025	mg/Kg
1,2-Dichloropropane	0.025	< 0.025	mg/Kg
Bromodichloromethane	0.025	< 0.025	mg/Kg
c-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
t-1,3-Dichloropropene	0.025	< 0.025	mg/Kg
1,1,2-trichloroethane	0.025	< 0.025	mg/Kg
Tetrachloroethene	**0.025**	**0.078**	mg/Kg
Dibromochloromethane	0.025	< 0.025	mg/Kg
Chlorobenzene	0.025	< 0.025	mg/Kg
Bromoform	0.025	< 0.025	mg/Kg
1,1,2,2-Tetrachloroethane	0.025	< 0.025	mg/Kg
1,3-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,4-Dichlorobenzene	0.025	< 0.025	mg/Kg
1,2-Dichlorobenzene	0.025	< 0.025	mg/Kg
Dibromofluoromethane (surr)		101	% Recovery
Toluene - d8 (surr)		105	% Recovery
4-Bromofluorobenzene (surr)		86	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-13.2 (9.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/08/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Soil
Lab Number : 19964-29

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.0050	<0.0050	mg/Kg
Vinyl Chloride	0.0050	<0.0050	mg/Kg
Bromomethane	0.0050	<0.0050	mg/Kg
Chloroethane	0.0050	<0.0050	mg/Kg
Trichlorofluoromethane	0.0050	<0.0050	mg/Kg
1,1-Dichloroethene	0.0050	<0.0050	mg/Kg
Methylene Chloride	0.0050	<0.0050	mg/Kg
t-1,2-Dichloroethene	0.0050	<0.0050	mg/Kg
1,1-Dichloroethane	0.0050	<0.0050	mg/Kg
c-1,2-Dichloroethene	**0.0050**	**0.13**	mg/Kg
Chloroform	0.0050	<0.0050	mg/Kg
1,1,1-Trichloroethane	0.0050	<0.0050	mg/Kg
Carbon Tetrachloride	0.0050	<0.0050	mg/Kg
1,2-Dichloroethane	0.0050	<0.0050	mg/Kg
Trichloroethene	**0.0050**	**0.041**	mg/Kg
1,2-Dichloropropane	0.0050	<0.0050	mg/Kg
Bromodichloromethane	0.0050	<0.0050	mg/Kg
c-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
t-1,3-Dichloropropene	0.0050	<0.0050	mg/Kg
1,1,2-trichloroethane	0.0050	<0.0050	mg/Kg
Tetrachloroethene	**0.0050**	**0.46 E**	mg/Kg
Dibromochloromethane	0.0050	<0.0050	mg/Kg
Chlorobenzene	0.0050	<0.0050	mg/Kg
Bromoform	0.0050	<0.0050	mg/Kg
1,1,2,2-Tetrachloroethane	0.0050	<0.0050	mg/Kg
1,3-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,4-Dichlorobenzene	0.0050	<0.0050	mg/Kg
1,2-Dichlorobenzene	0.0050	<0.0050	mg/Kg
Dibromofluoromethane (surr)		118	% Recovery
Toluene - d8 (surr)		85	% Recovery
4-Bromofluorobenzene (surr)		73	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 19, 1999

Sample Name : **IB-13.2 (9.0)**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:2
Sample Matrix : Soil
Lab Number : 19964-29

Parameter	MRL	Measured Conc.	Units
Chloromethane	0.010	< 0.010	mg/Kg
Vinyl Chloride	0.010	< 0.010	mg/Kg
Bromomethane	0.010	< 0.010	mg/Kg
Chloroethane	0.010	< 0.010	mg/Kg
Trichlorofluoromethane	0.010	< 0.010	mg/Kg
1,1-Dichloroethene	0.010	< 0.010	mg/Kg
Methylene Chloride	0.010	< 0.010	mg/Kg
t-1,2-Dichloroethene	0.010	< 0.010	mg/Kg
1,1-Dichloroethane	0.010	< 0.010	mg/Kg
c-1,2-Dichloroethene	**0.010**	**0.025**	mg/Kg
Chloroform	0.010	< 0.010	mg/Kg
1,1,1-Trichloroethane	0.010	< 0.010	mg/Kg
Carbon Tetrachloride	0.010	< 0.010	mg/Kg
1,2-Dichloroethane	0.010	< 0.010	mg/Kg
Trichloroethene	0.010	< 0.010	mg/Kg
1,2-Dichloropropane	0.010	< 0.010	mg/Kg
Bromodichloromethane	0.010	< 0.010	mg/Kg
c-1,3-Dichloropropene	0.010	< 0.010	mg/Kg
t-1,3-Dichloropropene	0.010	< 0.010	mg/Kg
1,1,2-trichloroethane	0.010	< 0.010	mg/Kg
Tetrachloroethene	**0.010**	**0.10**	mg/Kg
Dibromochloromethane	0.010	< 0.010	mg/Kg
Chlorobenzene	0.010	< 0.010	mg/Kg
Bromoform	0.010	< 0.010	mg/Kg
1,1,2,2-Tetrachloroethane	0.010	< 0.010	mg/Kg
1,3-Dichlorobenzene	0.010	< 0.010	mg/Kg
1,4-Dichlorobenzene	0.010	< 0.010	mg/Kg
1,2-Dichlorobenzene	0.010	< 0.010	mg/Kg
Dibromofluoromethane (surr)		97	% Recovery
Toluene - d8 (surr)		101	% Recovery
4-Bromofluorobenzene (surr)		87	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-1W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-30

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	**1.0**	**3.4**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	**0.50**	**36**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	0.50	<0.50	ug/L
Trichloroethene	**0.50**	**24**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**200 E**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		110	% Recovery
Toluene - d8 (surr)		73	% Recovery
4-Bromofluorobenzene (surr)		63	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 13, 1999

Sample Name : **IB-1W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/12/99

Date Received : 04/30/99
Dilution : 1:10
Sample Matrix : Water
Lab Number : 19964-30

Parameter	MRL	Measured Conc.	Units
Chloromethane	10	<10	ug/L
Vinyl Chloride	10	<10	ug/L
Bromomethane	10	<10	ug/L
Chloroethane	10	<10	ug/L
Trichlorofluoromethane	10	<10	ug/L
1,1-Dichloroethene	5.0	<5.0	ug/L
Methylene Chloride	5.0	<5.0	ug/L
t-1,2-Dichloroethene	5.0	<5.0	ug/L
1,1-Dichloroethane	5.0	<5.0	ug/L
c-1,2-Dichloroethene	**5.0**	**27**	ug/L
Chloroform	5.0	<5.0	ug/L
1,1,1-Trichloroethane	5.0	<5.0	ug/L
Carbon Tetrachloride	5.0	<5.0	ug/L
1,2-Dichloroethane	5.0	<5.0	ug/L
Trichloroethene	5.0	<5.0	ug/L
1,2-Dichloropropane	5.0	<5.0	ug/L
Bromodichloromethane	5.0	<5.0	ug/L
c-1,3-Dichloropropene	5.0	<5.0	ug/L
t-1,3-Dichloropropene	5.0	<5.0	ug/L
1,1,2-trichloroethane	5.0	<5.0	ug/L
Tetrachloroethene	**5.0**	**210**	ug/L
Dibromochloromethane	5.0	<5.0	ug/L
Chlorobenzene	5.0	<5.0	ug/L
Bromoform	5.0	<5.0	ug/L
1,1,2,2-Tetrachloroethane	5.0	<5.0	ug/L
1,3-Dichlorobenzene	5.0	<5.0	ug/L
1,4-Dichlorobenzene	5.0	<5.0	ug/L
1,2-Dichlorobenzene	5.0	<5.0	ug/L
Dibromofluoromethane (surr)		101	% Recovery
Toluene - d8 (surr)		85	% Recovery
4-Bromofluorobenzene (surr)		74	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-3W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-31

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	1.0	<1.0	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	0.50	<0.50	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	0.50	<0.50	ug/L
Trichloroethene	**0.50**	**5.2**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**36**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		105	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		75	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-4W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-32

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	**1.0**	**200 E**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	**0.50**	**16**	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	**0.50**	**670 E**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	0.50	<0.50	ug/L
Trichloroethene	**0.50**	**48**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**64**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		114	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		71	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 13, 1999

Sample Name : **IB-4W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/12/99

Date Received : 04/30/99
Dilution : 1:25
Sample Matrix : Water
Lab Number : 19964-32

Parameter	MRL	Measured Conc.	Units
Chloromethane	25	<25	ug/L
Vinyl Chloride	**25**	**150**	ug/L
Bromomethane	25	<25	ug/L
Chloroethane	25	<25	ug/L
Trichlorofluoromethane	25	<25	ug/L
1,1-Dichloroethene	12	<12	ug/L
Methylene Chloride	12	<12	ug/L
t-1,2-Dichloroethene	12	<12	ug/L
1,1-Dichloroethane	12	<12	ug/L
c-1,2-Dichloroethene	**12**	**940**	ug/L
Chloroform	12	<12	ug/L
1,1,1-Trichloroethane	12	<12	ug/L
Carbon Tetrachloride	12	<12	ug/L
1,2-Dichloroethane	12	<12	ug/L
Trichloroethene	12	<12	ug/L
1,2-Dichloropropane	12	<12	ug/L
Bromodichloromethane	12	<12	ug/L
c-1,3-Dichloropropene	12	<12	ug/L
t-1,3-Dichloropropene	12	<12	ug/L
1,1,2-trichloroethane	12	<12	ug/L
Tetrachloroethene	12	<12	ug/L
Dibromochloromethane	12	<12	ug/L
Chlorobenzene	12	<12	ug/L
Bromoform	12	<12	ug/L
1,1,2,2-Tetrachloroethane	12	<12	ug/L
1,3-Dichlorobenzene	12	<12	ug/L
1,4-Dichlorobenzene	12	<12	ug/L
1,2-Dichlorobenzene	12	<12	ug/L
Dibromofluoromethane (surr)		101	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 13, 1999

Sample Name : **IB-5W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/28/99
Date Analyzed : 05/12/99

Date Received : 04/30/99
Dilution : 1:25
Sample Matrix : Water
Lab Number : 19964-33

Parameter	MRL	Measured Conc.	Units
Chloromethane	25	<25	ug/L
Vinyl Chloride	25	<25	ug/L
Bromomethane	25	<25	ug/L
Chloroethane	25	<25	ug/L
Trichlorofluoromethane	25	<25	ug/L
1,1-Dichloroethene	12	<12	ug/L
Methylene Chloride	12	<12	ug/L
t-1,2-Dichloroethene	12	<12	ug/L
1,1-Dichloroethane	12	<12	ug/L
c-1,2-Dichloroethene	**12**	**1200**	ug/L
Chloroform	12	<12	ug/L
1,1,1-Trichloroethane	12	<12	ug/L
Carbon Tetrachloride	12	<12	ug/L
1,2-Dichloroethane	12	<12	ug/L
Trichloroethene	**12**	**200**	ug/L
1,2-Dichloropropane	12	<12	ug/L
Bromodichloromethane	12	<12	ug/L
c-1,3-Dichloropropene	12	<12	ug/L
t-1,3-Dichloropropene	12	<12	ug/L
1,1,2-trichloroethane	12	<12	ug/L
Tetrachloroethene	**12**	**2500**	ug/L
Dibromochloromethane	12	<12	ug/L
Chlorobenzene	12	<12	ug/L
Bromoform	12	<12	ug/L
1,1,2,2-Tetrachloroethane	12	<12	ug/L
1,3-Dichlorobenzene	12	<12	ug/L
1,4-Dichlorobenzene	12	<12	ug/L
1,2-Dichlorobenzene	12	<12	ug/L
Dibromofluoromethane (surr)		104	% Recovery
Toluene - d8 (surr)		91	% Recovery
4-Bromofluorobenzene (surr)		77	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-6W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-34

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	1.0	<1.0	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	0.50	<0.50	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**38**	ug/L
Trichloroethene	0.50	<0.50	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**20**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		107	% Recovery
Toluene - d8 (surr)		90	% Recovery
4-Bromofluorobenzene (surr)		74	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-7W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-35

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	1.0	<1.0	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	**0.50**	**3.9**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**140 E**	ug/L
Trichloroethene	0.50	<0.50	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**10**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		101	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		77	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 13, 1999

Sample Name : **IB-7W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/29/99
Date Analyzed : 05/12/99

Date Received : 04/30/99
Dilution : 1:5
Sample Matrix : Water
Lab Number : 19964-35

Parameter	MRL	Measured Conc.	Units
Chloromethane	5.0	<5.0	ug/L
Vinyl Chloride	5.0	<5.0	ug/L
Bromomethane	5.0	<5.0	ug/L
Chloroethane	5.0	<5.0	ug/L
Trichlorofluoromethane	5.0	<5.0	ug/L
1,1-Dichloroethene	2.5	<2.5	ug/L
Methylene Chloride	2.5	<2.5	ug/L
t-1,2-Dichloroethene	2.5	<2.5	ug/L
1,1-Dichloroethane	2.5	<2.5	ug/L
c-1,2-Dichloroethene	2.5	<2.5	ug/L
Chloroform	2.5	<2.5	ug/L
1,1,1-Trichloroethane	2.5	<2.5	ug/L
Carbon Tetrachloride	2.5	<2.5	ug/L
1,2-Dichloroethane	**2.5**	**220**	ug/L
Trichloroethene	2.5	<2.5	ug/L
1,2-Dichloropropane	2.5	<2.5	ug/L
Bromodichloromethane	2.5	<2.5	ug/L
c-1,3-Dichloropropene	2.5	<2.5	ug/L
t-1,3-Dichloropropene	2.5	<2.5	ug/L
1,1,2-trichloroethane	2.5	<2.5	ug/L
Tetrachloroethene	**2.5**	**13**	ug/L
Dibromochloromethane	2.5	<2.5	ug/L
Chlorobenzene	2.5	<2.5	ug/L
Bromoform	2.5	<2.5	ug/L
1,1,2,2-Tetrachloroethane	2.5	<2.5	ug/L
1,3-Dichlorobenzene	2.5	<2.5	ug/L
1,4-Dichlorobenzene	2.5	<2.5	ug/L
1,2-Dichlorobenzene	2.5	<2.5	ug/L
Dibromofluoromethane (surr)		106	% Recovery
Toluene - d8 (surr)		86	% Recovery
4-Bromofluorobenzene (surr)		72	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 13, 1999

Sample Name : **IB-8W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-36

Parameter	MRL	Measured Conc.	Units
Chloromethane	**1.0**	**3.5**	ug/L
Vinyl Chloride	**1.0**	**4.4**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	**0.50**	**4.2**	ug/L
Chloroform	**0.50**	**78**	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**590 E**	ug/L
Trichloroethene	**0.50**	**5.2**	ug/L
1,2-Dichloropropane	**0.50**	**16**	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**35**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		100	% Recovery
Toluene - d8 (surr)		91	% Recovery
4-Bromofluorobenzene (surr)		76	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 20, 1999

VOCs by EPA 8260B

Sample Name : **IB-8W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:20
Sample Matrix : Water
Lab Number : 19964-36

Parameter	MRL	Measured Conc.	Units
Chloromethane	20	<20	ug/L
Vinyl Chloride	20	<20	ug/L
Bromomethane	20	<20	ug/L
Chloroethane	20	<20	ug/L
Trichlorofluoromethane	20	<20	ug/L
1,1-Dichloroethene	10	<10	ug/L
Methylene Chloride	10	<10	ug/L
t-1,2-Dichloroethene	10	<10	ug/L
1,1-Dichloroethane	10	<10	ug/L
c-1,2-Dichloroethene	10	<10	ug/L
Chloroform	**10**	**100**	ug/L
1,1,1-Trichloroethane	10	<10	ug/L
Carbon Tetrachloride	10	<10	ug/L
1,2-Dichloroethane	**10**	**2200**	ug/L
Trichloroethene	10	<10	ug/L
1,2-Dichloropropane	**10**	**15**	ug/L
Bromodichloromethane	10	<10	ug/L
c-1,3-Dichloropropene	10	<10	ug/L
t-1,3-Dichloropropene	10	<10	ug/L
1,1,2-trichloroethane	10	<10	ug/L
Tetrachloroethene	**10**	**32**	ug/L
Dibromochloromethane	10	<10	ug/L
Chlorobenzene	10	<10	ug/L
Bromoform	10	<10	ug/L
1,1,2,2-Tetrachloroethane	10	<10	ug/L
1,3-Dichlorobenzene	10	<10	ug/L
1,4-Dichlorobenzene	10	<10	ug/L
1,2-Dichlorobenzene	10	<10	ug/L
Dibromofluoromethane (surr)		93	% Recovery
Toluene - d8 (surr)		106	% Recovery
4-Bromofluorobenzene (surr)		84	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-9W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-37

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	1.0	<1.0	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	0.50	<0.50	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	0.50	<0.50	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**32**	ug/L
Trichloroethene	0.50	<0.50	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	0.50	<0.50	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		103	% Recovery
Toluene - d8 (surr)		92	% Recovery
4-Bromofluorobenzene (surr)		73	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 12, 1999

VOCs by EPA 8260B

Sample Name : **IB-10W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-38

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	**1.0**	**8.2**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	0.50	<0.50	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	**0.50**	**2.6**	ug/L
1,1-Dichloroethane	0.50	<0.50	ug/L
c-1,2-Dichloroethene	0.50	<0.50	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	0.50	<0.50	ug/L
Trichloroethene	0.50	<0.50	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	0.50	<0.50	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		105	% Recovery
Toluene - d8 (surr)		93	% Recovery
4-Bromofluorobenzene (surr)		78	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-11W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-39

Parameter	MRL	Measured Conc.	Units
Chloromethane	**1.0**	**3.4**	ug/L
Vinyl Chloride	**1.0**	**24**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	**0.50**	**3.2**	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	**0.50**	**19**	ug/L
1,1-Dichloroethane	**0.50**	**3.3**	ug/L
c-1,2-Dichloroethene	**0.50**	**300 E**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**38**	ug/L
Trichloroethene	**0.50**	**130 E**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**400 E**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		109	% Recovery
Toluene - d8 (surr)		91	% Recovery
4-Bromofluorobenzene (surr)		71	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 19, 1999

VOCs by EPA 8260B

Sample Name : **IB-11W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/17/99

Date Received : 04/30/99
Dilution : 1:10
Sample Matrix : Water
Lab Number : 19964-39

Parameter	MRL	Measured Conc.	Units
Chloromethane	10	<10	ug/L
Vinyl Chloride	**10**	**14**	ug/L
Bromomethane	10	<10	ug/L
Chloroethane	10	<10	ug/L
Trichlorofluoromethane	10	<10	ug/L
1,1-Dichloroethene	5.0	<5.0	ug/L
Methylene Chloride	5.0	<5.0	ug/L
t-1,2-Dichloroethene	**5.0**	**9.1**	ug/L
1,1-Dichloroethane	5.0	<5.0	ug/L
c-1,2-Dichloroethene	**5.0**	**320**	ug/L
Chloroform	5.0	<5.0	ug/L
1,1,1-Trichloroethane	5.0	<5.0	ug/L
Carbon Tetrachloride	5.0	<5.0	ug/L
1,2-Dichloroethane	**5.0**	**44**	ug/L
Trichloroethene	**5.0**	**150**	ug/L
1,2-Dichloropropane	5.0	<5.0	ug/L
Bromodichloromethane	5.0	<5.0	ug/L
c-1,3-Dichloropropene	5.0	<5.0	ug/L
t-1,3-Dichloropropene	5.0	<5.0	ug/L
1,1,2-trichloroethane	5.0	<5.0	ug/L
Tetrachloroethene	**5.0**	**620**	ug/L
Dibromochloromethane	5.0	<5.0	ug/L
Chlorobenzene	5.0	<5.0	ug/L
Bromoform	5.0	<5.0	ug/L
1,1,2,2-Tetrachloroethane	5.0	<5.0	ug/L
1,3-Dichlorobenzene	5.0	<5.0	ug/L
1,4-Dichlorobenzene	5.0	<5.0	ug/L
1,2-Dichlorobenzene	5.0	<5.0	ug/L
Dibromofluoromethane (surr)		96	% Recovery
Toluene - d8 (surr)		103	% Recovery
4-Bromofluorobenzene (surr)		85	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **IB-13W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-40

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	**1.0**	**120 E**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	**0.50**	**6.6**	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	**0.50**	**57**	ug/L
1,1-Dichloroethane	**0.50**	**7.6**	ug/L
c-1,2-Dichloroethene	**0.50**	**590 E**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**87**	ug/L
Trichloroethene	**0.50**	**160 E**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**350 E**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		116	% Recovery
Toluene - d8 (surr)		89	% Recovery
4-Bromofluorobenzene (surr)		71	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 19, 1999

Sample Name : **IB-13W**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:10
Sample Matrix : Water
Lab Number : 19964-40

Parameter	MRL	Measured Conc.	Units
Chloromethane	10	<10	ug/L
Vinyl Chloride	**10**	**76**	ug/L
Bromomethane	10	<10	ug/L
Chloroethane	10	<10	ug/L
Trichlorofluoromethane	10	<10	ug/L
1,1-Dichloroethene	5.0	<5.0	ug/L
Methylene Chloride	5.0	<5.0	ug/L
t-1,2-Dichloroethene	**5.0**	**34**	ug/L
1,1-Dichloroethane	5.0	<5.0	ug/L
c-1,2-Dichloroethene	**5.0**	**630**	ug/L
Chloroform	5.0	<5.0	ug/L
1,1,1-Trichloroethane	5.0	<5.0	ug/L
Carbon Tetrachloride	5.0	<5.0	ug/L
1,2-Dichloroethane	**5.0**	**94**	ug/L
Trichloroethene	**5.0**	**160**	ug/L
1,2-Dichloropropane	5.0	<5.0	ug/L
Bromodichloromethane	5.0	<5.0	ug/L
c-1,3-Dichloropropene	5.0	<5.0	ug/L
t-1,3-Dichloropropene	5.0	<5.0	ug/L
1,1,2-trichloroethane	5.0	<5.0	ug/L
Tetrachloroethene	**5.0**	**390**	ug/L
Dibromochloromethane	5.0	<5.0	ug/L
Chlorobenzene	5.0	<5.0	ug/L
Bromoform	5.0	<5.0	ug/L
1,1,2,2-Tetrachloroethane	5.0	<5.0	ug/L
1,3-Dichlorobenzene	5.0	<5.0	ug/L
1,4-Dichlorobenzene	5.0	<5.0	ug/L
1,2-Dichlorobenzene	5.0	<5.0	ug/L
Dibromofluoromethane (surr)		97	% Recovery
Toluene - d8 (surr)		101	% Recovery
4-Bromofluorobenzene (surr)		85	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.
Davis
1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

VOCs by EPA 8260B

Sample Log 19964
May 12, 1999

Sample Name : **D-1**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/10/99

Date Received : 04/30/99
Dilution : 1:1
Sample Matrix : Water
Lab Number : 19964-41

Parameter	MRL	Measured Conc.	Units
Chloromethane	1.0	<1.0	ug/L
Vinyl Chloride	**1.0**	**110 E**	ug/L
Bromomethane	1.0	<1.0	ug/L
Chloroethane	1.0	<1.0	ug/L
Trichlorofluoromethane	1.0	<1.0	ug/L
1,1-Dichloroethene	**0.50**	**6.2**	ug/L
Methylene Chloride	1.0	<1.0	ug/L
t-1,2-Dichloroethene	**0.50**	**52**	ug/L
1,1-Dichloroethane	**0.50**	**7.3**	ug/L
c-1,2-Dichloroethene	**0.50**	**570 E**	ug/L
Chloroform	0.50	<0.50	ug/L
1,1,1-Trichloroethane	0.50	<0.50	ug/L
Carbon Tetrachloride	0.50	<0.50	ug/L
1,2-Dichloroethane	**0.50**	**87**	ug/L
Trichloroethene	**0.50**	**150 E**	ug/L
1,2-Dichloropropane	0.50	<0.50	ug/L
Bromodichloromethane	0.50	<0.50	ug/L
c-1,3-Dichloropropene	0.50	<0.50	ug/L
t-1,3-Dichloropropene	0.50	<0.50	ug/L
1,1,2-trichloroethane	0.50	<0.50	ug/L
Tetrachloroethene	**0.50**	**330 E**	ug/L
Dibromochloromethane	0.50	<0.50	ug/L
Chlorobenzene	0.50	<0.50	ug/L
Bromoform	0.50	<0.50	ug/L
1,1,2,2-Tetrachloroethane	0.50	<0.50	ug/L
1,3-Dichlorobenzene	0.50	<0.50	ug/L
1,4-Dichlorobenzene	0.50	<0.50	ug/L
1,2-Dichlorobenzene	0.50	<0.50	ug/L
Dibromofluoromethane (surr)		118	% Recovery
Toluene - d8 (surr)		85	% Recovery
4-Bromofluorobenzene (surr)		72	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc.

Davis

1046 Olive Drive, Davis CA 95616 ▪ 530-757-0920 ▪ Fax 753-6091

Sample Log 19964
May 19, 1999

VOCs by EPA 8260B

Sample Name : **D-1**

Project Name : LSI - Emeryville
Project Number :
Sample Date : 04/30/99
Date Analyzed : 05/19/99

Date Received : 04/30/99
Dilution : 1:10
Sample Matrix : Water
Lab Number : 19964-41

Parameter	MRL	Measured Conc.	Units
Chloromethane	10	<10	ug/L
Vinyl Chloride	**10**	**80**	ug/L
Bromomethane	10	<10	ug/L
Chloroethane	10	<10	ug/L
Trichlorofluoromethane	10	<10	ug/L
1,1-Dichloroethene	5.0	<5.0	ug/L
Methylene Chloride	5.0	<5.0	ug/L
t-1,2-Dichloroethene	**5.0**	**34**	ug/L
1,1-Dichloroethane	5.0	<5.0	ug/L
c-1,2-Dichloroethene	**5.0**	**660**	ug/L
Chloroform	5.0	<5.0	ug/L
1,1,1-Trichloroethane	5.0	<5.0	ug/L
Carbon Tetrachloride	5.0	<5.0	ug/L
1,2-Dichloroethane	**5.0**	**97**	ug/L
Trichloroethene	**5.0**	**160**	ug/L
1,2-Dichloropropane	5.0	<5.0	ug/L
Bromodichloromethane	5.0	<5.0	ug/L
c-1,3-Dichloropropene	5.0	<5.0	ug/L
t-1,3-Dichloropropene	5.0	<5.0	ug/L
1,1,2-trichloroethane	5.0	<5.0	ug/L
Tetrachloroethene	**5.0**	**410**	ug/L
Dibromochloromethane	5.0	<5.0	ug/L
Chlorobenzene	5.0	<5.0	ug/L
Bromoform	5.0	<5.0	ug/L
1,1,2,2-Tetrachloroethane	5.0	<5.0	ug/L
1,3-Dichlorobenzene	5.0	<5.0	ug/L
1,4-Dichlorobenzene	5.0	<5.0	ug/L
1,2-Dichlorobenzene	5.0	<5.0	ug/L
Dibromofluoromethane (surr)		97	% Recovery
Toluene - d8 (surr)		102	% Recovery
4-Bromofluorobenzene (surr)		86	% Recovery

MRL = Method Reporting Limit Conc. = Concentration

B = Analyte was detected in Method Blank.

E = Concentration exceeded calibration range.

Approved By : Tom Kwoka

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Soil	Date Analyzed: 5/4/99
QC Batch: VS990504	QC Limits Set: 4/12/99

Parameter	Spike Conc mg/Kg	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	0.050	58	60	3.1	33	113
Benzene	0.050	109	111	1.7	86	128
Trichloroethene	0.050	93	90	3.6	70	106
Toluene	0.050	87	95	9.5	52	129
Chlorobenzene	0.050	101	101	0.3	87	112

Parameter	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	71	138
Toluene-d8	54	131
4-Bromofluorobenzene	41	122

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VS990504.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Soil	Date Analyzed: 5/7/99
QC Batch: VS990507	MS/MSD Sample ID: 19664-13
	QC Limits Set: 4/12/99

Parameter	Spike Conc mg/Kg	MS % Rec	MSD % Rec	RPD	LCS % Rec	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	0.050	76	76	0.5	83	33	113
Benzene	0.050	112	114	1.2	114	86	128
Trichloroethene	0.050	94	96	1.7	92	70	106
Toluene	0.050	89	90	1.3	93	52	129
Chlorobenzene	0.050	98	102	3.5	100	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	71	138
Toluene-d8	54	131
4-Bromofluorobenzene	41	122

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VX990507.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Soil	Date Analyzed: 5/11/99
QC Batch: VS990511	QC Limits Set: 4/12/99

Parameter	Spike Conc mg/Kg	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	0.050	80	86	6.3	33	113
Benzene	0.050	112	115	2.9	86	128
Trichloroethene	0.050	90	93	3.1	70	106
Toluene	0.050	85	87	2.3	52	129
Chlorobenzene	0.050	98	101	2.8	87	112

Parameter	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	71	138
Toluene-d8	54	131
4-Bromofluorobenzene	41	122

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VS990511.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Soil	Date Analyzed: 5/18/99
QC Batch: VS990518	QC Limits Set: 4/12/99

Parameter	Spike Conc mg/Kg	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	0.050	84	84	1.0	33	113
Benzene	0.050	97	96	1.1	86	128
Trichloroethene	0.050	89	92	3.9	70	106
Toluene	0.050	102	102	0.4	52	129
Chlorobenzene	0.050	99	97	2.9	87	112

Parameter	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	71	138
Toluene-d8	54	131
4-Bromofluorobenzene	41	122

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VS990518.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Soil	Date Analyzed: 5/19/99
QC Batch: vs990519	QC Limits Set: 4/12/99

Parameter	Spike Conc mg/Kg	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	0.050	83	83	0.8	33	113
Benzene	0.050	94	94	0.8	86	128
Trichloroethene	0.050	85	88	3.8	70	106
Toluene	0.050	96	99	3.3	52	129
Chlorobenzene	0.050	96	97	1.0	87	112

Parameter	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	71	138
Toluene-d8	54	131
4-Bromofluorobenzene	41	122

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VS990519.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Water	Date Analyzed: 5/10/99
QC Batch: VW990510	QC Limits Set: 4/12/99

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	50	102	103	0.9	26	134
Benzene	50	112	109	2.5	85	127
Trichloroethene	50	105	99	5.8	66	114
Toluene	50	92	95	3.5	58	131
Chlorobenzene	50	103	101	2.3	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	76	132
Toluene-d8	64	123
4-Bromofluorobenzene	43	115

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VW990510.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Water	Date Analyzed: 5/12/99
QC Batch: VW990512	QC Limits Set: 4/12/99

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	50	70	63	11.4	26	134
Benzene	50	106	114	8.1	85	127
Trichloroethene	50	84	90	7.6	66	114
Toluene	50	88	92	4.3	58	131
Chlorobenzene	50	95	104	8.3	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	76	132
Toluene-d8	64	123
4-Bromofluorobenzene	43	115

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VW990512.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Water	Date Analyzed: 5/17/99
QC Batch: VW990517	QC Limits Set: 4/12/99

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	50	77	78	0.9	26	134
Benzene	50	93	100	7.5	85	127
Trichloroethene	50	86	96	11.3	66	114
Toluene	50	95	102	7.3	58	131
Chlorobenzene	50	96	99	2.3	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	76	132
Toluene-d8	64	123
4-Bromofluorobenzene	43	115

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VW990517.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Water	Date Analyzed: 5/18/99
QC Batch: VW990518	QC Limits Set: 4/12/99

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	50	84	80	4.2	26	134
Benzene	50	102	93	9.2	85	127
Trichloroethene	50	96	84	12.4	66	114
Toluene	50	102	96	5.9	58	131
Chlorobenzene	50	98	96	2.3	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	76	132
Toluene-d8	64	123
4-Bromofluorobenzene	43	115

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VW990518.XLS

Acculabs Inc. - Davis

EPA 8260B QC Report

Matrix: Water	Date Analyzed: 5/19/99
QC Batch: VW990519	QC Limits Set: 4/12/99

Parameter	Spike Conc ug/L	LCS % Rec	LCSD % Rec	RPD	Control Chart Limits Lower	Control Chart Limits Upper
1,1-Dichloroethene	50	87	87	0.1	26	134
Benzene	50	102	100	2.1	85	127
Trichloroethene	50	96	94	2.6	66	114
Toluene	50	105	102	2.8	58	131
Chlorobenzene	50	101	100	0.7	87	112

Surrogate Compound	Control Chart Limits Lower	Control Chart Limits Upper
Dibromofluoromethane	76	132
Toluene-d8	64	123
4-Bromofluorobenzene	43	115

Tom Kwoka
Laboratory Director

C:\EXCEL\QC\VW990519.XLS

WEST LABORATORY

CHANGE ORDER FORM

DATE: 5-7-99 TIME: 4:30pm

COMPANY: Gribi Assoc.

PROJECT #: _____ SAMPLE LOG #: 19964

PROJECT NAME: LSI/Emeryville

ORDER TAKEN BY: FWF ORDERED BY: Jim Gribi

SAMPLE #	CHANGE REQUESTED	TURN-AROUND-TIME (If Applicable)
-09	Take sample off hold	
	Analyze for HVOCs	

REMARKS: Already run.

****

UPDATE SECTION: (Initial / Date / Time)

FRONT COMPUTER	VOLATILES	DIESEL	SLOG BOOK
FWF 5/7	/ /	/ /	/ /

Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034 602-437-0979 Fax 437-0826
[ ] 710 E. Evans Blvd. Tucson AZ 85713 520-884-5811 Fax 884-5812
[ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027 602-780-4800 Fax 780-7695
[ ] 4663 Table Mountain Dr. Golden CO 80403 303-277-9514 Fax 277-9512
[ ] 992 Spice Islands Dr. Sparks NV 89431 702-355-0202 Fax 355-0817
[ ] 1046 Olive Drive #2 Davis CA 95616 530-757-0920 Fax 753-6091

Lab Number: 19964
Report Due Date:

Client	Gribi Associates	PUBLIC WATER SUPPLY INFORMATION	
Address	1350 Hayes Street, Ste C-14	System Name	
City, State & Zip	Benicia, CA 94510	PWS No.	Report to State/EPA Y N
Contact	Jim Gribi	POE No.	DWR No.
Phone	707/748-7743	Project Name: LSI - Emeryville	Collection Point
Fax	707/748-7763	Project Number	Collector's Name
P.O. Number		Fax Results: Y / N	Page 1 of 4 — Location (City)

SAMPLE TYPE CODES
DW = drinking water; WW = waste water; MW = monitoring well; HW = hazardous waste; TB = travel blank; SD = solid; SO = soil; SL = sludge

Compliance Monitoring: Y N

TURNAROUND TIME REQUESTED
Standard
RUSH
Special

Lab Director Approval

CLIENT'S SAMPLE ID/LOCATION	Date	Time	Sample Type	Containers	Analyses Requested: HVOCs (8260)	HOLD	Spl. No.
IB-1.1 (2.0)	4/28		S	1	X		01
IB-1.2 (4.0')					X		02
IB-1.3 (13.0)					X		03
IB-2.1 (2.0)					X		04
IB-2.2 (6.0)					X		05
IB-2.3 (11.5)					X		06
IB-3.1 (2.0')					X		07
IB-3.2 (5.5)					X		08
IB-4.1 (3.5')						X	09
IB-4.2 (5.5')					X		10
IB-5.1 (3.5')					X		11

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT			Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y	N	4/30	16:35		
Custody Seals	Y	N	4/30	17:40		
Seals Intact	Y	N				
No. of Containers						

Acculabs' terms are Net 40 (Payment must be received by the date shown on the invoice or any discount is void)

c:\excel\forms\chain.xls

Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034 602-437-0979 Fax 437-0826
[ ] 710 E. Evans Blvd. Tucson AZ 85713 520-884-5811 Fax 884-5812
[ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027 602-780-4800 Fax 780-7695
[ ] 4663 Table Mountain Dr. Golden CO 80403 303-277-9514 Fax 277-9512
[ ] 992 Spice Islands Dr. Sparks NV 89431 702-355-0202 Fax 355-0817
[ ] 1046 Olive Drive #2 Davis CA 95616 530-757-0920 Fax 753-6091

Lab Number: 19964
Report Due Date:

Client	Gribi Associates	PUBLIC WATER SUPPLY INFORMATION	
Address	1350 Hayes Street, Ste C-14	System Name	
City, State & Zip	Benicia, CA 94510	PWS No.	Report to State/EPA Y N
Contact	Jim Gribi	POE No.	DWR No.
Phone	707/748-7743	Project Name ISI-emeryville	Collection Point
Fax	707/748-7763	Project Number	Collector's Name
P.O. Number		Fax Results (Y) N	Page 2 of 4 — Location (City)

SAMPLE TYPE CODES
DW = drinking water; WW = waste water; MW = monitoring well; HW = hazardous waste; TB = travel blank; SD = solid; SO = soil; SL = sludge

Compliance Monitoring Y N

TURNAROUND TIME REQUESTED
Standard (circled)
RUSH
Special

Lab Director Approval

CLIENT'S SAMPLE ID/LOCATION	Date	Time	Sample Type	Containers	Analyses Requested: HVOCs (8260)	HOLD	Spl. No.
IB-5.2 (6.0)	4/28		S	1	X		12
IB-6.1 (3.5)	4/29					X	13
IB-6.2 (6.0)						X	14
IB-6.3 (8.0)						X	15
IB-6.4 (15.0)					X		16
IB-7.1 (4.5)					X		17
IB-7.2 (12.0')					X		18
IB-8.1 (3.0)					X		19
IB-8.2 (6.0)					X		20
IB-9.1 (3.0)					X		21
IB-9.2 (6.5')					X		22

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT			Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y	N	4/30	16:35	James	Ste Woodall
Custody Seals	Y	N	4/30	1740	Ste Woodall	
Seals Intact	Y	N				
No. of Containers						

Acculabs' terms are: Net 40 (Payment must be received by the date shown on the invoice or any discount is void)

c:\excel\forms\chain.xls

Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034 602-437-0979 Fax 437-0826
[ ] 710 E. Evans Blvd. Tucson AZ 85713 520-884-5811 Fax 884-5812
[ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027 602-780-4800 Fax 780-7695
[ ] 4663 Table Mountain Dr. Golden CO 80403 303-277-9514 Fax 277-9512
[ ] 992 Spice Islands Dr. Sparks NV 89431 702-355-0202 Fax 355-0817
[ ] 1046 Olive Drive #2 Davis CA 95616 530-757-0920 Fax 753-6091

Lab Number: 19964
Report Due Date:

Client	Gribi Associates	PUBLIC WATER SUPPLY INFORMATION	
Address	1350 Hayes Street, Ste C-14	System Name	
City, State & Zip	Benicia, CA 94510	PWS No.	Report to State/EPA Y N
Contact	Jim Gribi	POE No.	DWR No.
Phone	707/748-7743	Project Name: LSI-Emeryville	Collection Point
Fax	707/748-7763	Project Number	Collector's Name
P.O. Number		Fax Results (Y) N	Page 3 of 4 — Location (City)

SAMPLE TYPE CODES: DW = drinking water; WW = waste water; MW = monitoring well; HW = hazardous waste; TB = travel blank; SD = solid; SO = soil; SL = sludge

Compliance Monitoring: Y N

TURNAROUND TIME REQUESTED: Standard; RUSH; Special

Lab Director Approval

CLIENT'S SAMPLE ID/LOCATION	Date	Time	Sample Type	Containers	Analyses Requested: HVOCs (8260)	Spl. No.
IB-10.1 (6.5')	4/30		S	1	X	23
IB-11.1 (3.5)					X	24
IB-11.2 (6.0)					X	25
IB-12.1 (3.0)					X	26
IB-12.2 (7.0)					X	27
IB-13.1 (6.0)					X	28
IB-13.2 (9.0')					X	29
IB-1 W	4/28		W	4	X	30
IB-3 W					X	31
IB-4W					X	32
IB-5 W					X	33

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT			Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y	N	4/30	16:35		
Custody Seals	Y	N	4/30	1740		
Seals Intact	Y	N				
No. of Containers						

Acculabs' terms are: Net 40 (Payment must be received by the date shown on the Invoice or any discount is void)

c:\excel\forms\chain.xls

Acculabs Inc.

[ ] 3902 E. University Dr. Phoenix AZ 85034 602-437-0979 Fax 437-0826
[ ] 710 E. Evans Blvd. Tucson AZ 85713 520-884-5811 Fax 884-5812
[ ] 2020 W. Lone Cactus Dr. Phoenix AZ 85027 602-780-4800 Fax 780-7695
[ ] 4663 Table Mountain Dr. Golden CO 80403 303-277-9514 Fax 277-9512
[ ] 992 Spice Islands Dr. Sparks NV 89431 702-355-0202 Fax 355-0817
[ ] 1046 Olive Drive #2 Davis CA 95616 530-757-0920 Fax 753-6091

Lab Number: 19964
Report Due Date:

Client	Gribi Associates	PUBLIC WATER SUPPLY INFORMATION	
Address	1350 Hayes Street, Ste C-14	System Name	
City, State & Zip	Benicia, CA 94510	PWS No.	Report to State/EPA Y N
Contact	Jim Gribi	POE No.	DWR No.
Phone	707/748-7743	Project Name LSI-Emeryville	Collection Point
Fax	707/748-7763	Project Number	Collector's Name
P.O. Number		Fax Results Y N	Page 4 of 4

SAMPLE TYPE CODES

DW = drinking water TB = travel blank
WW = waste water SD = solid
MW = monitoring well SO = soil
HW = hazardous waste SL = sludge

Compliance Monitoring Y N

TURNAROUND TIME REQUESTED

Standard
RUSH
Special

Lab Director Approval

CLIENT'S SAMPLE ID/LOCATION	Date	Time	Sample Type	Containers	Analyses Requested: & HVOCs (8011)	Spl. No.
1B-6W	4/29		W	4	X	34
1B-7W	11		11	11	X	35
1B-8W	4/30		W	4	X	36
1B-9W	1		1	1	X	37
1B-10W					X	38
1B-11W					X	39
1B-13W					X	40
~~Dup~~ D-1					X	41

Instructions/Comments/Special Requirements:

SAMPLE RECEIPT			Date	Time	Samples Relinquished By	Samples Received By
Received Cold	Y	N	4/30	16:35		
Custody Seals	Y	N	4/30	1740		
Seals Intact	Y	N				
No. of Containers						

Acculabs' terms are: Net 40 (Payment must be received by the date shown on the Invoice or any discount is void)

APPENDIX H

RBCA MODEL INPUT TABLES

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: LSI-North/Outside
Site Location: 1266 66th Street

Job Identification: 149-02-01
Date Completed: 6/1/99
Completed By: James E. Gribi

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

OUTSIDE AREA

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	FALSE	TRUE	TRUE
S.v	Volatilization from Subsurface Soils	FALSE	TRUE	
GW.v	Volatilization from Groundwater	FALSE	TRUE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	TRUE	
GW.b	Vapors from Groundwater	FALSE	TRUE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW.i	Groundwater Ingestion	FALSE	FALSE	
S.l	Leaching to Groundwater from all Soils	FALSE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)		FALSE		FALSE
S	Inhalation receptor (cm)		FALSE		TRUE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	***1.0E-05***	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***9.3E+06***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***3.0E+03***	1.0E+03
W.gw	Length of affect. soil parallel to groundwater (cm		
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	1.0E+02	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03
Ugw.tr	Groundwater seepage velocity (cm/yr)	6.6E+03
Ks	Saturated hydraulic conductivity(cm/s)	
grad	Groundwater gradient (cm/cm)	
Sw	Width of groundwater source zone (cm)	
Sd	Depth of groundwater source zone (cm)	
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	FALSE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value	capillary	vadose	foundation
hc	Capillary zone thickness (cm)	5.0E+00			
hv	Vadose zone thickness (cm)	***4.0E+02***			
rho	Soil density (g/cm^3)	1.7			
foc	Fraction of organic carbon in vadose zone	0.01			
phi	Soil porosity in vadose zone	0.38			
Lgw	Depth to groundwater (cm)	***4.0E+02***			
Ls	Depth to top of affected subsurface soil (cm)	1.0E+02			
Lsubs	Thickness of affected subsurface soils (cm)	***3.0E+02***			
pH	Soil/groundwater pH	6.5			
phi.w	Volumetric water content		0.342	0.12	0.12
phi.a	Volumetric air content		0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.01	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)		
ay	Transverse dispersivity (cm)		
az	Vertical dispersivity (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

RBCA SITE ASSESSMENT | Input Screen 7

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Dichloroethane, 1,2-	2.5E-4	UCL	2.5E-3	UCL	2.5E-3	UCL
Dichloroethene, cis-1,2-	1.3E+0	UCL	5.5E-1	UCL	3.0E-1	UCL
Dichloroethene,1,2-trans-	3.2E-3	UCL	2.5E-3	UCL	1.0E-2	UCL
Tetrachloroethene	2.6E+0	UCL	1.2E-1	UCL	2.5E-1	UCL
Trichloroethene	2.4E-1	UCL	9.1E-2	UCL	1.5E-1	UCL
Vinyl chloride	1.7E-2	UCL	3.8E-2	UCL	3.1E-2	UCL

Site Name: LSI-North/Outside
Site Location: 1266 66th Street

Completed By: James E. Gribi
Date Completed: 6/1/1999

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: LSI-North Indoor | Job Identification: 149-02-01
Site Location: 1266 66th Street, Emeryville, CA | Date Completed: 6/1/99
Completed By: James E. Gribi

Software: GSI RBCA Spreadsheet
Version: 1.0.1

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined.

INSIDE AREA

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	FALSE	FALSE	TRUE
S.v	Volatilization from Subsurface Soils	FALSE	FALSE	
GW.v	Volatilization from Groundwater	FALSE	FALSE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	FALSE	TRUE	
GW.b	Vapors from Groundwater	FALSE	TRUE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW.I	Groundwater Ingestion	FALSE	FALSE	
S.I	Leaching to Groundwater from all Soils	FALSE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)		FALSE		FALSE
S	Inhalation receptor (cm)		FALSE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	1.0E-06	1.0E-04
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	1.0E+00
Opt	Calculation Option (1, 2, or 3)	3	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	***1.2E+07***	1.0E+06
W	Length of affect. soil parallel to wind (cm)	***2.4E+03***	***2.4E+03***
W.gw	Length of affect. soil parallel to groundwater (cm	1.5E+03	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)	1.0E+02	
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	***3.1E-01***
Ugw.tr	Groundwater seepage velocity (cm/yr)	***8.3E-01***
Ks	Saturated hydraulic conductivity(cm/s)	1.0E-06
grad	Groundwater gradient (cm/cm)	1.0E-02
Sw	Width of groundwater source zone (cm)	
Sd	Depth of groundwater source zone (cm)	
phi.eff	Effective porosity in water-bearing unit	3.8E-01
foc.sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is bioattenuation considered?	TRUE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value	capillary	vadose	foundation
hc	Capillary zone thickness (cm)	5.0E+00			
hv	Vadose zone thickness (cm)	***5.2E+02***			
rho	Soil density (g/cm^3)	1.7			
foc	Fraction of organic carbon in vadose zone	0.01			
phi	Soil porosity in vadose zone	0.38			
Lgw	Depth to groundwater (cm)	***5.2E+02***			
Ls	Depth to top of affected subsurface soil (cm)	1.0E+02			
Lsubs	Thickness of affected subsurface soils (cm)	***4.2E+02***			
pH	Soil/groundwater pH	6.5			
phi.w	Volumetric water content		0.342	0.12	0.12
phi.a	Volumetric air content		0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.01	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)		
ay	Transverse dispersivity (cm)		
az	Vertical dispersivity (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

RBCA SITE ASSESSMENT | Input Screen 7

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Dichloroethane, 1,2-	1.3E-1	UCL	5.0E-3	max	6.8E-3	UCL
Dichloroethene, cis-1,2-	5.8E-2	UCL	5.0E-3	max	7.7E-3	UCL
Dichloroethene,1,2-trans-	4.2E-3	UCL	5.0E-3	max	2.5E-3	UCL
Tetrachloroethene	7.0E-2	UCL	8.7E-2	max	2.0E-2	UCL
Trichloroethene	2.6E-2	UCL	5.0E-3	max	5.5E-3	UCL
Vinyl chloride	8.4E-3	UCL	5.0E-3	max	8.4E-3	UCL

Site Name: LSI-North Indoor
Site Location: 1266 66th Street, Emeryville, California

Completed By: James E. Gribi
Date Completed: 6/1/1999

RBCA CHEMICAL DATABASE

Physical Property Data

CAS Number	Constituent	type	Molecular Weight (g/mole) MW	ref	Diffusion Coefficients in air (cm2/s) Dair	ref	in water (cm2/s) Dwat	ref	log (Koc) or log(Kd) (@ 20 - 25 C) log(l/kg)	ref	Henry's Law Constant (@ 20 - 25 C) (atm-m3/mol)	(unitless)	ref	Vapor Pressure (@ 20 - 25 C) (mm Hg)	ref	Solubility (@ 20 - 25 C) (mg/L)	ref	acid pKa	base pKb	ref
107-06-2	Dichloroethane, 1,2-	C	99	4	1.04E-01	4	9.90E-06	4	1.76	4	1.20E-03	4.99E-02	4	8.00E+01	4	8.69E+03	5			
156-59-2	Dichloroethene, cis-1,2-	C	96.936	4	7.36E-02	4	1.13E-05	4	1.38	8	3.19E-02	1.33E+00	4	2.00E+02	5	8.00E+02	5			
156-60-5	Dichloroethene,1,2-trans-	C	96.936	4	7.07E-02	4	1.19E-05	4	1.46	4	5.32E-03	2.21E-01	4	3.31E+02	4	6.00E+02	5			
127-18-4	Tetrachloroethene	C	165.83	4	7.20E-02	4	8.20E-06	4	2.42	29	2.90E-02	1.21E+00	4	1.90E+01	4	1.43E+02	4			
79-01-6	Trichloroethene	C	131.4	23	8.18E-02	6	1.05E-04	7	1.26	11	1.00E-02	4.17E-01	10	5.80E+01	23	1.00E+03	23			
75-01-4	Vinyl chloride	C	62.5	4	1.06E-01	4	1.23E-05	4	0.06	4	8.60E-02	3.58E+00	4	2.66E+03	4	2.54E+03	4			

Site Name: LSI-North Indoor Site Location: 1266 66th Street, Emery Completed By: James E. Gribi Date Completed: 6/1/1999

Software version: 1.0.1

RBCA CHEMICAL DATABASE

Toxicity Data

CAS Number	Constituent	Reference Dose (mg/kg/day) Oral RfD_oral	ref	Inhalation RfD_inhal	ref	Slope Factors 1/(mg/kg/day) Oral SF_oral	ref	Inhalation SF_inhal	ref	EPA Weight of Evidence	Is Constituent Carcinogenic ?
107-06-2	Dichloroethane, 1,2-	-		2.86E-03	R	9.10E-02	R	9.10E-02	R	B2	TRUE
156-59-2	Dichloroethene, cis-1,2-	1.00E-02	R	-		-		-		D	FALSE
156-60-5	Dichloroethene,1,2-trans-	2.00E-02	R	-		-		-			FALSE
127-18-4	Tetrachloroethene	1.00E-02	R	-		5.20E-02	R	2.03E-03	R	C-B2	TRUE
79-01-6	Trichloroethene	6.00E-03	R	-		1.10E-02	R	6.00E-03	R		TRUE
75-01-4	Vinyl chloride	-		-		1.90E+00	R	3.00E-01	R	A	TRUE

Site Name: LSI-North Indoor Site Location: 1266 66th Street, Eme Completed By: James E. Gribi Date Completed: 6/1/1999

Software version: 1.0.1

CAS Number	Constituent	Maximum Contaminant Level MCL (mg/L)	reference	Permissible Exposure Limit PEL/TLV (mg/m3)	ref	Relative Absorption Factors Oral	Dermal	Detection Limits Groundwater (mg/L)	ref	Soil (mg/kg)	ref	Half Life (First-Order Decay) (days) Saturated	Unsaturated	ref
107-06-2	Dichloroethane, 1,2-	5.00E-03	52 FR 25690 (08 Jul 87)	4.00E+00	NIOSH	1	0.5	0.0005	C	0.005	S	360	360	H
156-59-2	Dichloroethene, cis-1,2-	7.00E-02	56 FR 3526 (30 Jan 91)			1	0.5	0.001	C	0.005	S			
156-60-5	Dichloroethene,1,2-trans-	1.00E-01	56 FR 3526 (30 Jan 91)			1	0.5	0.001	C	0.005	S			
127-18-4	Tetrachloroethene	5.00E-03	56 FR 3526 (30 Jan 91)	1.70E+02	ACGIH	1	0.5	0.0005	C			720	720	H
79-01-6	Trichloroethene	5.00E-03	52 FR 25690 (08 Jul 87)	2.69E+02	ACGIH	1	0.5	0.001	C	0.005	S	1653	1653	H
75-01-4	Vinyl chloride	2.00E-03	52 FR 25690 (08 Jul 87)	1.30E+01	ACGIH	1	0.5	0.002	C	0.01	S	2875	2875	H

Site Name: LSI-North Indoor Site Location: 1266 66th Street, Emeryville, California Completed By: James E. Gribi Date Completed: 6/1/1999

Software version: 1.0.1

APPENDIX I

RBCA MODEL BASELINE RISK TABLES

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.3**

Site Name: LSI-North/Outside
Site Location: 1266 66th Street

Completed By: James E. Gribi
Date Completed: 6/1/1999

OUTSIDE AREA

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK: Individual COC Risk – Maximum Value	Individual COC Risk – Target Risk	Cumulative COC Risk – Total Value	Cumulative COC Risk – Target Risk	Risk Limit(s) Exceeded?	BASELINE TOXIC EFFECTS: Hazard Quotient – Maximum Value	Hazard Quotient – Applicable Limit	Hazard Index – Total Value	Hazard Index – Applicable Limit	Toxicity Limit(s) Exceeded?
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	2.6E-7	1.0E-5	3.4E-7	N/A	☐	1.0E-5	1.0E+0	1.0E-5	N/A	☐
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	3.8E-5	1.0E-5	4.9E-5	N/A	■	1.0E-3	1.0E+0	1.0E-3	N/A	☐
SOIL EXPOSURE PATHWAYS										
Complete:	7.5E-7	1.0E-5	8.3E-7	N/A	☐	1.6E-3	1.0E+0	2.4E-3	N/A	☐
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	3.8E-5	1.0E-5	4.9E-5	N/A	■	1.6E-3	1.0E+0	2.4E-3	N/A	☐

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS: VAPOR AND DUST INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Surface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial		3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2) On-Site Commercial		4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day) On-Site Commercial		5) Average Daily Intake Rate: (mg/kg-day) (3) X (4) On-Site Commercial	
Dichloroethane, 1,2-	2.5E-3	6.8E+4		3.7E-8		7.0E-2		2.6E-9	
Dichloroethene, cis-1,2-	5.5E-1	6.8E+4		8.0E-6		2.0E-1		1.6E-6	
Dichloroethene,1,2-trans-	2.5E-3	6.8E+4		3.7E-8		2.0E-1		7.1E-9	
Tetrachloroethene	1.2E-1	6.8E+4		1.8E-6		7.0E-2		1.2E-7	
Trichloroethene	9.1E-2	6.8E+4		1.3E-6		7.0E-2		9.3E-8	
Vinyl chloride	3.8E-2	6.8E+4		5.6E-7		7.0E-2		3.9E-8	

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial		3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2) On-Site Commercial		4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day) On-Site Commercial		5) Average Daily Intake Rate (mg/kg-day) (3) X (4) On-Site Commercial	
Dichloroethane, 1,2-	2.5E-3	2.3E+4		1.1E-7		7.0E-2		7.7E-9	
Dichloroethene, cis-1,2-	3.0E-1	2.3E+4		1.3E-5		2.0E-1		2.6E-6	
Dichloroethene,1,2-trans-	1.0E-2	2.3E+4		4.5E-7		2.0E-1		8.9E-8	
Tetrachloroethene	2.5E-1	2.3E+4		1.1E-5		7.0E-2		7.6E-7	
Trichloroethene	1.5E-1	2.3E+4		6.5E-6		7.0E-2		4.5E-7	
Vinyl chloride	3.1E-2	2.3E+4		1.4E-6		7.0E-2		9.5E-8	

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Inhalation rate (m^3/day); POE = Point of exposure; SA = Skin exposue area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 | *3 OF 9*

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER: VAPOR INHALATION

Constituents of Concern	Exposure Concentration 1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor: On-Site Commercial		3) Exposure Medium: Outdoor Air: POE Conc. (mg/m^3) (1) / (2) On-Site Commercial		4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day) On-Site Commercial		5) Average Daily Intake Rate: (mg/kg-day) (3) X (4) On-Site Commercial		TOTAL PATHWAY INTAKE (mg/kg-day) *(Sum intake values from surface, subsurface & groundwater routes.)* On-Site Commercial	
Dichloroethane, 1,2-	2.5E-4	4.3E+4		5.8E-9		7.0E-2		4.1E-10		1.1E-8	
Dichloroethene, cis-1,2-	1.3E+0	5.8E+3		2.2E-4		2.0E-1		4.3E-5		4.7E-5	
Dichloroethene,1,2-trans-	3.2E-3	2.2E+4		1.5E-7		2.0E-1		2.9E-8		1.2E-7	
Tetrachloroethene	2.6E+0	6.6E+3		4.0E-4		7.0E-2		2.8E-5		2.9E-5	
Trichloroethene	2.4E-1	5.2E+3		4.6E-5		7.0E-2		3.2E-6		3.8E-6	
Vinyl chloride	1.7E-2	1.6E+3		1.0E-5		7.0E-2		7.3E-7		8.6E-7	

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

OUTSIDE AREA

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 PATHWAY RISK CALCULATION

OUTDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial		(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Commercial		TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial		(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial	
Dichloroethane, 1,2-	B2	1.1E-8		9.1E-2	9.7E-10		3.0E-8		2.9E-3	1.0E-5	
Dichloroethene, cis-1,2-	D										
Dichloroethene,1,2-trans-											
Tetrachloroethene	C-B2	2.9E-5		2.0E-3	5.9E-8						
Trichloroethene		3.8E-6		6.0E-3	2.3E-8						
Vinyl chloride	A	8.6E-7		3.0E-1	2.6E-7						

Total Pathway Carcinogenic Risk = 3.4E-7 | 0.0E+0

Total Pathway Hazard Index = 1.0E-5 | 0.0E+0

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS:

VAPOR INTRUSION TO BUILDINGS

Constituents of Concern	Exposure Concentration 1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	4) Exposure Multiplier (IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	5) Average Daily Intake Rate (mg/kg-day) (3) X (4): On-Site Commercial
Dichloroethane, 1,2-	2.5E-3	1.8E+2	1.4E-5	7.0E-2	9.8E-7
Dichloroethene, cis-1,2-	3.0E-1	1.1E+2	2.8E-3	2.0E-1	5.6E-4
Dichloroethene,1,2-trans-	1.0E-2	1.1E+2	9.7E-5	2.0E-1	1.9E-5
Tetrachloroethene	2.5E-1	1.1E+2	2.3E-3	7.0E-2	1.6E-4
Trichloroethene	1.5E-1	1.1E+2	1.4E-3	7.0E-2	9.6E-5
Vinyl chloride	3.1E-2	1.1E+2	2.9E-4	7.0E-2	2.0E-5

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER:
VAPOR INTRUSION TO BUILDINGS

Exposure Concentration

Constituents of Concern	1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	5) Average Daily Intake Rate: (mg/kg-day) (3) X (4): On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from subsurface & groundwater routes.): On-Site Commercial
Dichloroethane, 1,2-	2.5E-4	4.6E+2	5.5E-7	7.0E-2	3.8E-8	1.0E-6
Dichloroethene, cis-1,2-	1.3E+0	4.0E+1	3.1E-2	2.0E-1	6.0E-3	6.6E-3
Dichloroethene,1,2-trans-	3.2E-3	1.9E+2	1.7E-5	2.0E-1	3.3E-6	2.2E-5
Tetrachloroethene	2.6E+0	4.6E+1	5.7E-2	7.0E-2	4.0E-3	4.2E-3
Trichloroethene	2.4E-1	6.3E+1	3.8E-3	7.0E-2	2.7E-4	3.6E-4
Vinyl chloride	1.7E-2	1.1E+1	1.5E-3	7.0E-2	1.1E-4	1.3E-4

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 | *2 OF 4*

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site	(2) Total Carcinogenic Intake Rate (mg/kg/day) Commercial	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site	(4) Individual COC Risk (2) x (3) Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site	(5) Total Toxicant Intake Rate (mg/kg/day) Commercial	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site	(7) Individual COC Hazard Quotient (5) / (6) Commercial
Dichloroethane, 1,2-	B2		1.0E-6	9.1E-2		9.3E-8		2.9E-6	2.9E-3		1.0E-3
Dichloroethene, cis-1,2-	D										
Dichloroethene,1,2-trans-											
Tetrachloroethene	C-B2		4.2E-3	2.0E-3		8.5E-6					
Trichloroethene			3.6E-4	6.0E-3		2.2E-6					
Vinyl chloride	A		1.3E-4	3.0E-1		3.8E-5					

Total Pathway Carcinogenic Risk = 0.0E+0 | 4.9E-5

Total Pathway Hazard Index = 0.0E+0 | 1.0E-3

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside Site Location: 1266 66th Street Completed By: James E. G Date Completed: 6/1/1999

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

Constituents of Concern	1) Source Medium: Exposure Concentration — Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day) — On-Site Residential	2) Exposure Multiplier — On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2) — On-Site Residential	3) Average Daily Intake Rate — On-Site Commercial
Dichloroethane, 1,2-	2.5E-3		1.0E-5		2.5E-8
Dichloroethene, cis-1,2-	5.5E-1		2.8E-5		1.6E-5
Dichloroethene,1,2-trans-	2.5E-3		2.8E-5		7.1E-8
Tetrachloroethene	1.2E-1		1.0E-5		1.2E-6
Trichloroethene	9.1E-2		1.0E-5		9.2E-7
Vinyl chloride	3.8E-2		1.0E-5		3.9E-7

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr; ET = Exposure time (hrs/day); IR = Intake rate (mg/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

OUTSIDE AREA

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North/Outside Site Location: 1266 66th Street Completed By: James E. Gribi Date Completed: 6/1/1999

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

INGESTION

Exposure Concentration

Constituents of Concern	1) Source Medium: Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day): On-Site Residential	2) Exposure Multiplier: On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2): On-Site Residential	3) Average Daily Intake Rate: On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.): On-Site Residential	TOTAL PATHWAY INTAKE: On-Site Commercial
Dichloroethane, 1,2-	2.5E-3		1.7E-7		4.4E-10		2.6E-8
Dichloroethene, cis-1,2-	5.5E-1		4.9E-7		2.7E-7		1.6E-5
Dichloroethene,1,2-trans-	2.5E-3		4.9E-7		1.2E-9		7.2E-8
Tetrachloroethene	1.2E-1		1.7E-7		2.1E-8		1.2E-6
Trichloroethene	9.1E-2		1.7E-7		1.6E-8		9.4E-7
Vinyl chloride	3.8E-2		1.7E-7		6.7E-9		3.9E-7

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr); ET = Exposure time (hrs/day); IR = Intake rate (mg/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

OUTSIDE AREA

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2**

Site Name: LSI-North/Outside | Site Location: 1266 66th Street | Completed By: James E. Gribi | Date Completed: 6/1/1999 | *3 OF 4*

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS ■ **(CHECKED IF PATHWAYS ARE ACTIVE)**

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential	(4) Individual COC Risk (2) x (3) On-Site Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial
Dichloroethane, 1,2-	B2		2.6E-8	9.1E-2		2.3E-9					
Dichloroethene, cis-1,2-	D							1.6E-5	1.0E-2		1.6E-3
Dichloroethene,1,2-trans-								7.2E-8	2.0E-2		3.6E-6
Tetrachloroethene	C-B2		1.2E-6	5.2E-2		6.5E-8		3.5E-6	1.0E-2		3.5E-4
Trichloroethene			9.4E-7	1.1E-2		1.0E-8		2.6E-6	6.0E-3		4.4E-4
Vinyl chloride	A		3.9E-7	1.9E+0		7.5E-7					

Total Pathway Carcinogenic Risk = **0.0E+0** **8.3E-7**

Total Pathway Hazard Index = **0.0E+0** **2.4E-3**

Software: GSI RBCA Spreadsheet
Version: 1.0.1
Serial: G-487-QXX-168

Site Name: LSI-North Property
Site Location: 1266 66th Street, Emeryville, California

Completed By: James E. Gribi
Date Completed: 6/1/1999

INSIDE AREA

TIER 2 BASELINE RISK SUMMARY TABLE

EXPOSURE PATHWAY	BASELINE CARCINOGENIC RISK: Individual COC Risk – Maximum Value	Individual COC Risk – Target Risk	Cumulative COC Risk – Total Value	Cumulative COC Risk – Target Risk	Risk Limit(s) Exceeded?	BASELINE TOXIC EFFECTS: Hazard Quotient – Maximum Value	Hazard Quotient – Applicable Limit	Hazard Index – Total Value	Hazard Index – Applicable Limit	Toxicity Limit(s) Exceeded?
OUTDOOR AIR EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
INDOOR AIR EXPOSURE PATHWAYS										
Complete:	1.8E-5	1.0E-5	2.0E-5	N/A	■	2.2E-2	1.0E+0	2.2E-2	N/A	□
SOIL EXPOSURE PATHWAYS										
Complete:	9.8E-8	1.0E-5	1.5E-7	N/A	□	2.5E-4	1.0E+0	3.0E-4	N/A	□
GROUNDWATER EXPOSURE PATHWAYS										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)										
	1.8E-5	1.0E-5	2.0E-5	N/A	■	2.2E-2	1.0E+0	2.2E-2	N/A	□

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North Indoor | Site Location: 1266 66th Street, Emeryville, Califor | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SUBSURFACE SOILS:

VAPOR INTRUSION TO BUILDINGS

Exposure Concentration

Constituents of Concern	1) Source Medium: Subsurface Soil Conc. (mg/kg)	2) NAF Value (m^3/kg) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	5) Average Daily Intake Rate: (mg/kg-day) (3) X (4): On-Site Commercial
Dichloroethane, 1,2-	6.8E-3	1.8E+2	3.8E-5	7.0E-2	2.7E-6
Dichloroethene, cis-1,2-	7.7E-3	7.6E+1	1.0E-4	2.0E-1	2.0E-5
Dichloroethene,1,2-trans-	2.5E-3	7.6E+1	3.3E-5	2.0E-1	6.5E-6
Tetrachloroethene	2.0E-2	7.6E+1	2.6E-4	7.0E-2	1.8E-5
Trichloroethene	5.5E-3	7.6E+1	7.3E-5	7.0E-2	5.1E-6
Vinyl chloride	8.4E-3	7.6E+1	1.1E-4	7.0E-2	7.8E-6

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North Indoor | Site Location: 1266 66th Street, Emeryville, I | Completed By: James E. Gribi | Date Completed: 6/1/1999 |

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER:
VAPOR INTRUSION TO BUILDINGS

Exposure Concentration

Constituents of Concern	1) Source Medium: Groundwater Conc. (mg/L)	2) NAF Value (m^3/L) Receptor: On-Site Commercial	3) Exposure Medium: Indoor Air: POE Conc. (mg/m^3) (1) / (2): On-Site Commercial	4) Exposure Multiplier: (IRxEFxED)/(BWxAT) (m^3/kg-day): On-Site Commercial	5) Average Daily Intake Rate: (mg/kg-day) (3) X (4): On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from subsurface & groundwater routes.): On-Site Commercial
Dichloroethane, 1,2-	1.3E-1	4.8E+2	2.8E-4	7.0E-2	2.0E-5	2.2E-5
Dichloroethene, cis-1,2-	5.8E-2	4.2E+1	1.4E-3	2.0E-1	2.7E-4	2.9E-4
Dichloroethene,1,2-trans-	4.2E-3	1.9E+2	2.2E-5	2.0E-1	4.2E-6	1.1E-5
Tetrachloroethene	7.0E-2	4.7E+1	1.5E-3	7.0E-2	1.0E-4	1.2E-4
Trichloroethene	2.6E-2	6.6E+1	3.9E-4	7.0E-2	2.7E-5	3.2E-5
Vinyl chloride	8.4E-3	1.1E+1	7.3E-4	7.0E-2	5.1E-5	5.9E-5

NOTE:
ABS = Dermal absorption factor (dim)
AF = Adherance factor (mg/cm^2)
AT = Averaging time (days)
BW = Body weight (kg)
CF = Units conversion factor
ED = Exposure duration (yrs)
EF = Exposure frequencey (days/yr)
ET = Exposure time (hrs/day)
IR = Inhalation rate (m^3/day)
POE = Point of exposure
SA = Skin exposure area (cm^2/day)

INSIDE AREA

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2**

Site Name: LSI-North Indoor | Site Location: 1266 66th Street, Emeryville, California | Completed By: James E. Gribi | Date Completed: 6/1/1999 | *2 OF 4*

TIER 2 PATHWAY RISK CALCULATION

INDOOR AIR EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAYS ARE ACTIVE)

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site	Commercial	(3) Inhalation Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site	Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site	Commercial	(6) Inhalation Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site	Commercial
Dichloroethane, 1,2-	B2		2.2E-5	9.1E-2		2.0E-6		6.3E-5	2.9E-3		2.2E-2
Dichloroethene, cis-1,2-	D										
Dichloroethene,1,2-trans-											
Tetrachloroethene	C-B2		1.2E-4	2.0E-3		2.5E-7					
Trichloroethene			3.2E-5	6.0E-3		1.9E-7					
Vinyl chloride	A		5.9E-5	3.0E-1		1.8E-5					

Total Pathway Carcinogenic Risk = 0.0E+0 | 2.0E-5

Total Pathway Hazard Index = 0.0E+0 | 2.2E-2

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North Indoor Site Location: 1266 66th Street, Emeryville, California Completed By: James E. G Date Completed: 6/1/1999

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

DERMAL CONTACT

Constituents of Concern	Exposure Concentration 1) Source Medium: Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day): On-Site Residential	2) Exposure Multiplier (SAxAFxABSxCFxEFxED)/(BWxAT) (kg/kg-day): On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2): On-Site Residential	3) Average Daily Intake Rate (mg/kg-day) (1) x (2): On-Site Commercial
Dichloroethane, 1,2-	5.0E-3		1.0E-5		5.1E-8
Dichloroethene, cis-1,2-	5.0E-3		2.8E-5		1.4E-7
Dichloroethene, 1,2-trans-	5.0E-3		2.8E-5		1.4E-7
Tetrachloroethene	8.7E-2		1.0E-5		8.8E-7
Trichloroethene	5.0E-3		1.0E-5		5.1E-8
Vinyl chloride	5.0E-3		1.0E-5		5.1E-8

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequencey (days/yr; ET = Exposure time (hrs/day); IR = Intake rate (mg/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.1**

Site Name: LSI-North Indoor Site Location: 1266 66th Street, Emeryville, Completed By: James E. Gribi Date Completed: 6/1/1999

TIER 2 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

SOIL EXPOSURE PATHWAYS ■ (CHECKED IF PATHWAY IS ACTIVE)

SURFACE SOILS OR SEDIMENTS:

INGESTION

Constituents of Concern	Exposure Concentration: 1) Source Medium — Surface Soil Conc. (mg/kg)	2) Exposure Multiplier (IRxCFxEFxED)/(BWxAT) (kg/kg-day) — On-Site Residential	2) Exposure Multiplier — On-Site Commercial	3) Average Daily Intake Rate (mg/kg-day) (1) x (2) — On-Site Residential	3) Average Daily Intake Rate — On-Site Commercial	TOTAL PATHWAY INTAKE (mg/kg-day) (Sum intake values from dermal & ingestion routes.) — On-Site Residential	TOTAL PATHWAY INTAKE — On-Site Commercial
Dichloroethane, 1,2-	5.0E-3		1.7E-7		8.7E-10		5.2E-8
Dichloroethene, cis-1,2-	5.0E-3		4.9E-7		2.4E-9		1.4E-7
Dichloroethene,1,2-trans-	5.0E-3		4.9E-7		2.4E-9		1.4E-7
Tetrachloroethene	8.7E-2		1.7E-7		1.5E-8		9.0E-7
Trichloroethene	5.0E-3		1.7E-7		8.7E-10		5.2E-8
Vinyl chloride	5.0E-3		1.7E-7		8.7E-10		5.2E-8

NOTE: ABS = Dermal absorption factor (dim); AF = Adherance factor (mg/cm^2); AT = Averaging time (days); BW = Body weight (kg); CF = Units conversion factor; ED = Exposure duration (yrs); EF = Exposure frequency (days/yr); ET = Exposure time (hrs/day); IR = Intake rate (mg/day); POE = Point of exposure; SA = Skin exposure area (cm^2/day)

INSIDE AREA

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.2**

Site Name: LSI-North Indoor | Site Location: 1266 66th Street, Emeryville, California | Completed By: James E. Gribi | Date Completed: 6/1/1999 | *3 OF 4*

TIER 2 PATHWAY RISK CALCULATION

SOIL EXPOSURE PATHWAYS ■ **(CHECKED IF PATHWAYS ARE ACTIVE)**

Constituents of Concern	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK: (2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Residential	(2) Total Carcinogenic Intake Rate (mg/kg/day) On-Site Commercial	(3) Oral Slope Factor (mg/kg-day)^-1	(4) Individual COC Risk (2) x (3) On-Site Residential	(4) Individual COC Risk (2) x (3) On-Site Commercial	TOXIC EFFECTS: (5) Total Toxicant Intake Rate (mg/kg/day) On-Site Residential	(5) Total Toxicant Intake Rate (mg/kg/day) On-Site Commercial	(6) Oral Reference Dose (mg/kg-day)	(7) Individual COC Hazard Quotient (5) / (6) On-Site Residential	(7) Individual COC Hazard Quotient (5) / (6) On-Site Commercial
Dichloroethane, 1,2-	B2		5.2E-8	9.1E-2		4.7E-9					
Dichloroethene, cis-1,2-	D							1.4E-7	1.0E-2		1.4E-5
Dichloroethene,1,2-trans-								1.4E-7	2.0E-2		7.2E-6
Tetrachloroethene	C-B2		9.0E-7	5.2E-2		4.7E-8		2.5E-6	1.0E-2		2.5E-4
Trichloroethene			5.2E-8	1.1E-2		5.7E-10		1.4E-7	6.0E-3		2.4E-5
Vinyl chloride	A		5.2E-8	1.9E+0		9.8E-8					
Total Pathway Carcinogenic Risk =					0.0E+0	1.5E-7	***Total Pathway Hazard Index =***			0.0E+0	3.0E-4

Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-467-QXX-168