Foundry/Corporate Office

7825 San Leandro Street
Oakland, CA 94621-2598
510/632-3467
510/632-8035 Fax

Los Angeles Service Center

15006 Nelson Avenue
City of Industry, CA 91744-4331
626/333-4882
626/333-8681 Fax

April 22, 2009

Mr. Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Fuel Leak Case No. RO0000092 and Geotracker Global ID T0600100065 Supplemental Soil Vapor Investigation Report, AB&I Foundry, 7825 San Leandro Street, Oakland California 94621

Dear Mr. Wickham:

AB&I respectfully submits the attached Supplemental Soil Vapor Investigation Report for the AB&I Foundry Site located at 7825 San Leandro Street, Oakland, California.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document are true and correct to the best of my knowledge.

Sincerely,

Dave Robinson
Engineering Manager

Attachment: Supplemental Soil Vapor Investigation Report, AB&I Foundry, 7825 San Leandro Street, Oakland, California

SUPPLEMENTAL SOIL VAPOR INVESTIGATION REPORT

AB&I Foundry
7825 San Leandro Street
Oakland, California

01-ABI-001

Prepared For:

7825 San Leandro Street
Oakland, California

Prepared By:

3451-C Vincent Road
Pleasant Hill, California 94523

April 22, 2009

Prepared By:

Nathan Colton
Senior Staff Scientist

Reviewed By:

Kent R. Reynolds
Principal Geologist

Jon Philipp, PG, C.HG.
Senior Hydrogeologist

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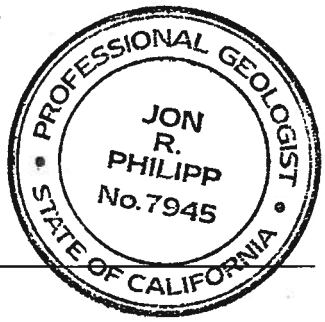
CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations in this document regarding the AB&I Foundry Site have been prepared under the supervision of and reviewed by the certified professional whose signature appears below.



Jon Philipp, P.G., C.HG.
Senior Hydrogeologist
The Source Group, Inc.
California Professional Geologist No. 7945

4/22/09
Date

1.0 INTRODUCTION

This document presents the results of a supplemental soil vapor investigation conducted at the AB&I Foundry (AB&I) facility, located at 7825 San Leandro Street, in Oakland, California (the Site, Figure 1). This Supplemental Soil Vapor Investigation Report was prepared in response to recommendations provided by The Source Group, Inc. (SGI) in the report titled, Report For Additional Site Investigation, dated September 25, 2008 (Additional Site Investigation Report). SGI prepared this Supplemental Soil Vapor Investigation Report on behalf of AB&I for submittal to the Alameda County Environmental Health Department (ACEH).

2.0 BACKGROUND

2.1 Site Description

The Site is located at 7825 San Leandro Street, east of the intersection with 77th Avenue in a light industrial area of Oakland (Figures 1 and 2). The Site is surrounded by commercial/industrial properties to the north, south, east, and west. Union Pacific Railroad is located immediately adjacent to and west of the Site. Oakland Truck Stop is located immediately adjacent to and east of the Site. Elmhurst Creek is located along the southeast corner of the property (Figure 2). San Leandro Bay is located approximately one mile west of the Site.

2.2 Site History and Operations

AB&I has been operating at its present location since at least 1930. Business activities include the manufacture of cast pipe and fittings. The facility accepts scrap iron and steel, which it stockpiles on-site and uses during manufacturing activities. The Site encompasses an area of approximately 11.8 acres. The Site contains various warehouses, manufacturing and office buildings. The entire Site is covered with buildings and asphalt/concrete pavement. Seven underground storage tanks (USTs) were previously located on the Site. The USTs included one 8,000-gallon UST used for storing unleaded gasoline, one 8,000-gallon UST used for the storage of mineral spirits and later 1,1,1-trichloroethane (1,1,1-TCA), one 550-gallon UST used for storing regular leaded gasoline, one 10,000-gallon UST used for storing diesel, and three 10,000-gallon USTs used for storing gasoline. All UST have been removed from the Site. UST removal activities were initiated in 1982 and completed in the early 1990s.

2.3 Previous Soil Gas Investigations

Two soil gas investigations were conducted in 2007 and 2008. During these investigations, soil gas samples were collected to assess the potential for vapor intrusion into the office building located adjacent to the former 550-gallon gasoline UST Area (Figure 3). During the 2008 investigation, five soil vapor samples were collected at the Site, four of which were collected from underneath a concrete slab located in the open-air portion of the Office Building (Figure 3). Of the four sample locations in the Office Building, two sample locations (SG-13 and SG-14) had no detectable concentrations of any compounds. Samples collected from the remaining two locations in the Office Building had detectable concentrations of tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride, and m,p-xylene. The concentrations of PCE detected in soil gas sample SG-16A at a depth of 0.5 feet below the concrete slab was above its respective environmental screening level (ESL) under the commercial exposure scenario. Vinyl chloride was identified at the SG-16B location in the sample collected from a depth of 5-feet below ground surface (bgs) and at the SG-12B location, also collected from a depth of 5-feet bgs. Both vinyl chloride concentrations were above the ESL under the commercial exposure scenario. The presence of higher

concentrations of PCE in shallow soil gas samples, along with the presence of daughter products from the breakdown of PCE in deeper soil gas samples, was interpreted by SGI to be the result of isolated surface spills and unrelated to groundwater. Further details can be found in SGI's reports titled, "Site Investigation Report" and "Additional Site Investigation Report" (SGI, 2008a; SGI, 2008b).

Due to the ESL exceedences described above, SGI recommended an additional soil gas survey from points beneath the concrete slab located in the indoor portions of the Office Building (i.e., lunchroom, locker room, training room, and human resource [HR]/safety offices) to confirm that PCE and vinyl chloride exceedences do not pose a threat to indoor air quality.

On November 4, 2008, ACEH issued a letter to AB&I requesting a work plan to conduct an additional soil gas (soil vapor) investigation (ACEH, 2008).

On January 9, 2009, SGI submitted a work plan to ACEH titled, "Supplemental Soil Vapor Investigation Work Plan" (SGI, 2009). The work plan was subsequently approved by ACEH on January 27, 2009 (ACEH, 2009).

3.0 PURPOSE AND OBJECTIVES

The purpose of this indoor air investigation was to assess soil gas conditions beneath the enclosed portions of the Office Building, and assess any potential health effects to indoor workers related to soil gas. Specific objectives were as follows:

- Collect soil gas samples from the lunchroom, locker room, employee training room, and HR/safety offices; and
- Evaluate potential human health risk to indoor workers based on the soil gas results.

4.0 SOIL GAS INVESTIGATION

On March 13, 2009, three soil gas samples were collected in the area of the employee training classroom, locker room, and the lunchroom (Figure 3). The three samples, SG-17, SG-18, and SG-19, were advanced to a total depth of 1.5-feet bgs. A fourth soil gas sample was attempted in the area of the HR/safety offices. However, due to the excessive thickness of the concrete floor (greater than 12-inches), the concrete was unable to be penetrated and a sample was not collected. Soil gas samples were collected to assess the risk associated with previous detections of PCE and vinyl chloride at concentrations above ESLs at locations (open-air portion of the office building) adjacent to the indoor portion of the Office Building.

4.1 Prefield Activities

Prior to initiating fieldwork a soil-boring permit was obtained from the Alameda County Public Works Department.

4.2 Soil Gas Sampling Activities

Soil gas samples were collected in accordance with the requirements of the January 2003 Active Soil Gas Investigation Advisory, published by the DTSC and the California Regional Water Quality Control Board (CRWQCB), Los Angeles Region. Soil gas samples were collected from discrete depths. The initial sample hole was advanced using a rotor hammer drill equipped with a 24-inch long by 1-inch diameter drill bit. Once the borehole was advanced, a soil gas implant attached to polyurethane tubing was set at the bottom of the borehole. Following the placement of the implant, the borehole was filled with sand and sealed at the surface using bentonite grout. Prior to sample collection, one tube volume of air was purged. Soil gas samples were collected through the polyethylene tubing into a syringe, and immediately transferred to the on-site mobile laboratory for analysis. During collection of the soil gas sample, a leak detection gas (1,1 Difluoroethane) in the form of a dust aerosol can was sprayed near the surface of the borehole to check for leaks. The target depth of each soil gas sample was 5-feet bgs. However, all three of the boreholes (SG-17, SG-18, and SG-19) met refusal at a depth of approximately 1.5-feet bgs. Three attempts were made to advance the fourth borehole in the area of the HR/safety offices. However, due to the excessive thickness of the concrete (greater than 12-inches) at each attempted sample location, the drill was unable to penetrate the concrete and no sample was collected.

The sample containers were labeled with a unique sample-point identification and the date and time of collection. Samples were taken to an on-site mobile laboratory operated by TEG Northern California, Inc. (Rancho Cordova, California), logged onto the chain-of-custody form, assigned a laboratory identification number and analyzed for VOCs using EPA Method 8260B.

After removing the sample rod and associated equipment from the ground, the borehole was sealed using cement grout and capped with concrete at the surface.

4.3 Equipment Decontamination

To minimize the potential for cross-contamination, soil gas equipment was decontaminated prior to initiating work at each sample location. The boring rods did not come into contact with the soil gas sample and thus only needed to be brushed clean of soil between sample locations. The drop off point, nylon 1/8-inch tubing, and sampling syringes were all disposable, and new pieces were used for each sample. The threaded point holder was decontaminated by an Aquanox wash and potable water rinse.

5.0 SOIL GAS INVESTIGATION RESULTS

Soil gas samples were analyzed for EPA target list volatiles using EPA Method 8260B. Of the constituents analyzed, only PCE and benzene were detected above laboratory reporting limits. Benzene was detected at a concentration of 0.15 micrograms per liter (µg/L) from soil gas sample SG-18 collected in the area of the locker room. PCE was detected at a concentration of 3.1 µg/L in sample SG-19 collected in the area of the lunchroom. Only PCE exceeded its ESL of 1.4 µg/L for indoor air vapor intrusion concerns under the commercial land-use scenario. The sample collected from the training room (SG-17) did not have concentrations of any compound above laboratory reporting limits. Laboratory results are included as Appendix A.

6.0 SITE-SPECIFIC RISK ASSESSMENT FOR TETRACHLOROETHENE

Based on the results, PCE was the only compound detected in soil gas samples collected from within the indoor air portions of the office building at a concentration above CRWQCB ESLs for the commercial land-use scenario. This site-specific risk assessment was conducted to identify potential adverse noncancer health effects and excess cancer risks associated with PCE in soil gas underlying the interior portion of the Office Building.

CRWQCB ESLs correspond to an excess cancer risk of 1×10^{-6} based on standardized equations (CRWQCB, 2007) that combine exposure assumptions with agency-derived toxicity data. In order to estimate site-specific human health risks, a human health risk evaluation was performed using the Johnson and Ettinger Model, a standard USEPA method, and measured soil gas sampling results for PCE. Excess cancer risks were compared to the USEPA recommended target excess cancer risk range of one-in-one-million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}; USEPA, 1989). The Johnson and Ettiger Model calculated excess cancer risk value based on the detected PCE soil gas concentration of 3.0 µg/L at a depth of 1.5 feet bgs in silty soil was 9×10^{-6} (see Appendix B), which is within the USEPA acceptable risk range.

As quoted from the CRWQCB's ESL (CRWQCB, 2007) document:

> Remediation or risk management is rarely warranted at sites where the estimated cancer risk does not exceed 10^{-6}. Remediation or risk management is almost always warranted at sites where the estimated cancer risk exceeds 10^{-4}. For sites where the estimated risk is between 10^{-4} and 10^{-6}, the need for active remediation or risk management is evaluated on a site-specific basis (i.e., risks within this range are "potentially acceptable", depending on site-specific considerations)

The estimated cancer risk was based on a commercial/industrial worker that spends the entire workday indoors for 250 days a year for 25 years. Based on the known occupants of the lunchroom, the exposure scenario evaluated in this assessment likely overestimates risk (i.e., actual receptors at the Site spend much less time in the lunchroom). Furthermore, in the area where workers might spend the entire workday indoors (i.e. the HR/safety office), the floor is comprised of at least a 12-inch layer of concrete, the surface of which has been painted. Therefore, it is unlikely that any soil gas vapors that may be present beneath the concrete slab will significantly impact indoor air quality under the current exposure scenario.

7.0 CONCLUSIONS AND RECOMMENDATIONS

PCE and benzene continue to be the most prevalent compounds in soil gas in the vicinity of the office building. Based on previous ESL exceedences for benzene and PCE in soil gas samples collected near the office building and in areas located within the open-air portions of the office building, there were concerns about threats to indoor air quality within the office building. Of the three samples collected from within the interior portions of the Office Building, only one had a concentration of PCE above ESLs. Because PCE exceeded its ESL, a site-specific risk assessment was performed to estimate human health risks. Using the data collected, the calculated total excess cancer risk estimate was within the USEPA acceptable risk range. Furthermore, based on the known use of the lunchroom and the construction of the HR/safety office floor, the exposure scenario evaluated in this assessment likely overestimates the risk to workers. Therefore, SGI believes that risks posed by subsurface soil gas concentrations are acceptable and does not recommend any further action.

8.0 REFERENCES

Alameda County Department of Environmental Health (ACDEH, 2008). Letter regarding, "Fuel Leak Case No. RO0000092, American Brass & Iron Foundry, 7825 San Leandro Street, Oakland, California", November 4.

Alameda County Department of Environmental Health (ACDEH, 2009). Letter regarding, "Fuel Leak Case No. RO0000092, American Brass & Iron Foundry, 7825 San Leandro Street, Oakland, California", January 27.

California Department of Toxic Substances Control (DTSC), California Regional Water Quality Control Board – Los Angeles Region (CRWQCLA) 2003. "Advisory – Soil Gas Investigation, January 28.

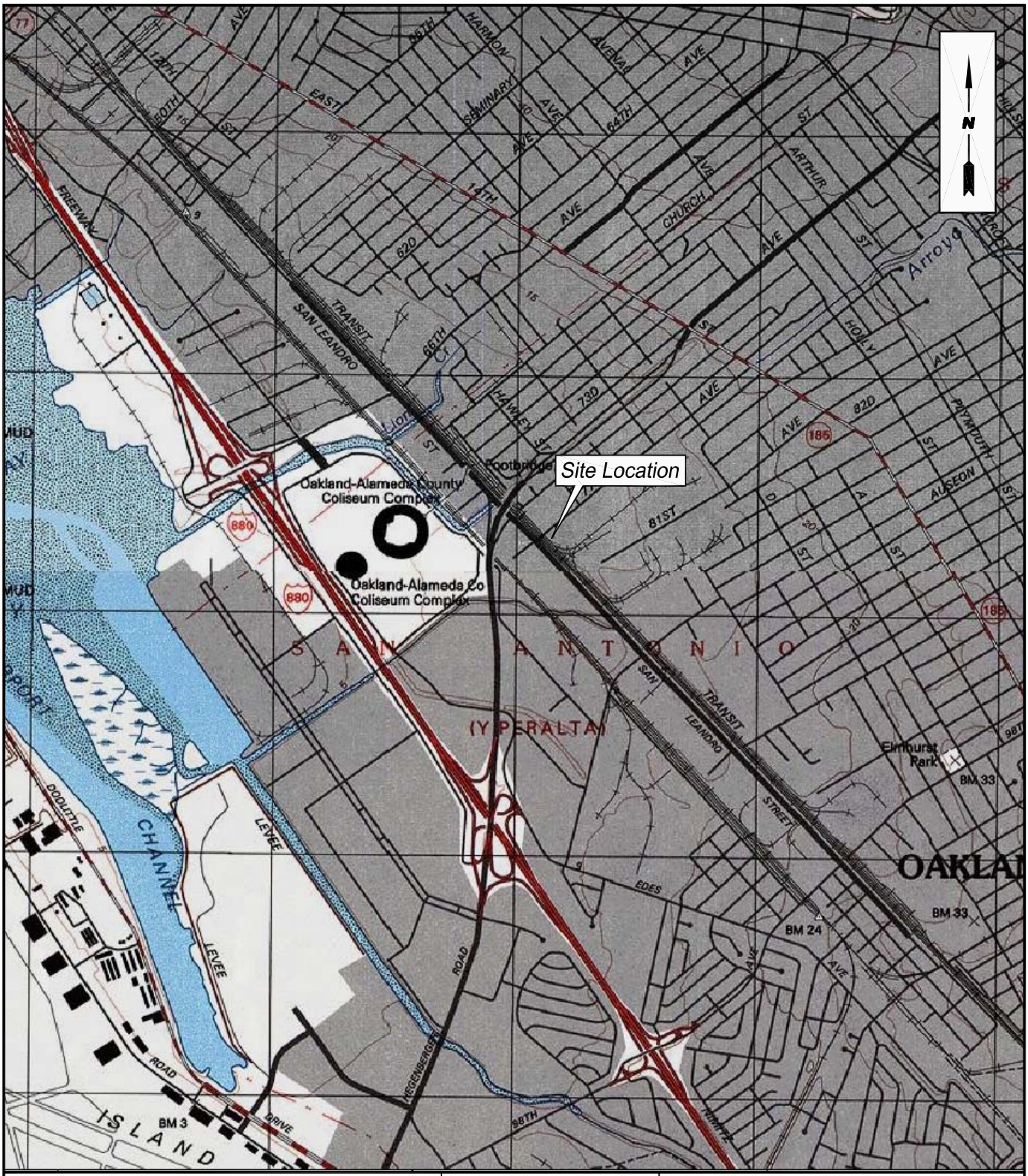
California Regional Water Quality Control Board (CRWQCB, 2007). Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final. November.

The Source Group, Inc. (SGI, 2008a). "Site Investigation Report", AB&I Foundry, 7825 San Leandro Street, Oakland, California, February 14.

The Source Group, Inc. (SGI, 2008b). "Additional Site Investigation Report", AB&I Foundry, 7825 San Leandro Street, Oakland, California, September 25.

The Source Group, Inc. (SGI, 2009). "Supplemental Soil Vapor Investigation Work Plan", AB&I Foundry, 7825 San Leandro Street, Oakland, California, January 9.

FIGURES



THE SOURCE GROUP, INC.
environmental

3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SOURCE: U.S.G.S. 7.5' QUAD SHEET
OAKLAND EAST, CALIFORNIA
PHOTOREVISED 1997

SCALE: 0 FEET 2000 SCALE

SITE LOCATION MAP

CLIENT: AB&I FOUNDRY

DATE: 6/27/07

LOCATION: 7825 San Leandro Street
Oakland, California

FIGURE: 1

SAN LEANDRO STREET

76TH AVENUE

Office Building

Former 550-gallon Gasoline UST Area

Approximate Limits of Excavation

Former 550-gallon Gasoline UST

Former Fuel Dispenser Islands

Former Concrete Pad

Approximate location of three 10,000-gallon USTs

Fuel Dispenser

MW-4

MW-6

MW-3

MW-5

Former 8,000-gallon Gasoline UST

MW-9

Finished Goods Storage

Shipping Yard

MW-2

MW-8

Former 8,000-gallon Mineral Spirits/1,1,1-TCA UST

MW-2R

Approximate Limits of Excavation

Pattern Storage

Fuel Pump and Piping

Former 8,000-Gallon Mineral Spirits/ 1,1,1-TCA UST Area

Production Area

HEAVY EQUIPMENT AREA (INACCESSIBLE)

Former Three 10,000-Gallon USTs Area

Pipe Finishing

Parking Lot Area

Former 10,000-Gallon Diesel UST Area

MW-7

Former 10,000-gallon Diesel UST Area

Approximate Limits of Excavation

SHED

MW-1

1,000-gallon Diesel AST

Custom Finishing

SCRAP PILE AREA

Elmhurst Creek

Waste Sand Storage

HEAVY EQUIPMENT AREA (INACCESSIBLE)

Water Supply Well

Stormwater Treatment System

N

0 FEET 80

SCALE

UNION PACIFIC RAILROAD

Legend

MW-1 — Existing Monitoring Well Location (BSK, 1993, 2006)

MW-1 — Abandoned Monitoring Well (BSK, 2006)

UST — Underground Storage Tank

SITE PLAN

AB&I FOUNDRY
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

Date: 1/19/08

Figure: 2

All figures.dwg

SG-17	
Depth	1.5'
PCE	<0.1
Vinyl Chloride	<0.05
1,1-DCE	<0.1
Benzene	<0.08
Toluene	<0.2
Ethylbenzene	<0.1
m,p-xylene	<0.2

SG-18	
Depth	1.5'
PCE	<0.1/<0.1
Vinyl Chloride	<0.05/<0.05
1,1-DCE	<0.1/<0.1
Benzene	0.15/0.15
Toluene	<0.2/<0.2
Ethylbenzene	<0.1/<0.1
m,p-xylene	<0.2/<0.2

SG-19	
Depth	1.5'
PCE	3.1/3.0
Vinyl Chloride	<0.05/<0.05
1,1-DCE	<0.1/<0.1
Benzene	<0.08/<0.08
Toluene	<0.2/<0.2
Ethylbenzene	<0.1/<0.1
m,p-xylene	<0.2/<0.2

Approximate Limits of Excavation
Former 550-gallon Gasoline UST
Office Building
Former Fuel Dispenser Islands
Approximate location of three 10,000-gallon USTs
Former 8,000-gallon Gasoline UST
Former 8,000-gallon Mineral Spirits/1,1,1-TCA UST
Approximate Limits of Excavation
Finished Goods Storage
Pattern Storage
Fuel Dispenser
Janitors Closet
Front Entrance
Safety Training Area
Storage Area
Vending Machine Room
Locker Area
Shower Area
Circular Sink
Break Room
HR (office)
Safety (office)
Electrical Panel Room
MW-3
MW-4
MW-5
MW-8
MW-2
MW-2R
MW-9
SG-1
SG-2
SG-3
SG-4
SG-5
SG-6
SG-7
SG-8
SG-9
SG-10
SG-12
SG-13 A,B
SG-14
SB16 A,B

Legend

MW-7	Existing Monitoring Well Location
MW-2	Abandoned Monitoring Well
△	Soil Gas Sample Location (SGI 2007)
▲	Soil Gas Sample Location (SGI 2008)
◬	Soil Gas Sample Location (SGI 2009)
◭	Attempted Soil Gas Sample Locations
PCE	Tetrachloroethene
UST	Underground Storage Tank
1,1,1-TCA	1,1,1-trichloroethane
<0.20	Concentrations reported at or below the laboratory reporting limit of 0.20 (µg/L)

-Concentrations in bold exceed Environmental Screening Levels (ESLs) taken from the California Regional Water Quality Control Board, San Francisco Bay Region document entitled, "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater", Interim Final November 2007, updated May 2008, Table E-1

N

0 FEET 30
SCALE

SOIL GAS SAMPLE RESULTS

AB&I FOUNDRY
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

Date: 4/6/09
Figure: 3
All figures.dwg

TABLES

Table 1
Summary of Soil Gas Sample Results
AB&I Foundry
7825 San Leandro Street
Oakland, California

Sample ID	Purge Volume	Depth (feet bgs)	Date	PCE	Benzene
RWQCB ESLs	**Commercial**			**1.4**	**0.28**
SG-17	1	1.5	3/13/09	<0.1	<0.08
SG-18	1	1.5	3/13/09	<0.1	0.15
SG-18 (D)	1	1.5	3/13/09	<0.1	0.15
SG-19	1	1.5	3/13/09	3.1	<0.08
SG-19 (D)	1	1.5	3/13/09	3	<0.08

Notes:

µg/L - all concentrations expressed in micrograms per liter (µg/l)

(D) - Duplicate sample

feet bgs - feet below ground surface

PCE - Tetrachloroethene

<0.10 - Not reported at or above laboratory's reporting limit of 0.10 µg/L

RWQCB ESLs - Environmental Screening Levels taken from the California Regional Water Quality Control Board, San Francisco Bay Region document entitled "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater," Interim Final November 2007, updated May 2008, Residential and Commercial/Industrial Land Use.

- Samples analyzed using EPA Method 8260B by Transglobal Environmental Geochemistry, Rancho Cordova, California

- Concentrations in bold exceed ESLs for indoor air vapor intrusion concerns - Commercial/Industrial Use

APPENDIX A

SOIL GAS LABORATORY REPORT

1 April 2009

Mr. Kent Reynolds
The Source Group, Inc.
3451-C Vincent Road
Pleasant Hill, CA 94523

SUBJECT: DATA REPORT - The Source Group, Inc. Project # 01-ABI.001
7825 San Leandro Street, Oakland, California

TEG Project # 90313D-1

Mr. Reynolds:

Please find enclosed a data report for the samples analyzed from the above referenced project for The Source Group. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 5 analyses on 5 soil vapor samples.

-- 5 analyses on soil vapors for selected volatile organic hydrocarbons by EPA method 8260B.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and calibration data are included in the tables.

1,1 difluoroethane was used as a leak check compound around the probe rods during the soil vapor sampling. No 1,1 difluoroethane was detected in any of the vapor samples reported at or above the DTSC recommended leak check compound reporting limit of 10 ug/L of vapor.

TEG appreciates the opportunity to have provided analytical services to The Source Group on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California

teg

The Source Group Project # 01-ABI.001
7825 San Leandro Street
Oakland, California

TEG Project #90313D-1

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		Probe Blank	SG-17	SG-18	SG-18 dup	SG-19	SG-19 dup
SAMPLE DEPTH (feet):			1.5	1.5	1.5	1.5	1.5
PURGE VOLUME:			1	1	1	1	1
COLLECTION DATE:		3/13/09	3/13/09	3/13/09	3/13/09	3/13/09	3/13/09
COLLECTION TIME:		07:17	10:15	10:37	10:37	11:21	11:21
DILUTION FACTOR (VOCs):		1	1	1	1	1	1
	RL						
Dichlorodifluoromethane	100	nd	nd	nd	nd	nd	nd
Vinyl Chloride	50	nd	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
Chloroform	100	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	100	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	100	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	90	nd	nd	nd	nd	nd	nd
Benzene	80	nd	nd	150	150	nd	nd
Trichloroethene	100	nd	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd	nd
Tetrachloroethene	100	nd	nd	nd	nd	3100	3000
Ethylbenzene	100	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	100	nd	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		103%	119%	102%	101%	102%	102%
Surrogate Recovery (1,2-DCA-d4)		98%	132%	100%	99%	95%	99%
Surrogate Recovery (1,4-BFB)		106%	117%	110%	110%	108%	109%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Mr. Jon Edmondson

11350 Monier Park Place, Rancho Cordova, CA 95742 Phone: (916) 853-8010 Fax: (916) 853-8020

teg

The Source Group Project # 01-ABI.001
7825 San Leandro Street
Oakland, California

TEG Project #90313D-1

CALIBRATION STANDARDS - Initial Calibration / LCS

Instrument: Agilent 5973N MSD

	INITIAL CALIBRATION		LCS	
COMPOUND	*RF*	*%RSD*	*RF*	*%DIFF*
*Dichlorodifluoromethane**	*0.397*	*4.9%*	*0.418*	*5.3%*
*Vinyl Chloride**	*0.324*	*7.3%*	*0.334*	*3.1%*
*Chloroethane**	*0.152*	*5.7%*	*0.158*	*3.9%*
Trichlorofluoromethane	*0.361*	*9.6%*	*0.369*	*2.2%*
1,1-Dichloroethene	*0.220*	*11.2%*	*0.239*	*8.6%*
*1,1,2-Trichloro-trifluoroethane**	*0.240*	*11.8%*	*0.259*	*7.9%*
Methylene Chloride	*0.246*	*2.9%*	*0.252*	*2.4%*
trans-1,2-Dichloroethene	*0.256*	*6.2%*	*0.276*	*7.8%*
1,1-Dichloroethane	*0.395*	*4.7%*	*0.415*	*5.1%*
cis-1,2-Dichloroethene	*0.265*	*6.5%*	*0.290*	*9.4%*
Chloroform	*0.403*	*5.6%*	*0.414*	*2.7%*
1,1,1-Trichloroethane	*0.366*	*5.9%*	*0.393*	*7.4%*
Carbon Tetrachloride	*0.340*	*9.9%*	*0.369*	*8.5%*
1,2-Dichloroethane	*0.236*	*5.6%*	*0.252*	*6.8%*
Benzene	*0.932*	*11.0%*	*1.016*	*9.0%*
Trichloroethene	*0.260*	*3.9%*	*0.280*	*7.7%*
Toluene	*0.645*	*12.6%*	*0.693*	*7.4%*
1,1,2-Trichloroethane	*0.142*	*8.1%*	*0.156*	*9.9%*
Tetrachloroethene	*0.264*	*6.0%*	*0.294*	*11.4%*
Ethylbenzene	*0.485*	*8.8%*	*0.510*	*5.2%*
1,1,1,2-Tetrachloroethane	*0.324*	*3.9%*	*0.343*	*5.9%*
m,p-Xylene	*0.599*	*12.2%*	*0.680*	*13.5%*
o-Xylene	*0.557*	*8.4%*	*0.637*	*14.4%*
1,1,2,2-Tetrachloroethane	*0.424*	*6.7%*	*0.471*	*11.1%*
Acceptable Limits		*20.0%*		*15.0%*

'' Indicates RSD not to exceed 30% & LCS not to exceed 25%*

APPENDIX B

JOHNSON AND ETTINGER MODEL FOR TETRACHLOROETHENE

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	3.00E+03			Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	30.5	24	SI		1.00E-08

Enter either a vadose zone SCS soil type OR a user-defined permeability.

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SI	1.35	0.489	0.167	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	25	25	250

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
9.0E-06	1.2E-01

MESSAGE SUMMARY BELOW:

END