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LIMITED PHASE II ESA REPORT

280-284 Starr Street

280-284 Starr Street
Brooklyn, New York 11237
BBG Project No.: 0522008490

Prepared For

Churches United for Fair Housing
7 Marcus Garvey Boulevard
New York, New York 11206

Report Date

July 19, 2022

Prepared By

BBG Assessments, LLC
Locations Nationwide

BBG Main Contact

Paul Stellato
pstellato@bbgres.com

July 19, 2022

Churches United for Fair Housing
c/o Mr. Rob Solano
280-284 Starr Street
Brooklyn, New York 11237

RE Phase II Environmental Site Assessment of
280-284 Starr Street
280-284 Starr Street
Brooklyn, New York 11237
BBG Project No.: 0522008490

Dear Mr. Solano:

BBG Assessments, LLC (BBG) has completed a Phase II Limited Environmental Site Assessment of the above referenced property. The work was conducted in accordance with BBG's letter of engagement and generally accepted industry standards. This report was prepared solely for the use of Churches United for Fair Housing (hereinafter "Client") and any party specifically referenced in Section 1.4 User Reliance. No other party shall use or rely on this report or the findings herein, without the prior written consent of BBG.

Sincerely,

BBG ASSESSMENTS, LLC

Prepared By:



Matthew Smelski
Project Manager

Reviewed By:



Paul Stellato
Managing Director

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1.0 INTRODUCTION

In accordance with our Proposal dated June 17, 2022 BBG is pleased to submit our Limited Phase II Environmental Site Assessment Report of the property located at 280-284 Starr Street, Brooklyn, New York 11237, herein referred to as the "Property."

1.1 Background and Purpose

Property Name:	280-284 Starr Street
Property Address:	280-284 Starr Street
City, State Zip Code:	Brooklyn, NY 11237

BBG's June 10, 2022 Phase I Environmental Site Assessment (ESA) identified the following Recognized Environmental Conditions (RECs) in connection with the Property.

- The Subject Property was undeveloped land until 1920, when it was developed with the current building for light manufacturing purposes. In 1933 the building was occupied by a company that manufactured store fixtures. Between 1937 and 1965 it was occupied by a machine shop of the Queens Machine Corporation. Between 1970 and 2008 the building was occupied by garment companies, such as Quarex Knitting Mills (1970-1973) and PJ Knitting Mills Inc. (1985-2008). It is safe to assume that petroleum products such as lubricant oils, and hazardous substances such as solvents and degreasers were used at the onsite machine shop. Since these activities preceded current environmental regulations, unreported or unnoticed spills and leaks may have occurred, adversely impacting soil or groundwater quality at the Subject Property.
- A vent pipe was observed attached to the Subject Property façade. No evidence of ASTs or USTs were observed at the Subject Property. However, the basement was cluttered with merchandise, discarded cardboard boxes, and other materials that impeded visual observation. Given the age of the building, and its historical manufacturing use; it is reasonable to assume that an AST or a UST was located at the Subject Property. The presence of this vent pipe, that could be connected to an out-of-use storage tank, and is considered a REC.

The purpose of this investigation was to determine if elevated concentrations of volatile organic compounds (VOCs) may be present in soil vapor underlying the Property building and ambient indoor air within the Property building. A Property Topographic Map and Property Diagrams are included in Appendix 1. Photographs of the Property are provided in Appendix 2.

1.2 Limitations and Exceptions

- The scope of work completed was designed solely to meet the needs of BBG's Client. BBG shall not be liable for any unintended usage of this report by another party.
- No subsurface investigation can wholly eliminate uncertainty regarding the presence of contamination on a property. This assessment was designed to reduce, but not eliminate the potential for environmental concerns at the Property, within reasonable limits of time and cost. The Limited Phase II ESA is not intended to be exhaustive or all-inclusive and does not represent a guarantee of the identification of all possible environmental risk.
- Client is advised that if the Limited Phase II ESA is obtained with the intent of qualifying the purchaser as an innocent landowner, contiguous property owner, or bona fide prospective purchaser under CERCLA, there will be continuing obligations of due care and responsiveness and additional legal requirements that likely apply to such status. BBG accepts and undertakes no responsibility as to such requirements and advises that counsel be separately consulted with respect to such requirements.

1.3 Special Terms and Conditions

There are no special terms and conditions associated with this Limited Phase II ESA.

1.4 Reliance

This investigation was conducted on behalf of and for the exclusive use of Churches United for Fair Housing (Client). This report, and the findings contained herein, shall not, in whole or part, be disseminated or conveyed to or used by any other party without the prior written consent of BBG. Any unauthorized party using or relying upon the Report shall be liable to BBG for equitable compensation and appropriate punitive damages and shall be responsible to reimburse BBG for and indemnify, defend and hold BBG harmless from and against any and all costs, claims, liabilities, expenses, lost profits and damages arising as a direct or indirect result of such unauthorized use or reliance.

2.0 PHASE II ACTIVITIES

2.1 Preliminary Activities

Utility Clearance

A utility inspection was performed at the Property at least 72 hours prior to the initiation of the subsurface assessment. This inspection consisted of marking the underground utility locations by authorized utility locating personnel. Prior to commencement of the drilling activities, BBG retained GPRS, Inc. to perform a geophysical survey consisting of a combination of electromagnetic (EM) and ground-penetrating (GPR) technologies. The purpose of the survey was to verify utility locations and attempt to locate a potential UST in the sidewalk area. The GPR survey did not identify any USTs near the sidewalk area, nor on the Property, but it did verify that the vent pipe identified in BBG's Phase I ESA lead into the subsurface of the basement. The basement was unable to be scanned with the GPR or fully inspected due to a large collection of debris. As such, the terminus of the suspect vent pipe was unable to be determined.

2.2 Assessment and Sampling Methods

Sub-Slab Soil Gas Sampling

On July 6, 2022, BBG conducted a limited subsurface investigation to investigate potential impacts from the historical manufacturing operations on-Site. BBG collected four sub-slab soil gas sampling (SSGS) points from beneath the basement floor and first floor level for laboratory analysis, denoted as SV1 through SV4. The location of each sample collected is provided in Appendix 1.

BBG utilized a hammer drill tipped with a 16-inch-long masonry drill bit to create the subsurface soil vapor sampling points. Six-liter Summa canisters were used to collect the soil vapor samples. Through each of the drilled holes, BBG inserted a 0.625-inch diameter (two-inch long) stainless steel screen point connected to Teflon tubing to the desired sampling depths. Filter sand was then placed around the void spaces. A hydrated bentonite clay seal was then placed around the annular space surrounding the tubing to create an airtight seal to prevent the intrusion of ambient air during sampling.

BBG performed a leak check at each soil gas sampling point. In order to perform the leak check, BBG placed a shroud on top of each summa canister and saturated the shroud with helium gas. The helium percentage within the shroud was measured using a hand-held helium detector. Subsequently, each soil vapor sampling point was purged to fill a 1-liter Tedlar bag. The air

within the bag was then screened with the helium detector to ensure less than 10 percent of the helium measured in the shroud was present. The results of each leak test indicated that all sampling points were properly sealed at the ground surface. Following purging and the leak-check, soil vapor was collected over a one-hour period into a six-liter Summa canister at each sampling point (each summa canister was each equipped with a flow regulator set for a one-hour sampling period). The bottom depth of the soil vapor sampling points was approximately three inches below the concrete surfacing in the floor levels.

All sub-slab soil gas was collected in accordance with the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 (the "Final Guidance"), revised May 2017.

Indoor/Ambient Air Sampling

Indoor air samples were collected in the vicinity of the corresponding SSGS samples, and an ambient outdoor air sample was also collected for background comparison purposes. The indoor air samples collected are denoted as IA1 through IA4, and OA1, respectively. All indoor air and outdoor air samples were collected using six-liter summa canisters equipped with regulators set for an eight-hour sampling period. No exterior doors were opened at the basement level during the course of the indoor air sampling period.

Following collection, all soil gas and indoor air samples were submitted to Pace Analytical National Lab in Mount Juliet, Tennessee under standard chain-of-custody protocol for analysis of specified list of select solvent VOCs in accordance with the New York State Department of Health (NYSDOH) Air Matrix. The specified list included the following: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (c12-DCE), 1,1-dichloroethene (11-DCE), carbon tetrachloride, 1,1,1-trichloroethane (111-TCA), methylene chloride, and vinyl chloride, as well as benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method TO-15.

2.3 Analytical Results

The NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York updated May 2017 does not currently have standards, criteria, or guidance values for concentrations of compounds in soil vapor as potential sources of indoor air impact. The NYSDOH uses decision matrices for TCE, PCE, c12-DCE, 11-DCE, carbon tetrachloride, 111-TCA, methylene chloride, and vinyl chloride, which compare sub-slab vapor concentrations to indoor air concentrations. There are three NYSDOH matrices, Matrix A, Matrix B and Matrix C that are used to determine the next step in the assessment/remediation process; ranging from "no further action" to "mitigate", depending on the soil vapor and indoor air VOC concentrations being assessed. Each matrix addresses particular VOCs as follows:

- Matrix A – TCE, c12-DCE, 11-DCE and carbon tetrachloride
- Matrix B – PCE, 111-TCA and methylene chloride
- Matrix C – Vinyl chloride

The proper use of the NYSDOH matrices requires the collection of both sub-slab soil vapor and indoor air samples as part of the decision-making process. The matrices use established sub-slab soil vapor and indoor air concentrations to determine the next step. It should be noted that for each matrix, if the sub-slab soil vapor sample results exceed the maximum established value (60 ug/m³ for Matrices A and C, and 100 ug/m³ for Matrix B), then the default requirement is “mitigate.”

In addition, the remaining VOCs analyzed in the soil vapor and indoor air samples were also compared to the United States Environmental Protection Agency (USEPA). Specifically, the soil vapor samples were compared to the USEPA Residential Vapor Intrusion Screening Levels (VISLs) for Target Sub-Slab & Near-Source Soil Gas Concentrations for residential scenarios (most conservative values). A copy of the laboratory analytical report is provided in Appendix 3.

Sub-slab Soil Gas Results

The laboratory analytical data for the sub-slab soil gas samples collected from the Property is provided in Table 1:

Table 1: VOCs Detected in the Sub-Slab Soil Gas Samples

Sample ID Sample Date	SV-1 7/6/2022	SV-2 7/6/2022	SV-3 7/6/2022	SV-4 7/6/2022	Final Guidance Mitigation Level
<u>Matrix A</u>					
Carbon tetrachloride	ND	1.29	4.59	1.97	60
cis-1,2-Dichloroethene (DCE)	ND	ND	460	239	60
1,1-Dichloroethene (11-DCE)	ND	ND	ND	ND	60
Trichloroethene (TCE)	ND	83.6	48300	13200	60
<u>Matrix B</u>					
Methylene Chloride	1.09	1.19	ND	1.49	1,000
Tetrachloroethene (PCE)	22.9	19.8	1180	400	1,000
1,1,1-Trichloroethane (111-TCA)	39.7	47.9	19.5	7.02	1,000
<u>Matrix C</u>					
Vinyl chloride	ND	ND	ND	ND	60
Other VOCs					EPA VISL Residential
Benzene	14.0	1.20	5.69	3.77	12.0

1. All concentrations are expressed in micrograms per cubic meter (ug/m³).
2. ND - Parameter non-detected, below method detection limits.
3. Any result in bold exceeds Final Guidance recommendation to “mitigate.”

As shown, six select VOCs were detected in SSGS samples collected from the Property, including DCE, PCE, TCE, 111-TCA, methylene chloride, and carbon tetrachloride. Of these, DCE, PCE, and

TCE were reported at concentrations that exceed their respective Final Guidance default values whereby “mitigate” is recommended regardless of the presence or absence of DCE, PCE, and TCE in indoor air. PCE was detected in SSGS sample SV-3 at a concentration of 1,180 µg/m³, while DCE was reported at 239 to 460 µg/m³ within samples SV-3 & SV-4, and TCE was reported between 83.6 and 48300.0 µg/m³ in samples SV-2 through SV-4. Therefore, NYSDOH Matrix conclusion and default recommendation is to “mitigate.” No other VOCs targeted by this study were identified to exceed Final Guidance Mitigation Levels in any of the SSGS samples collected. Finally, benzene was detected in each SSGS sample collected, and exceeded its EPA Residential VISL in the sample collected from SV-1.

Indoor Air Results

The laboratory analytical data for the indoor air samples collected from the Property is provided in Table 2. Table 2 also includes analytical data for OA1 (outdoor air sample).

Table 2: VOCs Detected in the Indoor and Ambient Air Samples

Sample ID Sample Date	IA1 7/6/22	IA2 7/6/22	IA3 7/6/22	IA4 7/6/22	OA1 4/14/22	Final Guidance Mitigation Level
Matrix A						
Carbon tetrachloride	ND	ND	ND	ND	ND	1.0
cis-1,2-Dichloroethene (DCE)	ND	ND	ND	ND	ND	1.0
1,1-Dichloroethene (11-DCE)	ND	ND	ND	ND	ND	1.0
Trichloroethene (TCE)	ND	7.88	81.4	76.6	ND	1.0
Matrix B						
Methylene Chloride	5.00	2.09	2.77	3.37	1.90	10
Tetrachloroethene (PCE)	ND	1.72	3.01	3.16	ND	10
1,1,1-Trichloroethane (111-TCA)	ND	1.76	3.09	2.94	ND	10
Matrix C						
Vinyl chloride	ND	ND	ND	ND	ND	0.2
Other VOCs						EPA VISL Residential
Benzene	ND	1.29	1.10	1.15	0.760	0.36

1. All results are expressed in micrograms per cubic meter of air (µg/m³).
2. ND - Parameter non-detected, below method detection limits.
3. Any result in bold exceeds Final Guidance default recommendation to “mitigate.”

Based on the indoor air analytical results, PCE, TCE, 111-TCA, and methylene chloride were detected in the indoor air samples collected. TCE was the only VOC reported in the indoor air samples exceeding its respective Final Guidance Mitigation value for TCE of 1.0 µg/m³, with concentrations ranging from 7.88 to 81.4 µg/m³. TCE was also reported in each of the SSGS samples at concentrations that indicate mitigation is required, regardless of indoor air concentrations and/or when indoor air concentrations are below 3 µg/m³. Therefore, NYSDOH Matrix conclusion and recommendation is to “mitigate.” The outdoor air sample, denoted as OA1, detected methylene chloride; however, the reported concentration was below Final Guidance levels.

Finally, benzene was detected in each indoor air sample collected, including the ambient air sample. If you deduct the ambient air concentration from the indoor air results, the indoor air samples collected from IA2 and IA4 report benzene at a concentration exceeding its VISL.

3.0 FINDINGS, OPINIONS AND CONCLUSIONS

BBG conducted a Limited Phase II ESA at 280-284 Starr Street, Brooklyn, New York 11237 on July 6, 2022, and the findings, opinions and conclusions are summarized below:

- BBG directed a GPR survey at the Property to verify utility locations and attempt to locate a potential UST in the sidewalk area. The GPR survey did not identify any USTs near the sidewalk area, nor on the Property, but it did verify that the vent pipe identified in BBG's Phase I ESA lead into the subsurface of the basement. The basement was unable to be scanned with the GPR or fully inspected due to a large collection of debris. As such, the terminus of the suspect vent pipe was unable to be determined.
- Four sub-slab soil gas samples and four indoor air samples were collected from within the Property building (and one outdoor ambient air sample was collected for control) to screen the Property for evidence of a release from the former manufacturing operations on-Site. All samples were analyzed for a select list of VOCs as per the NYSDOH Matrix guidance: PCE, TCE, DCE, 11-DCE, carbon tetrachloride, 111-TCA, methylene chloride, and vinyl chloride, and BTEX by EPA Method TO-15.
- Laboratory analysis identified six select VOCs in SSGS samples collected from the Property, including DCE, PCE, TCE, 111-TCA, methylene chloride, and carbon tetrachloride. Of these, DCE, PCE, and TCE were reported at concentrations that exceed their respective Final Guidance default values whereby "mitigate" is recommended regardless of the presence or absence of DCE, PCE, and TCE in indoor air. Therefore, NYSDOH Matrix conclusion and default recommendation is to "mitigate." No other VOCs targeted by this study were identified to exceed Final Guidance Mitigation Levels in any of the SSGS samples collected.
- Laboratory analysis results of indoor air samples collected from the Property detected PCE, TCE, 111-TCA, and methylene chloride. TCE was the only VOC reported in the indoor air samples at concentrations ranging from 7.88 to 81.4 $\mu\text{g}/\text{m}^3$, exceeding the respective Final Guidance Mitigation value for TCE of 1.0 $\mu\text{g}/\text{m}^3$. TCE was also reported in each of the SSGS samples at concentrations that indicate mitigation is required, regardless of indoor air concentrations and/or when indoor air concentrations are below 3 $\mu\text{g}/\text{m}^3$. Therefore, NYSDOH Matrix conclusion and recommendation is to "mitigate." The outdoor air sample detected methylene chloride; however, the reported concentration was below its Final Guidance Mitigation Levels.

Finally, benzene was detected in each indoor air sample collected, including the ambient air sample. If you deduct the ambient air concentration from the indoor air results, the indoor air samples collected from IA2 and IA4 report benzene at a concentration exceeding its VISL

This investigation identified DCE, PCE, and TCE at the Property at concentrations exceeding their NYSDOH Matrix guidelines in several of the SSGS samples, while also identifying TCE in exceedance of its NYSDOH Matrix guidelines in three of the indoor air samples. Furthermore, the concentrations of DCE, PCE, and TCE reported in the SSGS samples exceed their respective Final Guidance default values, whereby “mitigate” is recommended regardless of the presence or absence of their exceedances in indoor air. Finally, benzene was also detected at concentrations exceeding its VISL in two indoor air samples and one sub-slab sample.

BBG’s conclusions are based on the results of the Limited Phase II ESA performed at 280-284 Starr Street, Brooklyn, New York 11237. This investigation was intended to solely assess the RECs identified in the ESA and is not intended to satisfy the level of inquiry that may be necessary to support remedial solutions or determine migration pathways related to a contaminant release.

4.0 RECOMMENDATIONS

Based on the results of this Limited Phase II ESA, it appears that the former on-site operations have impacted the Property. Soil vapor and indoor air samples detected VOC compounds indicative of a release. Specifically, the chlorinated solvents, DCE, PCE, TCE, 111-TCA, methylene chloride, carbon tetrachloride, and benzene were detected. Of the VOCs detected, DCE, PCE, TCE, and benzene were reported at concentrations exceeding their respective regulatory health risk-based screening levels established by the NYSDOH or EPA VISLs in the soil gas and indoor air samples collected from the Property. Therefore, it appears that a vapor intrusion condition exists, which is likely associated with the historical manufacturing activities. The concentrations of DCE, PCE, and TCE reported in the soil gas samples also exceed the respective Final Guidance default values, whereby “mitigate” is recommended regardless of their presence or absence in indoor air. As such, BBG recommends that a Vapor Mitigation Specialist be retained, and proper vapor mitigation be implemented at the Property.

In addition, the GPR survey did not identify any USTs near the sidewalk area, nor on the Property, but it did verify that the vent pipe identified in BBG’s Phase I ESA lead into the subsurface of the basement. The basement was unable to be scanned with the GPR or fully inspected due to a large collection of debris. As such, the terminus of the suspect vent pipe was unable to be determined. BBG recommends that the basement debris be completely cleared to allow a further GPR assessment of that area to determine the terminus of the vent pipe.

APPENDIX 1

FIGURES

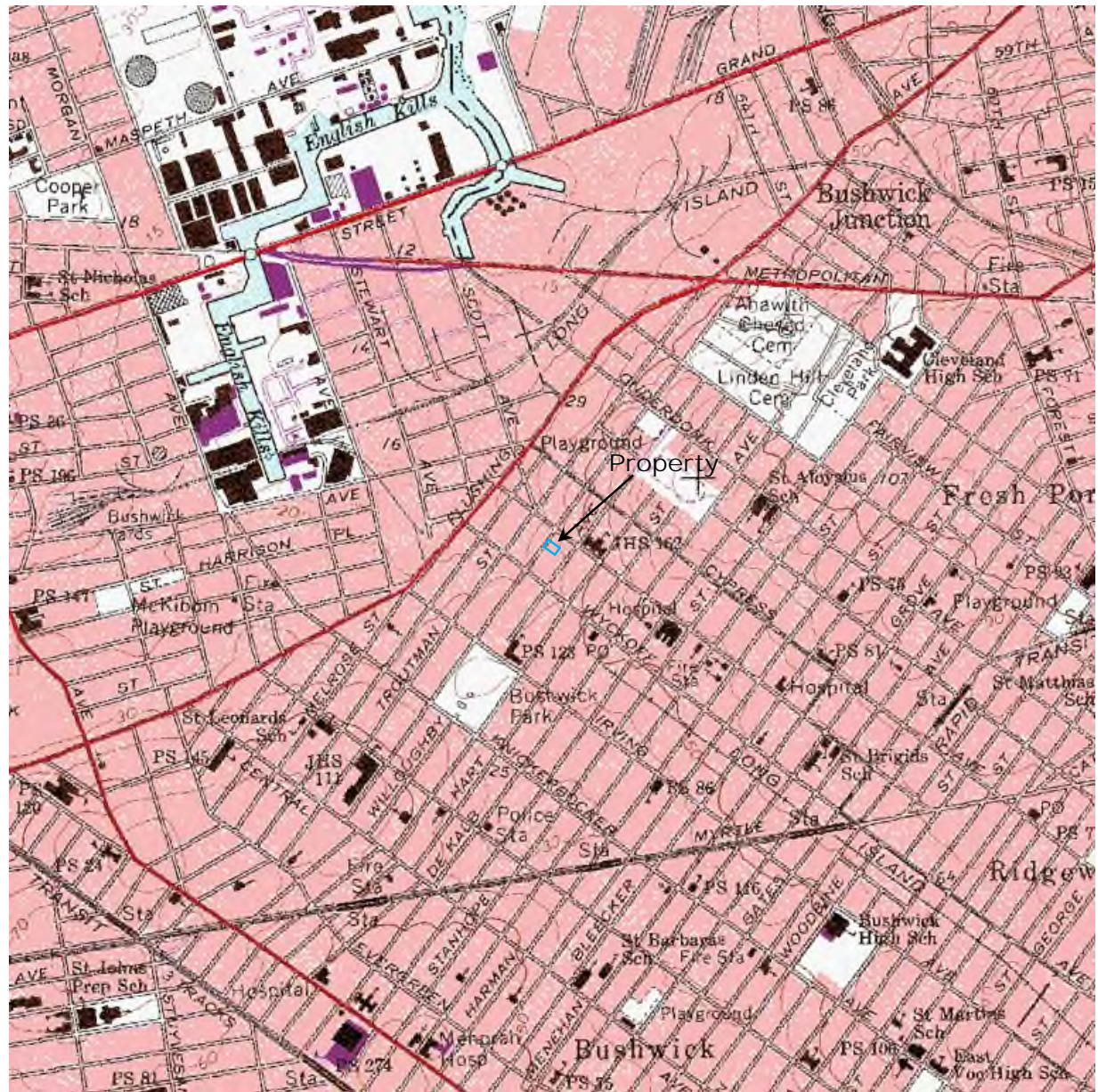
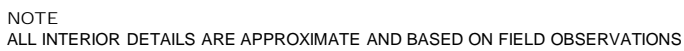


FIGURE 1 - TOPOGRAPHIC MAP

USGS Topographic Map, Brooklyn, NY Quadrangle (contour interval: 5 ft.)



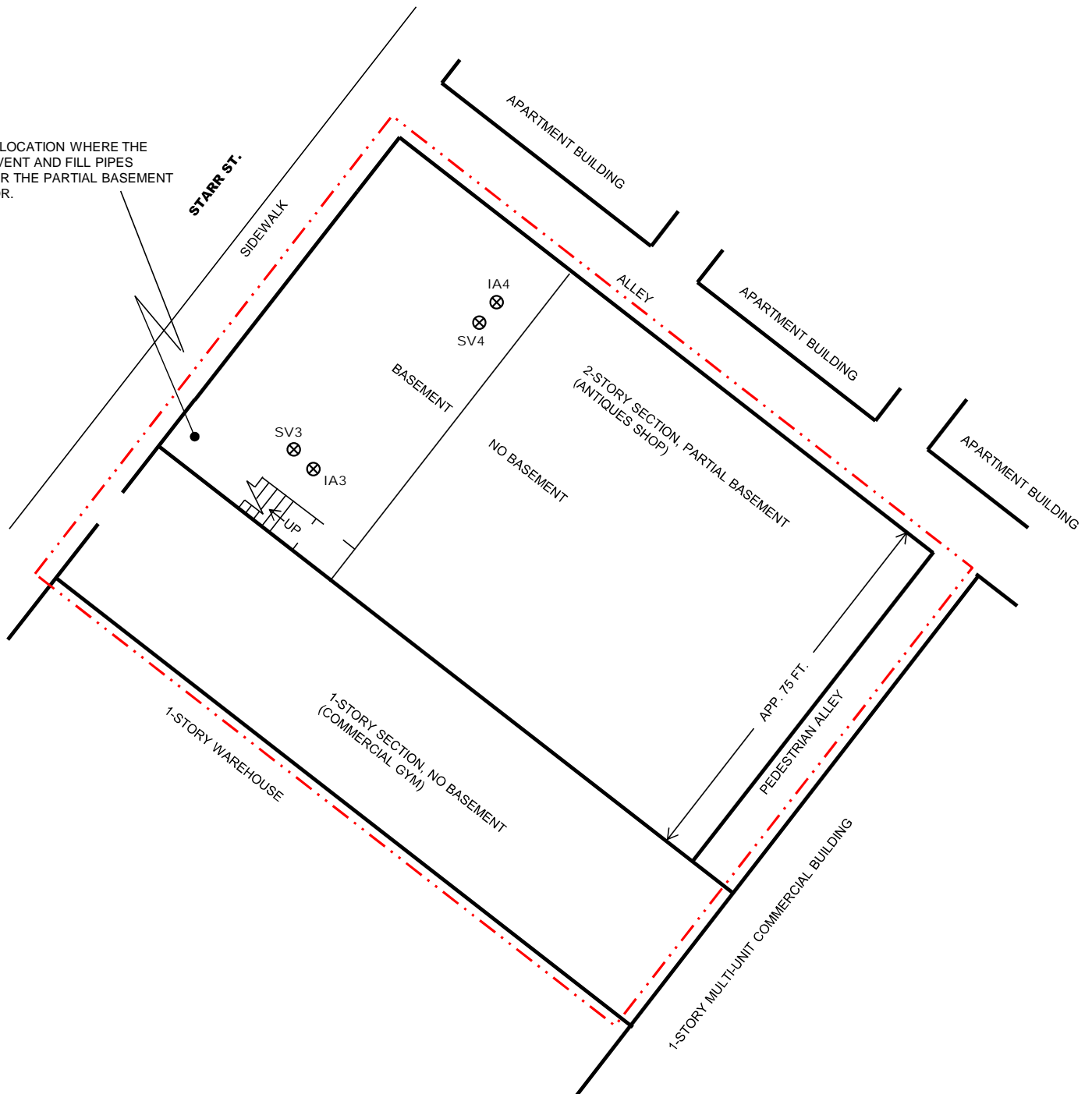


NOT TO SCALE

PATTERNED LINES ENCLOSE THE PROPERTY
⊗ DENOTES AIR & SOIL VAPOR SAMPLE LOCATIONS



APP. LOCATION WHERE THE
UST VENT AND FILL PIPES
ENTER THE PARTIAL BASEMENT
FLOOR.



NOTE
ALL INTERIOR DETAILS ARE APPROXIMATE AND BASED ON FIELD OBSERVATIONS

FIGURE 3 – BASEMENT SKETCH
Base map source: Google Maps

NOT TO SCALE

KEY:
PATTERNED LINES ENCLOSE THE PROPERTY
⊗ DENOTES AIR & SOIL VAPOR SAMPLE LOCATIONS



APPENDIX 2

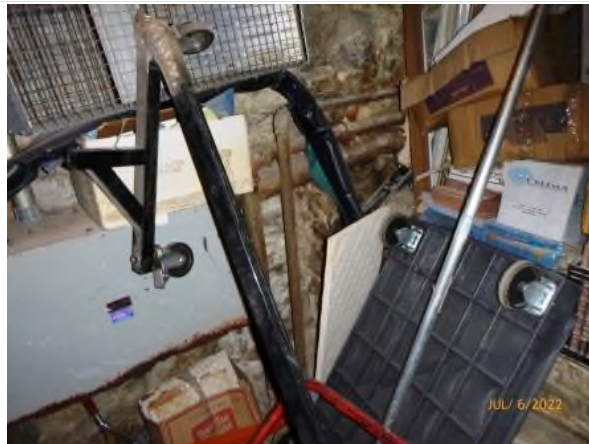
PHOTOGRAPHS



1. Site building looking east from across Starr Street



2. GPR survey in progress. UST vent pipe visible against building wall. Photographer facing northeast.



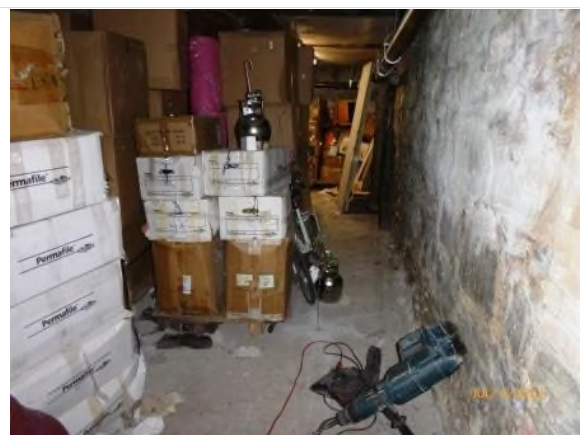
3. UST fill and vent lines dropping into the floor of the partial basement.



4. General conditions in the basement. IA3 shown.



5. SV2 and IA2 on the ground floor of the two-story Property building.



6. IA4 and SV4 in the partial basement of the two-story Property building.

APPENDIX 3

LABORATORY ANALYTICAL REPORT

BBG - San Diego, CA

Sample Delivery Group: L1512623
Samples Received: 07/07/2022
Project Number: 0522008490
Description: 280-284 Starr Street Brooklyn, NY

Report To: Matt Smelski
11440 W. Bernardo Court
Suite 104
San Diego, CA 92127

Entire Report Reviewed By:



Heather J Wagner
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

SV1 L1512623-01 Air

				Collected by Frank G	Collected date/time 07/06/22 10:05	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 15:10	07/08/22 15:10	DAH	Mt. Juliet, TN

SV2 L1512623-02 Air

				Collected by Frank G	Collected date/time 07/06/22 10:16	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 15:48	07/08/22 15:48	DAH	Mt. Juliet, TN

SV3 L1512623-03 Air

				Collected by Frank G	Collected date/time 07/06/22 10:31	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 16:25	07/08/22 16:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1892371	50	07/09/22 20:15	07/09/22 20:15	FKG	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1893092	400	07/11/22 15:30	07/11/22 15:30	MBF	Mt. Juliet, TN

SV4 L1512623-04 Air

				Collected by Frank G	Collected date/time 07/06/22 10:40	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 17:03	07/08/22 17:03	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1892371	50	07/09/22 20:53	07/09/22 20:53	FKG	Mt. Juliet, TN

IA1 L1512623-05 Air

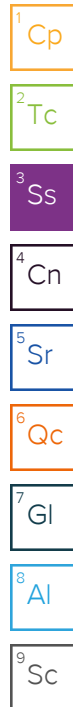
				Collected by Frank G	Collected date/time 07/06/22 16:17	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	2	07/08/22 22:10	07/08/22 22:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1892371	5	07/09/22 22:50	07/09/22 22:50	FKG	Mt. Juliet, TN

IA2 L1512623-06 Air

				Collected by Frank G	Collected date/time 07/06/22 16:18	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 17:41	07/08/22 17:41	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1892371	1	07/09/22 18:19	07/09/22 18:19	FKG	Mt. Juliet, TN

IA3 L1512623-07 Air

				Collected by Frank G	Collected date/time 07/06/22 16:22	Received date/time 07/07/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 18:20	07/08/22 18:20	DAH	Mt. Juliet, TN



SAMPLE SUMMARY

IA4 L1512623-08 Air

Collected by
Frank G

Collected date/time
07/06/22 16:24

Received date/time
07/07/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 18:58	07/08/22 18:58	DAH	Mt. Juliet, TN

OA1 L1512623-09 Air

Collected by
Frank G

Collected date/time
07/06/22 16:31

Received date/time
07/07/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1891869	1	07/08/22 19:36	07/08/22 19:36	DAH	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Heather J Wagner
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	4.39	14.0		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.314	1.09	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	3.37	22.9		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	1.01	3.80		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	7.30	39.7		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1891869
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1891869

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.375	1.20		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	0.205	1.29		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.343	1.19	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	2.91	19.8		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	8.81	47.9		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	15.6	83.6		1	WG1891869
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.8				WG1891869

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	1.78	5.69		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	0.729	4.59		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	10.0	39.6	116	460		50	WG1892371
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1891869
Tetrachloroethylene	127-18-4	166	10.0	67.9	174	1180		50	WG1892371
Toluene	108-88-3	92.10	0.500	1.88	1.44	5.42		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	3.59	19.5		1	WG1891869
Trichloroethylene	79-01-6	131	80.0	429	9020	48300		400	WG1893092
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.3				WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.5				WG1892371
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.3				WG1893092

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	1.18	3.77		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	0.313	1.97		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	60.3	239		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.429	1.49	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	58.9	400		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	1.24	4.67		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	1.29	7.02		1	WG1891869
Trichloroethylene	79-01-6	131	10.0	53.6	2470	13200		50	WG1892371
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.5				WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.2				WG1892371

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	1.00	3.19	ND	ND		5	WG1892371
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1891869
Ethylbenzene	100-41-4	106	1.00	4.34	ND	ND		5	WG1892371
Methylene Chloride	75-09-2	84.90	0.400	1.39	1.44	5.00	B	2	WG1891869
Tetrachloroethylene	127-18-4	166	1.00	6.79	ND	ND		5	WG1892371
Toluene	108-88-3	92.10	2.50	9.42	4.68	17.6		5	WG1892371
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG1891869
Trichloroethylene	79-01-6	131	1.00	5.36	ND	ND		5	WG1892371
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1891869
m&p-Xylene	1330-20-7	106	2.00	8.67	ND	ND		5	WG1892371
o-Xylene	95-47-6	106	1.00	4.34	ND	ND		5	WG1892371
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.1				WG1892371

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.403	1.29		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	0.486	2.11		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.602	2.09	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.253	1.72		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	5.59	21.1		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.323	1.76		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	1.47	7.88		1	WG1892371
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	1.52	6.59		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	0.567	2.46		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.7				WG1892371

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.344	1.10		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	0.695	3.01		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.799	2.77	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.444	3.01		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	20.6	77.6		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.568	3.09		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	15.2	81.4		1	WG1891869
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	1.90	8.24		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	0.688	2.98		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.7				WG1891869

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.359	1.15		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	0.649	2.81		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.971	3.37	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.466	3.16		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	19.1	71.9		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.540	2.94		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	14.3	76.6		1	WG1891869
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	1.81	7.85		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	0.658	2.85		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		100				WG1891869

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	0.200	0.639	0.238	0.760		1	WG1891869
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1891869
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1891869
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1891869
Ethylbenzene	100-41-4	106	0.200	0.867	0.393	1.70		1	WG1891869
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.546	1.90	B	1	WG1891869
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1891869
Toluene	108-88-3	92.10	0.500	1.88	1.90	7.16		1	WG1891869
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1891869
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1891869
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1891869
m&p-Xylene	1330-20-7	106	0.400	1.73	0.929	4.03		1	WG1891869
o-Xylene	95-47-6	106	0.200	0.867	0.331	1.44		1	WG1891869
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1891869

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3812521-2 07/08/22 08:47

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
Carbon tetrachloride	U		0.0732	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
Ethylbenzene	U		0.0835	0.200
Methylene Chloride	0.136	U	0.0979	0.200
Tetrachloroethylene	U		0.0814	0.200
Toluene	U		0.0870	0.500
1,1,1-Trichloroethane	U		0.0736	0.200
Trichloroethylene	U		0.0680	0.200
Vinyl chloride	U		0.0949	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
(S) 1,4-Bromofluorobenzene	96.4			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3812521-1 07/08/22 08:10 • (LCSD) R3812521-3 07/08/22 09:52

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	4.21	3.99	112	106	70.0-130			5.37	25
Carbon tetrachloride	3.75	4.10	3.96	109	106	70.0-130			3.47	25
1,1-Dichloroethene	3.75	4.03	3.81	107	102	70.0-130			5.61	25
cis-1,2-Dichloroethene	3.75	3.91	3.78	104	101	70.0-130			3.38	25
Ethylbenzene	3.75	4.16	3.97	111	106	70.0-130			4.67	25
Methylene Chloride	3.75	3.53	3.36	94.1	89.6	70.0-130			4.93	25
Tetrachloroethylene	3.75	4.41	4.26	118	114	70.0-130			3.46	25
Toluene	3.75	4.18	4.05	111	108	70.0-130			3.16	25
1,1,1-Trichloroethane	3.75	4.03	3.88	107	103	70.0-130			3.79	25
Trichloroethylene	3.75	4.22	4.11	113	110	70.0-130			2.64	25
Vinyl chloride	3.75	4.00	3.82	107	102	70.0-130			4.60	25
m&p-Xylene	7.50	8.33	8.02	111	107	70.0-130			3.79	25
o-Xylene	3.75	4.10	3.95	109	105	70.0-130			3.73	25
(S) 1,4-Bromofluorobenzene				98.5	97.9	60.0-140				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3812884-3 07/09/22 06:16

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
Ethylbenzene	U		0.0835	0.200
Tetrachloroethylene	U		0.0814	0.200
Toluene	U		0.0870	0.500
Trichloroethylene	U		0.0680	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
(S) 1,4-Bromofluorobenzene	93.6			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3812884-1 07/09/22 04:55 • (LCSD) R3812884-2 07/09/22 05:36

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	4.67	4.73	125	126	70.0-130			1.28	25
cis-1,2-Dichloroethene	3.75	4.65	4.69	124	125	70.0-130			0.857	25
Ethylbenzene	3.75	4.70	4.74	125	126	70.0-130			0.847	25
Tetrachloroethylene	3.75	4.50	4.55	120	121	70.0-130			1.10	25
Toluene	3.75	4.61	4.65	123	124	70.0-130			0.864	25
Trichloroethylene	3.75	4.47	4.58	119	122	70.0-130			2.43	25
m&p-Xylene	7.50	9.45	9.51	126	127	70.0-130			0.633	25
o-Xylene	3.75	4.58	4.66	122	124	70.0-130			1.73	25
(S) 1,4-Bromofluorobenzene				97.9	97.6	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3813319-3 07/11/22 10:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Trichloroethylene	U		0.0680	0.200
(S) 1,4-Bromofluorobenzene	95.0			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3813319-1 07/11/22 09:19 • (LCSD) R3813319-2 07/11/22 10:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Trichloroethylene	3.75	4.59	4.59	122	122	70.0-130			0.000	25
(S) 1,4-Bromofluorobenzene				96.2	97.2	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

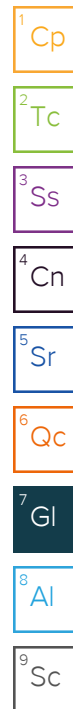
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.



ACCREDITATIONS & LOCATIONS

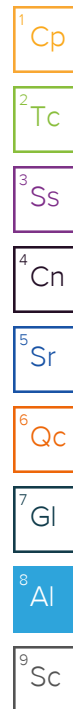
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address: BBG - San Diego, CA 11440 W. Bernardo Court Suite 104			Billing Information: BBG Accounts Payable 11440 W. Bernardo Court Suite 104 San Diego, CA 92127			Analysis			Chain of Custody Page <u>1</u> of <u>1</u>				
Report To: Matt Smelski			Email To: msmelski@bbgres.com			TO-15 Summa			PEOPLE ADVANCING SCIENCE MT JULIET, TN 12065 Lebanon Road Mt Juliet, TN 37122 Phone: 615-758-5858 Alt: 800-767-5859 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf				
Project Description: 280-284 Starr Street Brooklyn, NY			City/State Collected: BROOKLYN, NY								Please Circle: PT MT CT ET		
Phone: 559-441-3227		Client Project # 0522008490		Lab Project # BBGSDCA-280-284 STAR									
Collected by (print): FRANK GALDUN		Site/Facility ID #		P.O. #									
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Three Day <input type="checkbox"/> Next Day <input type="checkbox"/> Five Day <input checked="" type="checkbox"/> Two Day		Date Results Needed									
				Collection		Canister Pressure/Vacuum							
Sample ID	Can #	Flow Cont. #	Date	Time	Initial	Final							
SU1	011996	008401	7/6/22	0905	29.5	0	X		-01				
SU2	021149	012366	7/6/22	0916	29	7	X		-02				
SU3	006909	005872	7/6/22	0931	29	4	X		-03				
SU4	012358	012350	7/6/22	0940	28.5	8	X		-04				
IA1	008762	009394	7/6/22	0817	29.5	16	X		-05				
IA2	011239	020159	7/6/22	0818	29.5	45	X		-06				
IA3	020413	021517	7/6/22	0822	OVER 30	4	X		-07				
IA4	007226	007510	7/6/22	0824	29	1.5	X		-08				
OAI	012551	006363	7/6/22	0831	OVER 30	9	X		-09				
Remarks: REPORT ONLY: PCE, TCE, CIS-1,2-DCE, 1,1-DCE, 1,1,1-TEA, CARBON TET., METHYLENE CHLORIDE, VINYL CHLORIDE, BTEX NOTE: IA1 REGULATORY EXTREMELY SLOW DRAW.													
Relinquished by: (Signature) 			Date: 6/6/22 Time: 7:20 PM		Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier		Tracking #		Hold #				
Relinquished by: (Signature)			Date: Time:		Received by: (Signature)		Date: Time:		Condition: (lab use only)				
Relinquished by: (Signature)			Date: Time:		Received by: (Signature)		Date: Time:		COC Seal Intact: <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA				
Relinquished by: (Signature)			Date: Time:		Received for lab by: (Signature) 		Date: 7-7 Time: 9:00		NCF:				