



architects + engineers

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Melville, NY 11747 fax 631.694.4122

December 26, 2019

Ms. Heather Bishop
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233

**Re: Soil Vapor Extraction Blower Vapor Sampling and Laboratory Analyses Summary Report
American Regent, Inc.
5 Ramsey Road
Shirley, New York
H2M Project No. LUIT 1901**

Dear Ms. Bishop:

On behalf of American Regent, Inc (American Regent), formerly known as Luitpold Pharmaceuticals, H2M architects + engineers (H2M) provides herein the results of the soil vapor extraction (SVE) blower vapor sampling for the above-referenced site.

Background

H2M was retained by American Regent to install a SSDS to address sub-slab soil vapor contamination, including 1,1,1-trichloroethane (TCA), Tetrachloroethene (PCE) and 1,1-dichloroethene (DCE), at 26 Precision Drive in Shirley, NY.

Implementation of a sub-slab depressurization system was selected as the mitigation remedy following a pilot test conducted at the site in May 2014. Due to low soil permeability, as confirmed during the pilot test, the SSDS required a soil vapor extraction blower. A remediation system was designed by H2M and approved by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) on February 4, 2016. The Town of Brookhaven Planning Department approved the SSDS project on August 10, 2017. A Town of Brookhaven Building Permit 17B119335 was issued on October 17, 2017. Construction of the SSDS began on December 7, 2017 and was completed December 21, 2017. System startup and inspection was performed by the Town of Brookhaven Building Department on January 10, 2018.

Sampling Activity

The air sampling was conducted on December 20, 2019. Samples were collected at an influent, intermediate, and effluent sample point located on the soil vapor extraction blower. All air samples were collected over a two-hour period utilizing vacuum canisters.

Summary and Conclusions

Each of the air samples were analyzed for volatile organic compounds (VOCs) by EPA Method TO-15. Laboratory analyses were performed by York Analytical Laboratories in Stratford, Connecticut. Results of the laboratory analyses are summarized in Table 1. Two effluent analytes (Carbon Tetrachloride and Trichloroethylene) exceeded their respective Annual Guideline Concentrations (AGC).

Carbon tetrachloride was detected at a concentration of 0.790 ug/m³ in the influent, and 0.590 ug/m³ in the effluent. Trichloroethylene was non-detect in the influent, and 0.290 ug/m³ in the effluent sample.

However, utilizing a flow rate of 180 scfm, H2M calculated the total discharge in pounds per year for each analyte. Mass calculations were compared to guidance values established in 6 NYCRR 212. Based on flow

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rate and analyte concentrations, all annual discharges were less than 1 lb/year. Emission limits are 100 lbs/year for carbon tetrachloride and trichloroethylene. The carbon filtration system is operating in accordance with NYSDEC and NYSDOH guidelines.

If you should have any questions or require additional information, please feel free to contact the undersigned at (631) 756-8000 x1628.

Very truly yours,

H2M architects + engineers

A handwritten signature in blue ink that reads "Joseph Loesch".

Joseph Loesch
Project Engineer

Attachments:
Table 1 – Vapor Sampling SVE System
Appendix A – Analytical Laboratory Report

TABLE 1

VAPOR SAMPLING SVE SYSTEM

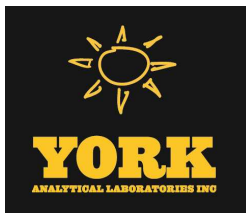
Table 1. Vapor Sampling SVE System
 American Regent, Inc. Site - 26 Precision Drive, Shirley, NY



Sample ID:	AGC Limit	Influent	Int.	Effluent	6 NYCRR 212	Effluent Mass Calculations
Sample Date:		12/20/2019	12/20/2019	12/20/2019	Annual Limit	
Units:	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	lbs/year	lbs/year
Volatile Organic Compounds (VOCs)						
1,1,1,2-Tetrachloroethane	-	ND	ND	ND		0
1,1,1-Trichloroethane	-	0.900	ND	ND		0.000
1,1,2,2-Tetrachloroethane	-	ND	ND	ND	1,000	0.000
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	-	0.970	ND	ND		0.000
1,1,2-Trichloroethane	-	ND	ND	ND	100	0.000
1,1-Dichloroethane	-	ND	ND	ND		0.000
1,1-Dichloroethylene	-	ND	ND	ND		0.000
1,2,4-Trichlorobenzene	-	ND	ND	ND		0.000
1,2,4-Trimethylbenzene	6	1.100	ND	ND		0.000
1,2-Dibromoethane	-	ND	ND	ND	5	0.000
1,2-Dichlorobenzene	-	ND	ND	ND		0.000
1,2-Dichloroethane	-	ND	ND	ND	100	0.000
1,2-Dichloropropane	-	ND	ND	ND		0.000
1,2-Dichlorotetrafluoroethane	-	ND	ND	ND		0.000
1,3,5-Trimethylbenzene	-	0.620	ND	ND		0.000
1,3-Butadiene	-	ND	ND	ND	25	0.000
1,3-Dichlorobenzene	-	ND	ND	ND		0.000
1,3-Dichloropropane	-	ND	ND	ND		0.000
1,4-Dichlorobenzene	-	ND	ND	ND		0.000
1,4-Dioxane	30000	ND	ND	ND		0.000
2-Butanone	-	1.100	3.600	2.700		0.016
2-Hexanone	-	ND	ND	ND		0.000
3-Chloropropene	-	ND	ND	ND		0.000
4-Methyl-2-pentanone	-	ND	0.600	ND		0.000
Acetone	30000	4	26.000	13		0.077
Acrylonitrile	-	ND	ND	ND	25	0.000
Benzene	0.13	ND	ND	ND	100	0.000
Benzyl chloride	-	ND	ND	ND	25	0.000
Bromodichloromethane	-	ND	ND	ND		0.000
Bromoform	-	ND	ND	ND		0.000
Bromomethane	-	ND	ND	ND		0.000
Carbon disulfide	-	ND	ND	ND		0.000
Carbon tetrachloride	0.17	0.790	0.670	0.590	100	0.003
Chlorobenzene	-	ND	ND	ND		0.000
Chloroethane	-	ND	ND	ND		0.000
Chloroform	14.7	ND	ND	ND	100	0.000
Chloromethane	90	1.1	1.200	1.100		0.006
cis-1,2-Dichloroethylene	63	1.8	0.420	0.850		0.005
cis-1,3-Dichloropropylene	-	ND	ND	ND		0.000
Cyclohexane	6000	ND	ND	ND		0.000
Dibromochloromethane	-	ND	ND	ND		0.000
Dichlorodifluoromethane	12000	1.2	ND	0.730		0.004
Ethyl acetate	3400	ND	3.200	ND		0.000
Ethyl Benzene	1000	ND	ND	ND		0.000
Hexachlorobutadiene	-	ND	ND	ND		0.000
Isopropanol	-	0.810	2.100	ND		0.000
Methyl Methacrylate	-	0.670	3.700	2.300		0.014
Methyl tert-butyl ether (MTBE)	3.8	ND	ND	ND		0.000
Methylene chloride	-	1.800	4.100	16.000		0.094
n-Heptane	-	ND	ND	ND		0.000
n-Hexane	700	0.530	0.510	ND		0.000
o-Xylene	100	ND	0.580	ND		0.000
p- & m- Xylenes	100	ND	1.800	ND		0.000
p-Ethyltoluene	-	0.810	ND	ND		0.000
Propylene	3000	ND	ND	ND		0.000
Styrene	1000	ND	4.000	0.620		0.000
Tetrachloroethylene	4	4.700	5.000	ND	1,000	0.000
Tetrahydrofuran	350	ND	ND	ND		0.000
Toluene	5000	ND	5.900	ND		0.000
trans-1,2-Dichloroethylene	-	ND	ND	ND		0.000
trans-1,3-Dichloropropylene	-	ND	ND	ND		0.000
Trichloroethylene	0.2	ND	0.210	0.290	100	0.002
Trichlorofluoromethane (Freon 11)	5000	5.300	2.500	2.800		0.017
Vinyl acetate	-	ND	ND	ND		0.000
Vinyl bromide	-	ND	ND	ND	500	0.000
Vinyl Chloride	-	ND	ND	ND	100	0.000

APPENDIX A

ANALYTICAL LABORATORY REPORT



Technical Report

prepared for:

H2M architects + engineers

290 Broad Hollow Rd

Melville NY, 11747

Attention: Joe Loesch

Report Date: 12/26/2019

Client Project ID: LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

York Project (SDG) No.: 19L0858

CT Cert. No. PH-0723

New Jersey Cert. No. CT005 and NY037



New York Cert. Nos. 10854 and 12058

PA Cert. No. 68-04440

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(203) 325-1371

132-02 89th AVENUE
FAX (203) 357-0166

RICHMOND HILL, NY 11418
ClientServices@yorklab.com

Report Date: 12/26/2019

Client Project ID: LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

York Project (SDG) No.: 19L0858

H2M architects + engineers

290 Broad Hollow Rd

Melville NY, 11747

Attention: Joe Loesch

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on December 23, 2019 with a temperature of C. The project was identified as your project: **LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
19L0858-01	Influent	Vapor Extraction	12/20/2019	12/23/2019
19L0858-02	Intermediate	Vapor Extraction	12/20/2019	12/23/2019
19L0858-03	Effluent	Vapor Extraction	12/20/2019	12/23/2019

General Notes for York Project (SDG) No.: 19L0858

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By:



Benjamin Gulizia
Laboratory Director

Date: 12/26/2019





Sample Information

Client Sample ID: Influent		York Sample ID: 19L0858-01
York Project (SDG) No.: 19L0858	Client Project ID: LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING	Date Received: 12/23/2019
	Matrix: Vapor Extraction	Collection Date/Time: December 20, 2019 10:18 am

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	0.87	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
71-55-6	1,1,1-Trichloroethane	0.90		ug/m ³	0.69	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	0.87	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.97		ug/m ³	0.97	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.69	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.51	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.13	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	0.94	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
95-63-6	1,2,4-Trimethylbenzene	1.1		ug/m ³	0.62	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	0.97	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.76	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.51	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.58	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	0.88	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
108-67-8	1,3,5-Trimethylbenzene	0.62		ug/m ³	0.62	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	0.84	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.76	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.58	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.76	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	0.91	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
78-93-3	2-Butanone	1.1		ug/m ³	0.37	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS



Sample Information

Client Sample ID: Influent

York Sample ID: 19L0858-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 10:18 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
591-78-6	* 2-Hexanone	ND		ug/m ³	1.0	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.0	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
108-10-1	4-Methyl-2-pentanone	ND		ug/m ³	0.52	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
67-64-1	Acetone	3.8		ug/m ³	0.60	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
107-13-1	Acrylonitrile	ND		ug/m ³	0.27	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
71-43-2	Benzene	ND		ug/m ³	0.40	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
100-44-7	Benzyl chloride	ND		ug/m ³	0.65	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-27-4	Bromodichloromethane	ND		ug/m ³	0.85	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-25-2	Bromoform	ND		ug/m ³	1.3	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
74-83-9	Bromomethane	ND		ug/m ³	0.49	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-15-0	Carbon disulfide	ND		ug/m ³	0.39	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
56-23-5	Carbon tetrachloride	0.79		ug/m ³	0.20	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
108-90-7	Chlorobenzene	ND		ug/m ³	0.58	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-00-3	Chloroethane	ND		ug/m ³	0.33	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
67-66-3	Chloroform	ND		ug/m ³	0.62	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
74-87-3	Chloromethane	1.1		ug/m ³	0.26	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
156-59-2	cis-1,2-Dichloroethylene	1.8		ug/m ³	0.13	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.57	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
110-82-7	Cyclohexane	ND		ug/m ³	0.43	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
124-48-1	Dibromochloromethane	ND		ug/m ³	1.1	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-71-8	Dichlorodifluoromethane	1.2	TO-CC V, TO-LC S-H	ug/m ³	0.62	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS



Sample Information

Client Sample ID: Influent

York Sample ID: 19L0858-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 10:18 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
141-78-6	* Ethyl acetate	ND		ug/m ³	0.91	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
100-41-4	Ethyl Benzene	ND		ug/m ³	0.55	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.3	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
67-63-0	Isopropanol	0.81		ug/m ³	0.62	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
80-62-6	Methyl Methacrylate	0.67		ug/m ³	0.52	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.45	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-09-2	Methylene chloride	1.8		ug/m ³	0.88	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
142-82-5	n-Heptane	ND		ug/m ³	0.52	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
110-54-3	n-Hexane	0.53		ug/m ³	0.44	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
95-47-6	o-Xylene	ND		ug/m ³	0.55	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
179601-23-1	p- & m- Xylenes	ND		ug/m ³	1.1	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
622-96-8	* p-Ethyltoluene	0.81		ug/m ³	0.62	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
115-07-1	* Propylene	ND		ug/m ³	0.22	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
100-42-5	Styrene	ND		ug/m ³	0.54	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
127-18-4	Tetrachloroethylene	4.7		ug/m ³	0.86	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.74	1.262	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 01:29	AS
108-88-3	Toluene	ND		ug/m ³	0.48	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.50	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.57	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
79-01-6	Trichloroethylene	ND		ug/m ³	0.17	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-69-4	Trichlorofluoromethane (Freon 11)	5.3		ug/m ³	0.71	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.44	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS



Sample Information

Client Sample ID: Influent **York Sample ID:** 19L0858-01
York Project (SDG) No. 19L0858 **Client Project ID** LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING **Matrix** Vapor Extraction **Collection Date/Time** December 20, 2019 10:18 am **Date Received** 12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
593-60-2	Vinyl bromide	ND		ug/m ³	0.55	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.081	1.262	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 01:29	AS
Surrogate Recoveries		Result	Acceptance Range							
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	84.2 %	70-130							

Sample Information

Client Sample ID: Intermediate **York Sample ID:** 19L0858-02
York Project (SDG) No. 19L0858 **Client Project ID** LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING **Matrix** Vapor Extraction **Collection Date/Time** December 20, 2019 9:54 am **Date Received** 12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	0.91	1.327	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 02:24	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.72	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	0.91	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.0	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.72	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.54	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.13	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	0.98	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m ³	0.65	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.0	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.80	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS



Sample Information

Client Sample ID: Intermediate

York Sample ID: 19L0858-02

<u>York Project (SDG) No.</u> 19L0858	<u>Client Project ID</u> LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING	<u>Matrix</u> Vapor Extraction	<u>Collection Date/Time</u> December 20, 2019 9:54 am	<u>Date Received</u> 12/23/2019
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Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.54	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.61	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	0.93	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m ³	0.65	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	0.88	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.80	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.61	1.327	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 02:24	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.80	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	0.96	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
78-93-3	2-Butanone	3.6		ug/m ³	0.39	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
591-78-6	* 2-Hexanone	ND		ug/m ³	1.1	1.327	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 02:24	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.1	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
108-10-1	4-Methyl-2-pentanone	0.60		ug/m ³	0.54	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
67-64-1	Acetone	26		ug/m ³	0.63	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
107-13-1	Acrylonitrile	ND		ug/m ³	0.29	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
71-43-2	Benzene	ND		ug/m ³	0.42	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
100-44-7	Benzyl chloride	ND		ug/m ³	0.69	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-27-4	Bromodichloromethane	ND		ug/m ³	0.89	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-25-2	Bromoform	ND		ug/m ³	1.4	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
74-83-9	Bromomethane	ND		ug/m ³	0.52	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-15-0	Carbon disulfide	ND		ug/m ³	0.41	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
56-23-5	Carbon tetrachloride	0.67		ug/m ³	0.21	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS



Sample Information

Client Sample ID: Intermediate

York Sample ID: 19L0858-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 9:54 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-90-7	Chlorobenzene	ND		ug/m ³	0.61	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-00-3	Chloroethane	ND		ug/m ³	0.35	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
67-66-3	Chloroform	ND		ug/m ³	0.65	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
74-87-3	Chloromethane	1.2		ug/m ³	0.27	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
156-59-2	cis-1,2-Dichloroethylene	0.42		ug/m ³	0.13	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.60	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
110-82-7	Cyclohexane	ND		ug/m ³	0.46	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
124-48-1	Dibromochloromethane	ND		ug/m ³	1.1	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-71-8	Dichlorodifluoromethane	ND		ug/m ³	0.66	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
141-78-6	* Ethyl acetate	3.2		ug/m ³	0.96	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
100-41-4	Ethyl Benzene	ND		ug/m ³	0.58	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.4	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
67-63-0	Isopropanol	2.1		ug/m ³	0.65	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
80-62-6	Methyl Methacrylate	3.7		ug/m ³	0.54	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.48	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-09-2	Methylene chloride	4.1		ug/m ³	0.92	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
142-82-5	n-Heptane	ND		ug/m ³	0.54	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
110-54-3	n-Hexane	0.51		ug/m ³	0.47	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
95-47-6	o-Xylene	0.58		ug/m ³	0.58	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
179601-23-1	p- & m- Xylenes	1.8		ug/m ³	1.2	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
622-96-8	* p-Ethyltoluene	ND		ug/m ³	0.65	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
115-07-1	* Propylene	ND		ug/m ³	0.23	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS



Sample Information

Client Sample ID: Intermediate

York Sample ID: 19L0858-02

<u>York Project (SDG) No.</u> 19L0858	<u>Client Project ID</u> LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING	<u>Matrix</u> Vapor Extraction	<u>Collection Date/Time</u> December 20, 2019 9:54 am	<u>Date Received</u> 12/23/2019
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Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-42-5	Styrene	4.0		ug/m ³	0.57	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
127-18-4	Tetrachloroethylene	5.0		ug/m ³	0.90	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.78	1.327	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 02:24	AS
108-88-3	Toluene	5.9		ug/m ³	0.50	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.53	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.60	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
79-01-6	Trichloroethylene	0.21		ug/m ³	0.18	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-69-4	Trichlorofluoromethane (Freon 11)	2.5		ug/m ³	0.75	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.47	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.58	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.085	1.327	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 02:24	AS
	Surrogate Recoveries	Result			Acceptance Range					
460-00-4	Surrogate: SURR: <i>p</i> -Bromofluorobenzene	85.4 %			70-130					

Sample Information

Client Sample ID: Effluent

York Sample ID: 19L0858-03

<u>York Project (SDG) No.</u> 19L0858	<u>Client Project ID</u> LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING	<u>Matrix</u> Vapor Extraction	<u>Collection Date/Time</u> December 20, 2019 10:17 am	<u>Date Received</u> 12/23/2019
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Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
630-20-6	* 1,1,1,2-Tetrachloroethane	ND		ug/m ³	0.92	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
71-55-6	1,1,1-Trichloroethane	ND		ug/m ³	0.73	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/m ³	0.92	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS



Sample Information

Client Sample ID: Effluent

York Sample ID: 19L0858-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 10:17 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/m ³	1.0	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
79-00-5	1,1,2-Trichloroethane	ND		ug/m ³	0.73	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-34-3	1,1-Dichloroethane	ND		ug/m ³	0.54	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-35-4	1,1-Dichloroethylene	ND		ug/m ³	0.13	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/m ³	0.99	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/m ³	0.66	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
106-93-4	1,2-Dibromoethane	ND		ug/m ³	1.0	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
95-50-1	1,2-Dichlorobenzene	ND		ug/m ³	0.80	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
107-06-2	1,2-Dichloroethane	ND		ug/m ³	0.54	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
78-87-5	1,2-Dichloropropane	ND		ug/m ³	0.62	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
76-14-2	1,2-Dichlorotetrafluoroethane	ND		ug/m ³	0.93	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/m ³	0.66	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
106-99-0	1,3-Butadiene	ND		ug/m ³	0.88	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
541-73-1	1,3-Dichlorobenzene	ND		ug/m ³	0.80	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
142-28-9	* 1,3-Dichloropropane	ND		ug/m ³	0.62	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
106-46-7	1,4-Dichlorobenzene	ND		ug/m ³	0.80	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
123-91-1	1,4-Dioxane	ND		ug/m ³	0.96	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
78-93-3	2-Butanone	2.7		ug/m ³	0.39	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
591-78-6	* 2-Hexanone	ND		ug/m ³	1.1	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
107-05-1	3-Chloropropene	ND		ug/m ³	2.1	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
108-10-1	4-Methyl-2-pentanone	ND		ug/m ³	0.55	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
67-64-1	Acetone	13		ug/m ³	0.63	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS



Sample Information

Client Sample ID: Effluent

York Sample ID: 19L0858-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 10:17 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
107-13-1	Acrylonitrile	ND		ug/m ³	0.29	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
71-43-2	Benzene	ND		ug/m ³	0.43	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
100-44-7	Benzyl chloride	ND		ug/m ³	0.69	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-27-4	Bromodichloromethane	ND		ug/m ³	0.89	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-25-2	Bromoform	ND		ug/m ³	1.4	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
74-83-9	Bromomethane	ND		ug/m ³	0.52	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-15-0	Carbon disulfide	ND		ug/m ³	0.42	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
56-23-5	Carbon tetrachloride	0.59		ug/m ³	0.21	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
108-90-7	Chlorobenzene	ND		ug/m ³	0.61	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-00-3	Chloroethane	ND		ug/m ³	0.35	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
67-66-3	Chloroform	ND		ug/m ³	0.65	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
74-87-3	Chloromethane	1.1		ug/m ³	0.28	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
156-59-2	cis-1,2-Dichloroethylene	0.85		ug/m ³	0.13	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/m ³	0.61	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
110-82-7	Cyclohexane	ND		ug/m ³	0.46	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
124-48-1	Dibromochloromethane	ND		ug/m ³	1.1	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-71-8	Dichlorodifluoromethane	0.73	TO-CC V, TO-LC S-H	ug/m ³	0.66	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
141-78-6	* Ethyl acetate	ND		ug/m ³	0.96	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
100-41-4	Ethyl Benzene	ND		ug/m ³	0.58	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
87-68-3	Hexachlorobutadiene	ND		ug/m ³	1.4	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
67-63-0	Isopropanol	ND		ug/m ³	0.66	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS



Sample Information

Client Sample ID: Effluent

York Sample ID: 19L0858-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

19L0858

LUIT 1901 LUITPOLD QUARTERLY AIR SAMPLING

Vapor Extraction

December 20, 2019 10:17 am

12/23/2019

Volatile Organics, EPA TO15 Full List

Log-in Notes:

Sample Notes: TO-VAC

Sample Prepared by Method: EPA TO15 PREP

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
80-62-6	Methyl Methacrylate	2.3		ug/m ³	0.55	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/m ³	0.48	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-09-2	Methylene chloride	16		ug/m ³	0.93	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
142-82-5	n-Heptane	ND		ug/m ³	0.55	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
110-54-3	n-Hexane	ND		ug/m ³	0.47	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
95-47-6	o-Xylene	ND		ug/m ³	0.58	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
179601-23-1	p- & m- Xylenes	ND		ug/m ³	1.2	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
622-96-8	* p-Ethyltoluene	ND		ug/m ³	0.66	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
115-07-1	* Propylene	ND		ug/m ³	0.23	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
100-42-5	Styrene	0.62		ug/m ³	0.57	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
127-18-4	Tetrachloroethylene	ND		ug/m ³	0.90	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
109-99-9	* Tetrahydrofuran	ND		ug/m ³	0.79	1.333	EPA TO-15 Certifications:	12/23/2019 09:00	12/24/2019 03:19	AS
108-88-3	Toluene	ND		ug/m ³	0.50	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/m ³	0.53	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/m ³	0.61	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
79-01-6	Trichloroethylene	0.29		ug/m ³	0.18	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-69-4	Trichlorofluoromethane (Freon 11)	2.8		ug/m ³	0.75	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
108-05-4	Vinyl acetate	ND		ug/m ³	0.47	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
593-60-2	Vinyl bromide	ND		ug/m ³	0.58	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
75-01-4	Vinyl Chloride	ND		ug/m ³	0.085	1.333	EPA TO-15 Certifications: NELAC-NY12058,NJDEP-Queens	12/23/2019 09:00	12/24/2019 03:19	AS
	Surrogate Recoveries	Result			Acceptance Range					
460-00-4	Surrogate: SURR: p-Bromofluorobenzene	83.9 %			70-130					





Sample and Data Qualifiers Relating to This Work Order

TO-VAC	The final vacuum in the canister was less than -2 inches Hg vacuum. The time integrated sampling may be affected and not reflect proper sampling over the time period. The data user should take note.
TO-LCS-H	The result reported for this compound may be biased high due to its behavior in the analysis batch LCS where it recovered greater than 130% of the expected value.
TO-CCV	The value reported is ESTIMATED for this compound due to its behavior during continuing calibration verification (>30% Difference from initial calibration).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.



Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.



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Field Chain-of-Custody Record - AIR

YORK Project No.
1910858

This document serves as your written authorization for YORK to proceed with the analyses requested below. Signature binds you to YORK's Standard Terms & Conditions.

Page 1 of 1

YOUR Information Company: HAM Architects & Engineers Address: 290 Broadhollow Rd Melville NY Phone: (631) 756-8000 Contact: Joe Loesch E-mail: JLoesch@HAM.com		Report To: Company: SAME Address: SAME Phone: SAME Contact: SAME E-mail: SAME		Invoice To: Company: SAME Address: SAME Phone: SAME Contact: SAME E-mail: SAME		YOUR Project Number LUIT 1901 YOUR Project Name Luitold Overbury Air sampling		Turn-Around Time <input type="checkbox"/> RUSH - Next Day <input type="checkbox"/> RUSH - Two Day <input type="checkbox"/> RUSH - Three Day <input type="checkbox"/> RUSH - Four Day <input checked="" type="checkbox"/> Standard (5-7 Day)	
YOUR Project Name Luitold Overbury Air sampling		Report / EDD Type (circle selections) <input checked="" type="checkbox"/> Standard Excel EDD <input type="checkbox"/> EQuIS (Standard) <input checked="" type="checkbox"/> NYSEDEC EQUIS <input type="checkbox"/> NJDEP SRP HazSite		Report / EDD Type (circle selections) <input type="checkbox"/> CT RCP <input type="checkbox"/> CT RCP DQ/DUE <input type="checkbox"/> NJDEP Reduced Deliv. <input type="checkbox"/> NJDKQP		YORK Reg. Comp. Compared to the following Regulation(s): (please fill in)			
Air Matrix Codes <input type="checkbox"/> AI - Indoor Ambient Air <input type="checkbox"/> AO - Outdoor Amb. Air <input type="checkbox"/> AE - Vapor Extraction Well/Process Gas/Effluent <input type="checkbox"/> AS - Soil Vapor/Sub-Slab		Samples From <input checked="" type="checkbox"/> New York <input type="checkbox"/> New Jersey <input type="checkbox"/> Connecticut <input type="checkbox"/> Pennsylvania <input type="checkbox"/> Other		Summary Report <input type="checkbox"/> QA Report <input type="checkbox"/> NY ASP A Package <input type="checkbox"/> NY ASP B Package <input type="checkbox"/> Other:					
Please enter the following REQUIRED Field Data									
Certified Canisters: Batch <u>Individual</u>		Reporting Units: ug/m ³ <input checked="" type="checkbox"/> ppbv <input type="checkbox"/> ppmv <input type="checkbox"/>							
Sample Identification Influent Intermediate Effluent		Date/Time Sampled 12/26/19 807-108 12/26/19 808-954 12/26/19 809-107		Canister Vacuum Before Sampling (in Hg) -30 -26 -29		Canister Vacuum After Sampling (in Hg) -3 -3 -2		Flow Cont. ID 5123 5416 5603	
						Canister ID 17350 20942 28298		Analysis Requested TO-15 TO-15 TO-15	
Comments:									
Samples Relinquished by / Company AL / HAM		Samples Received by / Company 1 P / HAM		Samples Relinquished by / Company 1 P / HAM		Samples Received by / Company 1 P / HAM		Detection Limits Required ≤ 1 ug/m ³ <input type="checkbox"/> NYSEDEC V1 Limits <input type="checkbox"/> Routine Survey <input checked="" type="checkbox"/> Other <input type="checkbox"/>	
Date/Time 12/26/19 9:20		Date/Time 12/27/19 9:30		Date/Time 12/27/19 9:30		Date/Time 12/27/19		Date/Time 12/27/19	
Samples Relinquished by / Company AL / HAM		Samples Received by / Company 1 P / HAM		Samples Relinquished by / Company 1 P / HAM		Samples Received by / Company 1 P / HAM		Sampling Media <input checked="" type="checkbox"/> 6 Liter Canister <input type="checkbox"/> Tedlar Bag	
Date/Time 12/26/19 9:20		Date/Time 12/27/19 9:30		Date/Time 12/27/19 9:30		Date/Time 12/27/19		Date/Time 12/27/19	
Samples Relinquished by / Company AL / HAM		Samples Received by / Company 1 P / HAM		Samples Relinquished by / Company 1 P / HAM		Samples Received by / Company 1 P / HAM		Signature Received in LAB by Alex A Schuck	