

A REPORT

On

DRYCLEANING PLANT EMISSIONS
BASED ON TEST DATA FROM
PLANTS IN NEW YORK STATE

Prepared for:

HALOGENATED SOLVENTS INDUSTRY ALLIANCE

Washington, DC

By:

TATCH TECHNICAL SERVICES
RANDOLPH, NJ

October 8, 2002

Section 1 – Introduction:

My name is Michael D. Tatch. I am president of Tatch Technical Services, a Drycleaning consulting firm located in Randolph, NJ. I have been an engineer for approximately 35 years and have extensive experience in pollution control and remediation of Drycleaning plants. This includes the evaluation, handling, and remediation of industrial residuals including halogenated solvents such as Tetrachloroethylene (PCE), Trichloroethylene (TCE) and their daughter products. My biographical data is appended to this report (Section 6, Attachment 1).

I have been requested by the Halogenated Solvents Industry Alliance (HSIA) to prepare this report pursuant to certain actions by the SCAQMD. Specifically I was asked to review the summary of 300+ Drycleaning plant inspections and to conduct an independent analysis of PCE emissions.

This report is organized into six sections, outlined as follows:

Section 2 – Background and Qualifications

Section 3 – Review of site testing report

Section 4 – Modification of test data

Section 5 - Opinions

Section 6 – Attachments

Attachment 1 – Biographical information: M. D. Tatch

Attachment 2 – NCA Data

Attachment 3 – Specification Sheet for Colorimetric Detector Tubes

Attachment 4 – Emission Calculations

Section 2 – Background and Qualifications:

My academic and work experience is provided in Attachment 1. As related to this report, I started Tatch Technical Services (TTS) in 1987. TTS provides technical service to small organizations such as Drycleaners, Printers, and Laundries. TTS customers are Drycleaners, Drycleaner Chemical Distributors and Drycleaning Machinery Distributors. Technical support includes helping the owners with regulatory compliance, filing of reports, training of employees, purchase of equipment as well as management of chemicals and hazardous waste. Technical support means visiting the plants and meeting with the owners. I estimate that I have inspected more than 1500 Drycleaning plants in the US and Europe since 1987. I have attended various training classes in Hazardous Waste Management, Safety of Hazardous Materials, Hazard Communication, OSHA Regulations, Solvent Handling and Drycleaning Machine Operation. I have worked with State and EPA officials regarding Drycleaning regulations. In 2001, I obtained certification as a New York State (NYS) Drycleaning Instructor. As an instructor, I have conducted classes for NYS Drycleaner Certification. This course includes both classroom training and “hands-on” training of Drycleaners and Inspectors that is required for certification. While working for these owners, visiting the plants and performing the inspections, I have become an expert in Drycleaning Machine design, maintenance and operation.

I have provided consulting service to Drycleaning operations for both the prevention and cleanup of environmental damage. I have managed the removal of more than 50 underground storage tank sites, and, in some cases, the design of replacement above ground tank systems. I have designed and installed numerous containment systems for Drycleaning plants as well as handling systems for Drycleaning Distributors. I have managed the site investigation of more than 30 Drycleaning locations. I have managed the remediation of contaminated sites (both PCE and Petroleum solvents) in NJ, NY, CT, PA and MA.

During the period 1995-1997, the Neighborhood Cleaners Association (NCA) referred many NYC Drycleaners who experienced problems with fugitive emissions resulting in complaints from neighbors to Tatch Technical Services. Often, the complaints resulted in testing of the affected residents by the New York City Department of Health (DOH). I would inspect the plant, machinery and affected areas and provide a report to the Drycleaner. The Drycleaner would make the necessary improvements and/or repairs provided in the report, send notification to the NYDEP, who would inspect and reopen the plant. This portion of my business ended with the implementation of the NY State drycleaning regulations.

As can be seen from the above, I am uniquely qualified to perform this service.

Section 3 – Review of Site Testing Report:

The state regulations require that drycleaning machines in mixed-use facilities (i.e., co-located in residential or commercial buildings) be separated from the rest of the cleaning establishment by a vapor barrier that is impervious to PCE and that ventilation of the vapor barrier enclosure be separate from the remainder of the plant. The regulations further require that all drycleaners be subject to an annual inspection. These inspections must be performed and certified by a professional engineer, registered architect or industrial hygienists approved by the Department of Environmental Conservation (DEC). The inspectors perform an exhaustive review of the machinery, ventilation, ambient air conditions, record keeping and operation of the plant including measurement of PCE levels in the exhaust of the vapor barrier and in the general plant. Any deficiencies reported by this inspector would normally result in substantial fines. The inspections are performed during a workday while normal Drycleaning operations are performed. The regulations require that at least two, full load, Drycleaning cycles are run during the inspection.

At TTS' request, NCA summarized relevant data from 186 plant site inspection reports that it had received over the past 12 months for machines with primary and secondary controls (i.e., "4th generation equipment"). According to NCA, these data are representative of Drycleaning facilities in the state. They were provided to TTS (Section 6, Attachment 2) as a spreadsheet titled, "NCA Data." As can be seen from the report, key elements of the inspection have been summarized in this table.

Attachment 2, column "C" lists the results of 2-hour passive monitoring badge tests for PCE in the ambient air of the plant. The badge is hung at face level outside the vapor barrier, approximately halfway between the Drycleaning machine and the pressing area. The badge is installed and removed by the inspector, then packaged and sent to a NY State ELAP certified

lab, using NIOSH Method 1003. The results are included in the inspection report that is sent to the DEC and the Drycleaner. The values in column "D" are the measured volumes (size) of the vapor barrier room. The values in column "E" are the actual flow of air leaving the vapor barrier rooms. The data in column "E" is routinely taken while the machine is in operation using a hand held flow meter, with the reading taken at the grate of the exhaust vent from the room. The data in column "F" is the results of a Colorimetric tube sample taken at the face of the exhaust duct inside the vapor barrier room, while the Drycleaning machine is operating. According to the manufacturer, the minimum detection concentration of these tubes is 0.4 parts per million (ppm). (See Section 6, Attachment 3.)

In summary, the data provided in Attachment 2 is accurate and valuable information and can be used for estimating realistic emissions from locations with similar equipment for the following reasons:

- a. The inspector is a qualified, experienced technician who has taken the Drycleaning Certification program and passed the test.
- b. The inspector is, by design, independent and is monitored by the DEC.
- c. All testing was completed during "normal" Drycleaning and finishing operations.
- d. The data are not limited to drycleaners of a particular size or compliance status.

Section 4 – Modification of Test Data and Calculations:

Please refer to "Emissions Calculations", which is Section 6, Attachment 3. This attachment consists of four separate spreadsheets.

The first spreadsheet (5 pages) is "Raw NCA Data + Adjustments". Column "C" is a repeat of the badge data from Attachment 2. Many of the entries are titled, "less than..." This value cannot be used in calculations of emissions; therefore, an adjustment was made for those entries and the adjusted value is shown in column "D". As an example, if the value in column "C" was, "less than 0.15", the adjusted value was $\frac{1}{2}$ of 0.15, or 0.075. Columns "E", "F" and "G" are repeats of data from Attachment 2. The results of the Colorimetric tube readings; column "G" were evaluated. Minor errors were possible in reading the color line on the tube. For example if the reading was 0.5 ppm, the inspector may not have been able to see that reading on the tube, etc. It was decided to apply a "correction factor" to this reading that would account for potential detection errors when taking Colorimetric tube measurements. Column "H" represents the reading from column "G" with the addition of 2.0 ppm, even though the tubes can detect concentrations as low as 0.4 ppm. The correction results in a substantial increase in the PCE level, in most cases, and adds a level of conservatism to the emission calculation.

The second spreadsheet (5 pages) is "Main Plant Exhaust" which is a calculation sheet to estimate total emissions of PCE contained in normal plant ventilation exhaust. The basis for this is the ambient levels of PCE in the plant (outside of any vapor barrier room) times the flow rate of the normal exhaust ventilation. Columns "A" through "E" are repeats from the first spreadsheet. Since the total plant volume was not measured as part of the inspection, it was estimated by using a ratio of the vapor barrier room volume as applied to a standard plant

as defined by SCAQMD (1,600 Square Feet of area with a height of 15 Feet). The result of that ratio is shown in column "F". OSHA and most building codes require plant ventilation exhaust that provides for 12 air changes per hour, or one air change every five minutes. Column "G" is the calculated flow rate of the plant ventilation fan. It has been my experience that most Drycleaning plants are built with this level of ventilation. Column "H" is the product of the adjusted badge reading and the calculated flow rate, expressed as milligrams/minute (mg/min). In column "I", the units are changed to grams/second (g/sec).

The third spreadsheet (5 pages) is "Vapor Barrier Room Emissions" which is a calculation sheet to estimate the total emissions of PCE contained in normal vapor barrier room exhaust. Data from the first spreadsheet are repeated and the quantity of PCE in exhaust air, column "G", is calculated as a product of the adjusted colorimetric tube-reading, column "F" and the measured flow rate from the room, column "D". The units are adjusted to g/sec and displayed in column "H".

The fourth spreadsheet (4 pages), "Total Emissions," is a summary of fugitive emissions from both the vapor barrier room and the main plant exhaust. This total reflects the total emissions from the plant. Emissions from the vapor barrier room include any inadvertent PCE vapors from leaks, equipment malfunctions, filter maintenance, and, garment loading/unloading. Emissions from the main exhaust of the plant remove extremely minor, residual PCE vapors from equipment and garment off gassing. Out of 186 plants included in the analysis, only 24 (13 %) exceeded an emission rate of 0.0177 g/sec, which HSIA has indicated would be expected to result in a potential risk of 25-in-one million risk or greater for an off-site worker located 25 meters from the plant using SCAQMD's methodology. A total of 54 facilities (29 %) exceeded an emission rate of 0.0116 g/sec, the corresponding rate for estimated risk for a residential receptor at 25 meters. The average emission rate is 0.0102 g/sec.

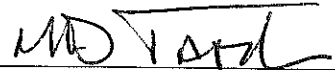
Section 5 - Opinions:

The bases for my opinions are the data sheets (Attachments 2 & 4), my plant inspections and air testing, and my 35 years as an engineer (15 years specific Drycleaning experience).

1. It is my opinion that the data provided in Attachment 1 is representative of the levels of emissions in modern, normally maintained and operated Drycleaning machines.
2. It is my opinion that the modifications to the data for the purposes of this analysis were conservative and produced a "worst-case" scenario that became the basis for the total emissions.
3. It is my opinion that the sum of emissions from the vapor barrier room and the main plant ventilation represent the total fugitive emissions from a modern Drycleaning plant.
4. It is my opinion that data indicating emissions exceeding the emission rates of 0.0116 and 0.0177 g/sec represent a normal and expected array. It was also expected that many

variations above these rates might result from the adjustments to the colorimetric tube test results.

5. It is my opinion that, based on my calculations, a drycleaner with a modern machine (4th Generation or higher) and spin filters, can achieve emissions of less than 0.0116 g/sec when measured using this format.

A handwritten signature in black ink, appearing to read "MD Tatch", written over a horizontal line.

Michael D. Tatch

SECTION 6
ATTACHMENT 1

RESUME OF MICHAEL D. TATCH

FOUR PAGES

RESUME OF MICHAEL D. TATCH

EDUCATION:

University of Akron, Akron, Ohio
M B A, Industrial Management, 1975

USMMA, Kings Point, New York
B S, Eng, 1967

RADIATION MONITOR, 1975
ASME CERTIFICATION, 1977
HAZWOPER SUPERVISION, 1990
FORLIFT TRAINER, 1983, 2000
DOT TRAININER, 1988, 2000
NYSDEC CERTIFICATION 2001

EXPERIENCE:

1987-Date - Founder, President of TTS Associates, specializing in:

RTK Consulting
DOT Consulting
Hazardous Waste Management
Underground Tank Removals
Expert Witness Testimony
NYS Part 232 Compliance Instructor
MSDS Preparation

OSHA Consulting
Environmental Audits
Environmental Cleanups
Aboveground Tank Design
Expert Reports
EPA, NESHAP Compliance
Product Labeling Compliance

TTS Associates have provided Project Management for field environmental activities such as spill cleanup, groundwater testing and remediation, UST removal and soil remediation for Drycleaners. TTS has written Material Safety Data Sheets (MSDS's) for small manufacturers of Drycleaning and Laundry Chemicals as well as the Truck and Automotive Tire Repair Industry. TTS Associates have prepared Right-To-Know and/or OSHA Haz Com Programs for more than 1500 Small Businesses since 1987. Mr. Tatch has created RTK and OSHA programs, including specialized Employee Training Videos, RTK Software and Custom Training Programs for the Drycleaning, Printing, Dental, Chemical Industries and Municipal Governments. TTS is the audit/inspection agency for Fireman's Fund and Homestead Insurance Companies, providing Pollution Liability Insurance for small businesses and contractors. TTS has performed Environmental and OSHA Audits for financial institutions in the New York Metro area as well as international organizations such as CIS & ATT. TTS is a supplier of Patented Environmental Equipment for the Drycleaning Industry. TTS maintains active membership in TCATA, NCA, and NEFA.

1967-1987 - Utility Power Supply Industry

Mike Tatch has over 19 years experience in heavy industrial manufacturing, field construction, and design engineering within the Nuclear Power and Navy Nuclear Industries. While with Westinghouse, Mike Tatch was awarded several key patents for equipment design.

PUBLICATION - PRESENTATIONS BY MICHAEL D. TATCH

"OSHA Hazard Communications Program for Drycleaners": A complete program for Drycleaners that included a 70 page HAZ COM program which was prepared individually using specially developed software as well as a custom made 60 minute Video that provided education to the Drycleaner Owner regarding OSHA Safety, Spill Response and Emergency Response. Second half of Video was shown to employees by owner for OSHA Haz Com training. Over 1500 sold throughout the US. September 1990.

"The OSHA Man Cometh: presented at the regional trade show produced by the Neighborhood Cleaners Association, International (NCA-I) in Hackensack, NJ, April, 1991.

"Preparing for the Future Environmental Responsibilities": A slide program dealing with safety of Distributors and Warehouses which distribute Drycleaning solvent. Presented to the Textile Care Allied Trade Association, a national association of Distributors, Manufacturers and Suppliers of Drycleaning Products, chemicals and solvents. May, 1993.

"Separator Water Disposal Technology": A complete review of all available technology for legal disposal of Separator Water from Drycleaning Machines. Drycleaner News, April 1994

"How to survive a visit from the local inspector": Presented to local chapters of Neighborhood Cleaners Association members at 18 locations from Buffalo, NY to Miami, FL. January, 1992

"Think Before You Leap (into Wetcleaning)": Published in Drycleaning News, June 1995; American Drycleaner (National Publication), July 1995.

"How to Prevent Fugitive Perc Emissions from Your Drycleaning Machine": Presented to local chapters of Neighborhood Cleaners Association members at 18 locations from Buffalo, NY to Miami, FL. January, 1997

"DA-SPECTOR, DA-SPECTOR" - A detailed program on how to comply and pass the new, Part 232 inspection. Presented to NCA-I Regional Conference in Raritan, NJ on 9-20-97.

"How to Survive a DEP/EPA Inspection" - a detailed program on how to comply with the Federal and State Hazardous Waste Regulations. Presented to the NCA-I Bergen County chapter meeting on 9-25-01.

EXPERT WITNESS EXPERIENCE OF MICHAEL D. TATCH

1. Client: Mr. Claude Foreman
Case/Project: Mr. Foreman was being sued by former Employee
Dates: May, 1995
Location: Metairie, LA
Attorneys: Mr. James Taylor, Hoffman, Sutterfield, Enfenat, & Bankston
Scope: Telephone Deposition Testimony
2. Client: Mr. Richard Sills
Case/Project: Richard Sills adv. Bedford Affiliates, Inc.
Dates: May 1997
Location: Uniondale, NY
Attorneys: Mr. Richard Leland, Rosenman & Colin
Scope: Review Expert reports & Testimony, prepare expert report
3. Client: Mr. Wayne Love, Blue Swan Cleaners
Case/Project: The Borough of Park Ridge v Handy & Harman, et.al.
Dates: September 1997
Location: Newark, NJ
Attorneys: Mr. Andrew Perel, Rosenman & Colin
Scope: Review expert reports, Review groundwater reports, prepare expert report, provide deposition testimony
4. Client: Mr. & Mrs. Schwartz (Property Owners of Mac's Cleaners)
Case/Project: Hartts v. Schwartz litigation (former dry cleaners)
Dates: October-December, 1997
Location: North Branford, CT
Attorneys: Ms. Kathleen Conway, Adams & Conway
Scope: Review expert reports, Review deposition testimony, prepare expert report, provide deposition testimony
5. Client: Cleaners Products (Harold Janow)
Case/Project: Hilowitz v. Brookdale Laundry & Drycleaner
Dates: October 98 - May 99
Location: Bloomfield, NJ
Attorneys: McElroy, Deutsch & Mulvaney, et. al.
Scope: Review expert reports, Review deposition testimony, prepare expert report, provide deposition testimony

EXPERT WITNESS EXPERIENCE OF MICHAEL D. TATCH

(Page 2 of 2)

6. Client Union S.P.A.
Case/Project: Chong v. S.P.A., et. al.
Dates: August, 2001 -August, 2002
Location: Atlanta, GA
Attorneys: Richard Petrillo, Pino & Associates (White Plains, NY)
Scope: Review documents, plant visit, technical support, and deposition

7. Client Millville Laundry & Drycleaners
Case/Project: Personal Injury case between D/C Plant Owner vs. Employees
Dates: April 2000 - April 2002
Location: Millville, NJ
Attorneys: Edward H. Sheppard, Shook, Hardy & Bacon (Kansas City, MS)
Scope: Deposition as fact witness

8. Client The Dow Chemical Company
Case/Project: MacDonald Highway 6 v. Dow
Dates: March 2002 - August 2002
Location: Houston, TX
Attorneys: John B. Shoebottom, Porter & Hedges, L.L.P.
Scope: Review documents, Technical Support for Deposition

9. Client Stuart Depper
Case/Project: Depper v. Johnson
Dates: March 2002 - August 2002
Location: Oakland, CA
Attorneys: Alvin Cohen, Smiland & Khachigian
Scope: Review documents, Technical Support, Expert Report

SECTION 6
ATTACHMENT 2

NCA DATA

FOUR PAGES

Raw Data from NCA Inspection Reports

No.	Facility location	Result of badge sampling (ppm PCE)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Generation
1	Manhattan	less than 0.15	872	946	0	4
2	Manhattan	0.52	1,105	374	0	4
3	Manhattan	0.18	903	430	0	4
4	Manhattan	less than 0.15	1,235	503	0	4
5	Manhattan	less than 0.15	2,247	502	0	4
6	Manhattan	0.53	2,202	490	0	4
7	Manhattan	less than 0.15	1,033	548	0	4
8	Manhattan	0.22	1,101	1,794	0	4
9	Manhattan	1.00	964	779	0	4
10	Manhattan	less than 0.15	1,067	753	0	4
11	Manhattan	less than 0.15	1,023	554	0	4
12	Manhattan	0.30	958	331	0	4
13	Manhattan	less than 0.15	1,281	888	0	4
14	Manhattan	less than 0.15	964	318	0	4
15	Manhattan	less than 0.15	862	853	0	4
16	Manhattan	0.63	741	848	0	4
17	Manhattan	0.29	1,665	1,104	0	4
18	Manhattan	less than 0.15	719	694	0	4
19	Manhattan	less than 0.15	660	579	0	4
20	Manhattan	less than 0.15	1,075	1,463	0	4
21	Manhattan	0.22	836	223	0	4
22	Manhattan	less than 0.15	866	893	0	4
23	Manhattan	0.25	1,225	776	0	4
24	Manhattan	0.38	1,202	298	0	4
25	Manhattan	1.10	2,481	2,836	0	4
26	Queens	less than 0.15	759	543	0	4
27	Queens	0.40	3,628	1,181	0	4
28	Queens	0.40	1,132	405	0	4
29	Queens	less than 0.15	523	971	0	4
30	Queens	0.84	1,075	819	0	4
31	Queens	less than 0.15	633	1,036	0	4
32	Queens	less than 0.15	1,170	1,059	0	4
33	Queens	0.26	1,049	832	0	4
34	Queens	less than 0.15	1,119	608	0	4
35	Queens	0.41	988	533	0	4
36	Queens	less than 0.15	925	371	0	4
37	Queens	0.20	973	459	0	4
38	Queens	1.20	1,064	558	0	4
39	Queens	less than 0.15	839	576	0	4
40	Queens	less than 0.15	974	524	0	4
41	Queens	less than 0.15	835	833	0	4
42	Queens	less than 0.15	808	555	0	4
43	Queens	less than 0.15	2,255	467	0	4
44	Queens	0.60	876	1,121	0	4
45	Queens	0.41	1,157	400	0	4
46	Queens	0.19	810	722	0	4
47	Queens	0.25	982	554	0	4
48	Queens	less than 0.15	716	661	0	4
49	Queens	0.58	839	946	0	4
50	Queens	less than 0.15	746	812	0	4
51	Queens	less than 0.15	1,169	760	0	4
52	Queens	1.10	1,170	594	0	4
53	Queens	0.19	1,061	1,029	0	4
54	Queens	0.81	860	300	0	4

Raw Data from NCA Inspection Reports

No.	Facility location	Result of badge sampling (ppm PCE)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Generation
55	Queens	0.78	990	1,549	0	4
56	Brooklyn	0.50	799	301	0	4
57	Brooklyn	0.33	1,040	626	0	4
58	Brooklyn	less than 0.15	1,065	4,229	0	4
59	Brooklyn	less than 0.15	971	455	0	4
60	Brooklyn	0.28	1,128	296	0	4
61	Brooklyn	0.18	1,008	443	0	4
62	Brooklyn	0.25	432	139	0	4
63	Brooklyn	0.43	1,196	940	0	4
64	Brooklyn	0.29	787	704	0	4
65	Brooklyn	0.58	2,318	2,087	0	4
66	Brooklyn	less than 0.15	1,595	924	0	4
67	Brooklyn	less than 0.15	815	272	0	4
68	Brooklyn	0.17	882	735	0	4
69	Brooklyn	less than 0.15	1,008	666	0	4
70	Brooklyn	0.41	1,442	581	0	4
71	Brooklyn	less than 0.15	1,688	892	5	4
72	Brooklyn	less than 0.15	887	983	0	4
73	Brooklyn	0.26	791	501	0	4
74	Brooklyn	0.67	894	581	0	4
75	Brooklyn	less than 0.15	1,233	1,087	5	4
76	Brooklyn	less than 0.15	824	1,290	0	4
77	Brooklyn	less than 0.15	856	1,142	0	4
78	Brooklyn	less than 0.15	791	332	0	4
79	Brooklyn	less than 0.15	810	588	0	4
80	Brooklyn	0.67	963	315	0	4
81	Brooklyn	0.73	796	361	0	4
82	Brooklyn	less than 0.15	768	583	0	4
83	Brooklyn	0.79	783	528	0	4
84	Brooklyn	1.50	737	609	0	4
85	Brooklyn	1.70	606	788	0	4
86	Brooklyn	less than 0.15	862	1,413	0	4
87	Brooklyn	0.90	732	1,363	0	4
88	Brooklyn	0.41	723	558	0	4
89	Brooklyn	1.40	653	281	0	4
90	Brooklyn	less than 0.15	1,269	1,230	0	4
91	Bronx	0.83	1,170	522	0	4
92	Bronx	0.80	1,027	392	0	4
93	Bronx	0.27	1,130	320	0	4
94	Bronx	1.90	772	699	0	4
95	Bronx	less than 0.15	1,514	604	0	4
96	Bronx	0.52	757	660	0	4
97	Bronx	less than 0.15	979	781	0	4
98	Bronx	0.20	726	370	0	4
99	Bronx	0.32	1,703	500	0	4
100	Bronx	less than 0.15	843	469	0	4
101	Bronx	0.15	589	747	0	4
102	Bronx	less than 0.15	967	800	0	4
103	Bronx	0.68	1,029	584	0	4
104	Bronx	less than 0.15	648	1,103	0	4
105	Bronx	0.28	805	403	0	4
106	Bronx	less than 0.15	881	301	0	4
107	Bronx	less than 0.15	1,087	2,325	0	4
108	Bronx	0.72	821	172	0	4

Raw Data from NCA Inspection Reports

No.	Facility location	Result of badge sampling (ppm PCE)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Generation
109	Bronx	0.36	774	834	0	4
110	Bronx	less than 0.15	837	558	0	4
111	Bronx	0.51	748	694	0	4
112	Bronx	0.29	950	945	0	4
113	Bronx	less than 0.15	873	1,331	0	4
114	Bronx	less than 0.15	948	1,000	0	4
115	Bronx	0.73	606	238	0	4
116	Staten Island	0.22	783	439	0	4
117	Staten Island	less than 0.15	963	744	0	4
118	Staten Island	0.17	742	769	0	4
119	Staten Island	0.62	807	300	0	4
120	Nassau, L.I.	0.69	1,075	362	0	4
121	Nassau, L.I.	less than 0.15	1,042	591	0	4
122	Nassau, L.I.	less than 0.15	1,210	365	0	4
123	Nassau, L.I.	0.70	970	308	0	4
124	Nassau, L.I.	0.27	1,858	683	0	4
125	Nassau, L.I.	0.83	924	447	0	4
126	Nassau, L.I.	0.31	1,091	779	0	4
127	Nassau, L.I.	1.20	619	302	0	4
128	Nassau, L.I.	0.45	975	275	0	4
129	Nassau, L.I.	0.20	1,266	695	0	4
130	Nassau, L.I.	1.90	1,113	557	0	4
131	Nassau, L.I.	0.51	969	2,121	0	4
132	Nassau, L.I.	less than 0.15	1,056	695	0	4
133	Nassau, L.I.	0.84	860	778	0	4
134	Nassau, L.I.	less than 0.15	569	822	0	4
135	Nassau, L.I.	0.16	1,534	1,479	0	4
136	Nassau, L.I.	less than 0.15	1,098	553	0	4
137	Nassau, L.I.	0.99	1,020	737	0	4
138	Nassau, L.I.	0.20	932	272	0	4
139	Nassau, L.I.	0.64	887	861	0	4
140	Nassau, L.I.	0.79	699	1,054	2	4
141	Nassau, L.I.	less than 0.15	765	383	0	4
142	Suffolk, L.I.	less than 0.15	1,117	851	0	4
143	Suffolk, L.I.	0.37	791	612	0	4
144	Suffolk, L.I.	less than 0.15	1,325	794	0	4
145	Suffolk, L.I.	less than 0.15	1,018	888	0	4
146	Suffolk, L.I.	0.65	983	804	0	4
147	Suffolk, L.I.	0.09	812	164	0	4
148	Suffolk, L.I.	1.40	673	493	0	4
149	Suffolk, L.I.	less than 0.15	1,067	964	0	4
150	Suffolk, L.I.	less than 0.15	815	529	0	4
151	Suffolk, L.I.	less than 0.15	790	305	0	4
152	Suffolk, L.I.	less than 0.15	808	1,240	0	4
153	Suffolk, L.I.	less than 0.15	879	1,132	0	4
154	Suffolk, L.I.	less than 0.15	866	1,161	0	4
155	Suffolk, L.I.	0.42	1,047	357	0	4
156	Suffolk, L.I.	less than 0.15	756	698	0	4
157	Suffolk, L.I.	less than 0.15	739	485	0	4
158	Suffolk, L.I.	less than 0.15	624	940	0	4
159	Suffolk, L.I.	less than 0.15	1,436	483	0	4
160	Suffolk, L.I.	1.60	993	1,004	0	4
161	Suffolk, L.I.	0.16	889	402	0	4
162	Suffolk, L.I.	less than 0.15	776	519	0	4

Raw Data from NCA Inspection Reports

No.	Facility location	Result of badge sampling (ppm PCE)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Generation
163	Upstate	0.19	819	574	0	4
164	Upstate	less than 0.15	1,061	417	0	4
165	Upstate	less than 0.15	688	616	0	4
166	Upstate	less than 0.15	1,031	667	0	4
167	Upstate	1.20	912	902	0	4
168	Upstate	less than 0.15	1,003	855	0	4
169	Upstate	0.52	1,164	405	0	4
170	Upstate	less than 0.15	910	1,059	0	4
171	Upstate	0.55	741	1,047	0	4
172	Upstate	0.16	1,095	679	0	4
173	Upstate	less than 0.15	1,641	1,133	0	4
174	Upstate	0.29	1,190	2,032	0	4
175	Upstate	less than 0.15	520	839	0	4
176	Upstate	less than 0.15	781	489	0	4
177	Upstate	less than 0.15	849	438	0	4
178	Upstate	less than 0.15	1,234	455	0	4
179	Upstate	0.79	715	340	0	4
180	Upstate	0.10	948	950	0	4
181	Upstate	0.68	925	686	0	4
182	Upstate	0.17	953	316	0	4
183	Upstate	less than 0.15	1,060	683	0	4
184	Upstate	0.18	1,270	689	0	4
185	Upstate	0.32	927	1,452	0	4
186	Upstate	0.65	1,107	696	0	4

SECTION 6
ATTACHMENT 3

SPECIFICATION SHEET FOR
COLORIMETRIC DETECTOR TUBES

ONE PAGE

TETRACHLOROETHYLENE (PERCHLOROETHYLENE) MIDDLE RANGE DETECTOR TUBE

The Gastec Detector Tube No. 133M provides a rapid, fully quantitative analysis of the concentration of TETRACHLOROETHYLENE (PERCHLOROETHYLENE) in air with an accuracy tolerance of $\pm 25\%$ at 1, 2 and 5 times TLV and $\pm 35\%$ at 1/2 TLV-TWA utilizing the Gastec Multi-Stroke Gas Sampling Pump.

PERFORMANCE:

Calibration Scale	5 - 100 ppm (based on 1 pump stroke)
Measuring Range	2 - 5 ppm
Number of Pump Strokes	1
Correction Factor	0.4
Detecting Limit*	0.4 ppm
Sampling Time	1 minute per pump stroke
Color Change	Yellow - Purple

* Minimum detectable concentration.

SHELF LIFE:

Please refer to the terms of validity of a label of a Detector Tube Box.

MEASUREMENT PROCEDURE:

1. Break tips off a fresh detector tube by bending each tube end in the tube tip breaker of the pump.
2. Insert the tube securely into the rubber inlet of the pump with the arrow on the tube pointing toward the pump.
3. Make certain the pump handle is all the way in. Align the guide marks on handle and pump body.
4. Pull the handle all the way out until it locks on 1 pump stroke (100 ml). Wait 1 minute until staining stops.
5. Read concentration at the interface of the stained-to-unstained reagent.
6. If the stain exceeds the highest calibration mark by 1 pump stroke sampling, use 1/2 stroke sampling (50 ml) in which case the true concentration is obtained by multiplying the tube reading by 2.5.
7. If the stain does not attain the first calibration mark, repeat one more pump stroke and divide the tube reading by 2.5.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:

Calibration of the Gastec detector tube No. 133M is based on a tube temperature of 20°C (68°F) and not the temperature of the gas being sampled, approximately 50% relative humidity, and normal atmospheric pressure.

1. For temperature other than 20°C (68°F), tube reading must be corrected according to the following Temperature Correction Table:

Temperature Correction Table

Tube Reading (ppm)	True Concentration (ppm)			
	0°C (32°F)	10°C (50°F)	20°C (68°F)	40°C (104°F)
100	410	155	100	80
80	310	125	80	65
60	210	95	60	50
40	130	60	40	35
20	55	30	20	17
10	20	13	10	8
5	8	6	5	4

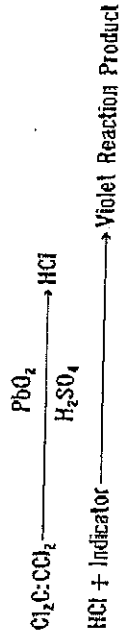
2. No correction is required for relative humidity range of 0 - 90%.

3. Tube reading is proportional to absolute pressure. To correct for pressure, multiply by

$$\frac{760}{\text{Atmospheric Pressure (mmHg)}}$$

DETECTION PRINCIPLE:

Perchloroethylene is decomposed by nascent oxygen generated by oxidizing agent to liberate hydrogen chloride, which discolors Hammett indicator (4-phenylazodiphenylamine) to purple.



INTERFERENCES:

Substance	Concentration	Interference	Changes color by itself to
Bromine, Chlorine		+	Purple
Hydrogen chloride		+	
Unsaturated halogenated hydrocarbons		+	
Aromatic hydrocarbons	≥ 100 ppm	-	No
Acetone	≥ 200 ppm	No	
Nitrogen oxides		No	

DANGEROUS AND HAZARDOUS PROPERTIES:

Threshold Limit Value-Time Weighted Average by ACGIH (1998): 25 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (1998): 100 ppm

TUBES MUST BE STORED BELOW 10°C (50°F).

SEE OPERATING INSTRUCTIONS INCLUDED WITH THE GASTEC MULTI-STROKE GAS SAMPLING PUMP.

Manufacturer : Gastec Corporation
6431 Fukaya, Ayase-City, 252-1103, Japan

SECTION 6
ATTACHMENT 4

EMISSION CALCULATIONS

NINETEEN PAGES

Raw NCA Data + Adjustments

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)
1	Manhattan	less than 0.15	0.075	872	946	0	2
2	Manhattan	0.52	0.52	1,105	374	0	2
3	Manhattan	0.18	0.18	903	430	0	2
4	Manhattan	less than 0.15	0.075	1,235	503	0	2
5	Manhattan	less than 0.15	0.075	2,247	2,247	0	2
6	Manhattan	0.53	0.53	2,202	490	0	2
7	Manhattan	less than 0.15	0.075	1,033	548	0	2
8	Manhattan	0.22	0.22	1,101	1,794	0	2
9	Manhattan	1.00	1.00	964	779	0	2
10	Manhattan	less than 0.15	0.075	1,067	753	0	2
11	Manhattan	less than 0.15	0.075	1,023	554	0	2
12	Manhattan	0.30	0.30	958	331	0	2
13	Manhattan	less than 0.15	0.075	1,281	888	0	2
14	Manhattan	less than 0.15	0.075	964	318	0	2
15	Manhattan	less than 0.15	0.075	862	853	0	2
16	Manhattan	0.63	0.63	741	848	0	2
17	Manhattan	0.29	0.29	1,665	1,104	0	2
18	Manhattan	less than 0.15	0.075	719	694	0	2
19	Manhattan	less than 0.15	0.075	660	579	0	2
20	Manhattan	less than 0.15	0.075	1,075	1,463	0	2
21	Manhattan	0.22	0.22	836	223	0	2
22	Manhattan	less than 0.15	0.075	866	893	0	2
23	Manhattan	0.25	0.25	1,225	776	0	2
24	Manhattan	0.38	0.38	1,202	298	0	2
25	Manhattan	1.10	1.10	2,481	2,836	0	2
26	Queens	less than 0.15	0.075	759	543	0	2
27	Queens	0.40	0.40	3,628	1,181	0	2
28	Queens	0.40	0.40	1,132	405	0	2
29	Queens	less than 0.15	0.075	523	971	0	2
30	Queens	0.84	0.84	1,075	819	0	2
31	Queens	less than 0.15	0.075	633	1,036	0	2
32	Queens	less than 0.15	0.075	1,170	1,059	0	2
33	Queens	0.26	0.26	1,049	832	0	2
34	Queens	less than 0.15	0.075	1,119	608	0	2
35	Queens	0.41	0.41	988	533	0	2
36	Queens	less than 0.15	0.075	925	371	0	2
37	Queens	0.20	0.20	973	459	0	2
38	Queens	1.20	1.20	1,064	558	0	2
39	Queens	less than 0.15	0.075	839	576	0	2
40	Queens	less than 0.15	0.075	974	524	0	2
41	Queens	less than 0.15	0.075	835	833	0	2
42	Queens	less than 0.15	0.075	808	555	0	2

Raw NCA Data + Adjustments

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)
43	Queens	less than 0.15	0.075	2,255	467	0	2
44	Queens	0.60	0.60	876	1,121	0	2
45	Queens	0.41	0.41	1,157	400	0	2
46	Queens	0.19	0.19	810	722	0	2
47	Queens	0.25	0.25	982	554	0	2
48	Queens	less than 0.15	0.075	716	661	0	2
49	Queens	0.58	0.58	839	946	0	2
50	Queens	less than 0.15	0.075	746	812	0	2
51	Queens	less than 0.15	0.075	1,169	760	0	2
52	Queens	1.10	1.10	1,170	594	0	2
53	Queens	0.19	0.19	1,061	1,029	0	2
54	Queens	0.81	0.81	860	300	0	2
55	Queens	0.78	0.78	990	1,549	0	2
56	Brooklyn	0.50	0.50	799	301	0	2
57	Brooklyn	0.33	0.33	1,040	626	0	2
58	Brooklyn	less than 0.15	0.075	1,065	4,229	0	2
59	Brooklyn	less than 0.15	0.075	971	455	0	2
60	Brooklyn	0.28	0.28	1,128	296	0	2
61	Brooklyn	0.18	0.18	1,008	443	0	2
62	Brooklyn	0.25	0.25	432	139	0	2
63	Brooklyn	0.43	0.43	1,196	940	0	2
64	Brooklyn	0.29	0.29	787	704	0	2
65	Brooklyn	0.58	0.58	2,318	2,087	0	2
66	Brooklyn	less than 0.15	0.075	1,595	924	0	2
67	Brooklyn	less than 0.15	0.075	815	272	0	2
68	Brooklyn	0.17	0.17	882	735	0	2
69	Brooklyn	less than 0.15	0.075	1,008	666	0	2
70	Brooklyn	0.41	0.41	1,442	581	0	2
71	Brooklyn	less than 0.15	0.075	1,688	892	5	2
72	Brooklyn	less than 0.15	0.075	887	983	0	7
73	Brooklyn	0.26	0.26	791	501	0	2
74	Brooklyn	0.67	0.67	894	581	0	2
75	Brooklyn	less than 0.15	0.075	1,233	1,087	0	2
76	Brooklyn	less than 0.15	0.075	824	1,290	5	2
77	Brooklyn	less than 0.15	0.075	856	1,142	0	7
78	Brooklyn	less than 0.15	0.075	791	332	0	2
79	Brooklyn	less than 0.15	0.075	810	588	0	2
80	Brooklyn	0.67	0.67	963	315	0	2
81	Brooklyn	0.73	0.73	796	361	0	2
82	Brooklyn	less than 0.15	0.075	768	583	0	2
83	Brooklyn	0.79	0.79	783	528	0	2
84	Brooklyn	1.50	1.50	737	809	0	2

Raw NCA Data + Adjustments

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)
85	Brooklyn	1.70	1.70	606	788	0	2
86	Brooklyn	less than 0.15	0.075	862	1,413	0	2
87	Brooklyn	0.90	0.90	732	1,363	0	2
88	Brooklyn	0.41	0.41	723	558	0	2
89	Brooklyn	1.40	1.40	553	281	0	2
90	Brooklyn	less than 0.15	0.075	1,269	1,230	0	2
91	Bronx	0.83	0.83	1,170	522	0	2
92	Bronx	0.80	0.80	1,027	392	0	2
93	Bronx	0.27	0.27	1,130	320	0	2
94	Bronx	1.90	1.90	772	699	0	2
95	Bronx	less than 0.15	0.075	1,514	604	0	2
96	Bronx	0.52	0.52	757	660	0	2
97	Bronx	less than 0.15	0.075	979	781	0	2
98	Bronx	0.20	0.20	726	370	0	2
99	Bronx	0.32	0.32	1,703	500	0	2
100	Bronx	less than 0.15	0.075	843	469	0	2
101	Bronx	0.15	0.15	589	747	0	2
102	Bronx	less than 0.15	0.075	967	800	0	2
103	Bronx	0.68	0.68	1,029	584	0	2
104	Bronx	less than 0.15	0.075	648	1,103	0	2
105	Bronx	0.28	0.28	805	403	0	2
106	Bronx	less than 0.15	0.075	881	301	0	2
107	Bronx	less than 0.15	0.075	1,087	2,325	0	2
108	Bronx	0.72	0.72	821	172	0	2
109	Bronx	0.36	0.36	774	834	0	2
110	Bronx	less than 0.15	0.075	837	558	0	2
111	Bronx	0.51	0.51	748	694	0	2
112	Bronx	0.29	0.29	950	945	0	2
113	Bronx	less than 0.15	0.075	873	1,331	0	2
114	Bronx	less than 0.15	0.075	948	1,000	0	2
115	Bronx	0.73	0.75	606	238	0	2
116	Staten Island	0.22	0.22	783	439	0	2
117	Staten Island	less than 0.15	0.075	963	744	0	2
118	Staten Island	0.17	0.17	742	769	0	2
119	Staten Island	0.62	0.62	807	300	0	2
120	Nassau, L.I.	0.69	0.69	1,075	362	0	2
121	Nassau, L.I.	less than 0.15	0.075	1,042	591	0	2
122	Nassau, L.I.	less than 0.15	0.075	1,210	365	0	2
123	Nassau, L.I.	0.70	0.70	970	308	0	2
124	Nassau, L.I.	0.27	0.27	1,858	683	0	2
125	Nassau, L.I.	0.83	0.83	924	447	0	2
126	Nassau, L.I.	0.31	0.31	1,091	779	0	2

Raw NCA Data + Adjustments

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)
127	Nassau, L.I.	1.20	1.20	619	302	0	2
128	Nassau, L.I.	0.45	0.45	975	275	0	2
129	Nassau, L.I.	0.20	0.20	1,266	695	0	2
130	Nassau, L.I.	1.90	1.90	1,113	557	0	2
131	Nassau, L.I.	0.51	0.51	969	2,121	0	2
132	Nassau, L.I.	less than 0.15	0.075	1,056	695	0	2
133	Nassau, L.I.	0.84	0.84	860	778	0	2
134	Nassau, L.I.	less than 0.15	0.075	569	822	0	2
135	Nassau, L.I.	0.16	0.16	1,594	1,479	0	2
136	Nassau, L.I.	less than 0.15	0.075	1,098	553	0	2
137	Nassau, L.I.	0.99	0.99	1,020	737	0	2
138	Nassau, L.I.	0.20	0.20	932	272	0	2
139	Nassau, L.I.	0.64	0.64	887	861	0	2
140	Nassau, L.I.	0.79	0.79	699	1,054	2	2
141	Nassau, L.I.	less than 0.15	0.075	765	383	2	4
142	Suffolk, L.I.	less than 0.15	0.075	1,117	851	0	2
143	Suffolk, L.I.	0.37	0.37	791	612	0	2
144	Suffolk, L.I.	less than 0.15	0.075	1,325	794	0	2
145	Suffolk, L.I.	less than 0.15	0.075	1,018	888	0	2
146	Suffolk, L.I.	0.65	0.65	983	804	0	2
147	Suffolk, L.I.	0.09	0.09	812	164	0	2
148	Suffolk, L.I.	1.40	1.40	673	493	0	2
149	Suffolk, L.I.	less than 0.15	0.075	1,067	964	0	2
150	Suffolk, L.I.	less than 0.15	0.075	815	529	0	2
151	Suffolk, L.I.	less than 0.15	0.075	790	305	0	2
152	Suffolk, L.I.	less than 0.15	0.075	808	1,240	0	2
153	Suffolk, L.I.	less than 0.15	0.075	879	1,132	0	2
154	Suffolk, L.I.	less than 0.15	0.075	866	1,161	0	2
155	Suffolk, L.I.	0.42	0.42	1,047	357	0	2
156	Suffolk, L.I.	less than 0.15	0.075	756	698	0	2
157	Suffolk, L.I.	less than 0.15	0.075	739	485	0	2
158	Suffolk, L.I.	less than 0.15	0.075	624	940	0	2
159	Suffolk, L.I.	less than 0.15	0.075	1,436	483	0	2
160	Suffolk, L.I.	1.60	1.60	993	1,004	0	2
161	Suffolk, L.I.	0.16	0.16	889	402	0	2
162	Suffolk, L.I.	less than 0.15	0.075	776	519	0	2
163	Upstate	0.19	0.19	819	574	0	2
164	Upstate	less than 0.15	0.075	1,061	417	0	2
165	Upstate	less than 0.15	0.075	688	616	0	2
166	Upstate	less than 0.15	0.075	1,031	667	0	2
167	Upstate	1.20	1.20	912	902	0	2
168	Upstate	less than 0.15	0.075	1,003	855	0	2

Raw NCA Data + Adjustments

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)
169	Upstate	0.52	0.52	1,164	405	0	2
170	Upstate	less than 0.15	0.075	910	1,059	0	2
171	Upstate	0.55	0.55	741	1,047	0	2
172	Upstate	0.16	0.16	1,095	679	0	2
173	Upstate	less than 0.15	0.075	1,641	1,133	0	2
174	Upstate	0.29	0.29	1,190	2,032	0	2
175	Upstate	less than 0.15	0.075	520	839	0	2
176	Upstate	less than 0.15	0.075	781	489	0	2
177	Upstate	less than 0.15	0.075	849	438	0	2
178	Upstate	less than 0.15	0.075	1,234	455	0	2
179	Upstate	0.79	0.79	715	340	0	2
180	Upstate	0.10	0.10	948	950	0	2
181	Upstate	0.68	0.68	925	686	0	2
182	Upstate	0.17	0.17	953	316	0	2
183	Upstate	less than 0.15	0.075	1,050	683	0	2
184	Upstate	0.18	0.18	1,270	689	0	2
185	Upstate	0.32	0.32	927	1,452	0	2
186	Upstate	0.65	0.65	1,107	696	0	2

Main Plant Emissions

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Plant volume ratio from room volume (cu. ft.)	Estimated volumetric flowrate main plant exhaust (cfm)	PCE emission rate main plant exhaust (mg/min)	PCE emission rate main plant exhaust (g/sec)
1	Manhattan	less than 0.15	0.075	872	20,783	4,157	60	0.0010
2	Manhattan	0.52	0.52	1,105	26,336	5,267	528	0.0088
3	Manhattan	0.18	0.18	903	21,521	4,304	149	0.0025
4	Manhattan	less than 0.15	0.075	1,235	29,434	5,887	85	0.0014
5	Manhattan	less than 0.15	0.075	2,247	53,553	10,711	155	0.0026
6	Manhattan	0.53	0.53	2,202	52,481	10,496	1,072	0.0179
7	Manhattan	less than 0.15	0.075	1,033	24,620	4,924	71	0.0012
8	Manhattan	0.22	0.22	1,101	26,240	5,248	222	0.0037
9	Manhattan	1.00	1.00	964	22,975	4,595	885	0.0148
10	Manhattan	less than 0.15	0.075	1,067	25,430	5,086	73	0.0012
11	Manhattan	less than 0.15	0.075	1,023	24,381	4,876	70	0.0012
12	Manhattan	0.30	0.30	958	22,832	4,566	264	0.0044
13	Manhattan	less than 0.15	0.075	1,281	30,530	6,106	88	0.0015
14	Manhattan	less than 0.15	0.075	964	22,975	4,595	66	0.0011
15	Manhattan	less than 0.15	0.075	862	20,544	4,109	59	0.0010
16	Manhattan	0.63	0.63	741	17,660	3,532	429	0.0071
17	Manhattan	0.29	0.29	1,665	39,682	7,936	443	0.0074
18	Manhattan	less than 0.15	0.075	719	17,136	3,427	50	0.0008
19	Manhattan	less than 0.15	0.075	660	15,730	3,146	45	0.0008
20	Manhattan	less than 0.15	0.075	1,075	25,621	5,124	74	0.0012
21	Manhattan	0.22	0.22	836	19,925	3,985	169	0.0028
22	Manhattan	less than 0.15	0.075	866	20,640	4,128	60	0.0010
23	Manhattan	0.25	0.25	1,225	29,196	5,839	281	0.0047
24	Manhattan	0.38	0.38	1,202	28,647	5,729	419	0.0070
25	Manhattan	1.10	1.10	2,481	59,130	11,826	2,506	0.0418
26	Queens	less than 0.15	0.075	759	18,089	3,618	52	0.0009
27	Queens	0.40	0.40	3,628	86,467	17,293	1,333	0.0222
28	Queens	0.40	0.40	1,132	26,979	5,396	416	0.0069
29	Queens	less than 0.15	0.075	523	12,465	2,493	36	0.0006
30	Queens	0.84	0.84	1,075	25,621	5,124	829	0.0138
31	Queens	less than 0.15	0.075	633	15,086	3,017	44	0.0007
32	Queens	less than 0.15	0.075	1,170	27,885	5,577	81	0.0013
33	Queens	0.26	0.26	1,049	25,001	5,000	250	0.0042
34	Queens	less than 0.15	0.075	1,119	26,669	5,334	77	0.0013
35	Queens	0.41	0.41	988	23,547	4,709	372	0.0062
36	Queens	less than 0.15	0.075	925	22,046	4,409	64	0.0011
37	Queens	0.20	0.20	973	23,190	4,638	179	0.0030
38	Queens	1.20	1.20	1,064	25,358	5,072	1,172	0.0195
39	Queens	less than 0.15	0.075	839	19,996	3,999	58	0.0010
40	Queens	less than 0.15	0.075	974	23,214	4,643	67	0.0011
41	Queens	less than 0.15	0.075	835	19,901	3,980	58	0.0010
42	Queens	less than 0.15	0.075	808	19,257	3,851	56	0.0009

Main Plant Emissions

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Plant volume ratio from room volume (cu. ft.)	Estimated volumetric flowrate main plant exhaust (cfm)	PCE emission rate main plant exhaust (mg/min)	PCE emission rate main plant exhaust (g/sec)
43	Queens	less than 0.15	0.075	2,255	53,744	10,749	155	0.0026
44	Queens	0.60	0.60	876	20,878	4,176	483	0.0080
45	Queens	0.41	0.41	1,157	27,575	5,515	436	0.0073
46	Queens	0.19	0.19	810	19,305	3,861	141	0.0024
47	Queens	0.25	0.25	982	23,404	4,681	225	0.0038
48	Queens	less than 0.15	0.075	716	17,065	3,413	49	0.0008
49	Queens	0.58	0.58	839	19,996	3,999	447	0.0074
50	Queens	less than 0.15	0.075	746	17,780	3,556	51	0.0009
51	Queens	less than 0.15	0.075	1,169	27,861	5,572	81	0.0013
52	Queens	1.10	1.10	1,170	27,865	5,577	1,182	0.0197
53	Queens	0.19	0.19	1,061	25,287	5,037	185	0.0031
54	Queens	0.81	0.81	860	20,497	4,099	640	0.0107
55	Queens	0.78	0.78	990	23,595	4,719	709	0.0118
56	Brooklyn	0.50	0.50	799	19,043	3,809	367	0.0061
57	Brooklyn	0.33	0.33	1,040	24,786	4,957	315	0.0053
58	Brooklyn	less than 0.15	0.075	1,065	25,382	5,076	73	0.0012
59	Brooklyn	less than 0.15	0.075	971	23,142	4,628	67	0.0011
60	Brooklyn	0.28	0.28	1,128	26,884	5,377	290	0.0048
61	Brooklyn	0.18	0.18	1,008	24,024	4,805	167	0.0028
62	Brooklyn	0.25	0.25	432	10,296	2,059	99	0.0017
63	Brooklyn	0.43	0.43	1,196	28,504	5,701	472	0.0079
64	Brooklyn	0.29	0.29	787	18,757	3,751	210	0.0035
65	Brooklyn	0.58	0.58	2,318	55,245	11,049	1,234	0.0206
66	Brooklyn	less than 0.15	0.075	1,595	38,014	7,603	110	0.0018
67	Brooklyn	less than 0.15	0.075	815	19,424	3,885	56	0.0009
68	Brooklyn	0.17	0.17	882	21,021	4,204	138	0.0023
69	Brooklyn	less than 0.15	0.075	1,008	24,024	4,805	69	0.0012
70	Brooklyn	0.41	0.41	1,442	34,367	6,873	543	0.0090
71	Brooklyn	less than 0.15	0.075	1,688	40,230	8,046	116	0.0019
72	Brooklyn	less than 0.15	0.075	887	21,140	4,228	61	0.0010
73	Brooklyn	0.26	0.26	791	18,852	3,770	189	0.0031
74	Brooklyn	0.67	0.67	894	21,307	4,261	550	0.0092
75	Brooklyn	less than 0.15	0.075	1,233	29,386	5,877	85	0.0014
76	Brooklyn	less than 0.15	0.075	824	19,639	3,928	57	0.0009
77	Brooklyn	less than 0.15	0.075	866	20,401	4,080	59	0.0010
78	Brooklyn	less than 0.15	0.075	791	18,852	3,770	54	0.0009
79	Brooklyn	less than 0.15	0.075	810	19,305	3,861	56	0.0009
80	Brooklyn	0.67	0.67	963	22,951	4,590	56	0.0009
81	Brooklyn	0.73	0.73	796	18,971	3,794	592	0.0099
82	Brooklyn	less than 0.15	0.075	768	18,304	3,661	53	0.0089
83	Brooklyn	0.79	0.79	783	18,661	3,732	568	0.0095
84	Brooklyn	1.50	1.50	737	17,565	3,513	1,015	0.0169

Main Plant Emissions

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Plant volume ratio from room volume (cu. ft.)	Estimated volumetric flowrate main plant exhaust (cfm)	PCE emission rate main plant exhaust (mg/min)	PCE emission rate main plant exhaust (g/sec)
85	Brooklyn	1.70	1.70	606	14,443	2,889	946	0.0158
86	Brooklyn	less than 0.15	0.075	862	20,544	4,109	59	0.0010
87	Brooklyn	0.90	0.90	732	17,446	3,489	605	0.0101
88	Brooklyn	0.41	0.41	723	17,231	3,446	272	0.0045
89	Brooklyn	1.40	1.40	653	15,563	3,113	839	0.0140
90	Brooklyn	less than 0.15	0.075	1,269	30,244	6,049	87	0.0015
91	Bronx	0.83	0.83	1,170	27,885	5,577	892	0.0149
92	Bronx	0.80	0.80	1,027	24,477	4,895	754	0.0126
93	Bronx	0.27	0.27	1,130	26,931	5,386	280	0.0047
94	Bronx	1.90	1.90	772	18,399	3,680	1,347	0.0224
95	Bronx	less than 0.15	0.075	1,514	36,083	7,217	104	0.0017
96	Bronx	0.52	0.52	757	18,042	3,608	361	0.0060
97	Bronx	less than 0.15	0.075	979	18,042	3,608	67	0.0011
98	Bronx	0.20	0.20	726	17,303	4,667	133	0.0022
99	Bronx	0.32	0.32	1,703	40,588	3,461	500	0.0083
100	Bronx	less than 0.15	0.075	843	20,091	4,118	58	0.0010
101	Bronx	0.15	0.15	589	14,038	4,018	81	0.0014
102	Bronx	less than 0.15	0.075	967	23,047	2,808	67	0.0011
103	Bronx	0.68	0.68	1,029	24,524	4,609	642	0.0107
104	Bronx	less than 0.15	0.075	648	15,444	4,905	45	0.0007
105	Bronx	0.28	0.28	805	19,186	3,089	207	0.0034
106	Bronx	less than 0.15	0.075	881	20,997	3,837	61	0.0010
107	Bronx	less than 0.15	0.075	1,087	25,907	4,199	75	0.0012
108	Bronx	0.72	0.72	821	19,567	5,181	543	0.0090
109	Bronx	0.36	0.36	774	18,447	3,913	256	0.0043
110	Bronx	less than 0.15	0.075	837	19,948	3,689	58	0.0010
111	Bronx	0.51	0.51	748	17,827	3,565	350	0.0058
112	Bronx	0.29	0.29	950	22,642	4,528	253	0.0042
113	Bronx	less than 0.15	0.075	873	20,806	4,161	60	0.0010
114	Bronx	less than 0.15	0.075	948	22,594	4,519	65	0.0011
115	Bronx	0.73	0.73	606	14,443	2,889	417	0.0070
116	Staten Island	0.22	0.22	783	18,661	3,732	158	0.0026
117	Staten Island	less than 0.15	0.075	963	22,951	4,590	66	0.0011
118	Staten Island	0.17	0.17	742	17,684	3,537	116	0.0019
119	Staten Island	0.62	0.62	807	19,233	3,847	459	0.0077
120	Nassau, L.I.	0.69	0.69	1,075	25,621	5,124	681	0.0114
121	Nassau, L.I.	less than 0.15	0.075	1,042	24,834	4,967	72	0.0012
122	Nassau, L.I.	less than 0.15	0.075	1,210	28,838	5,768	83	0.0014
123	Nassau, L.I.	0.70	0.70	970	23,118	4,624	623	0.0104
124	Nassau, L.I.	0.27	0.27	1,858	44,282	8,856	461	0.0077
125	Nassau, L.I.	0.83	0.83	924	22,022	4,404	704	0.0117
126	Nassau, L.I.	0.31	0.31	1,091	26,002	5,200	311	0.0052

Main Plant Emissions

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Plant volume ratio from room volume (cu. ft.)	Estimated volumetric flowrate main plant exhaust (cfm)	PCE emission rate main plant exhaust (mg/min)	PCE emission rate main plant exhaust (g/sec)
127	Nassau, L.I.	1.20	1.20	619	14,753	2,951	682	0.0114
128	Nassau, L.I.	0.45	0.45	975	23,237	4,647	403	0.0067
129	Nassau, L.I.	0.20	0.20	1,266	30,173	6,035	232	0.0039
130	Nassau, L.I.	1.90	1.90	1,113	26,526	5,305	1,942	0.0324
131	Nassau, L.I.	0.51	0.51	969	23,094	4,619	454	0.0076
132	Nassau, L.I.	less than 0.15	0.075	1,056	25,168	5,034	73	0.0012
133	Nassau, L.I.	0.84	0.84	860	20,497	4,099	663	0.0111
134	Nassau, L.I.	less than 0.15	0.075	569	13,561	2,712	39	0.0007
135	Nassau, L.I.	0.16	0.16	1,534	36,560	7,312	225	0.0038
136	Nassau, L.I.	less than 0.15	0.075	1,098	26,169	5,234	76	0.0013
137	Nassau, L.I.	0.99	0.99	1,020	24,310	4,862	927	0.0155
138	Nassau, L.I.	0.20	0.20	932	22,213	4,443	171	0.0029
139	Nassau, L.I.	0.64	0.64	887	21,140	4,228	521	0.0087
140	Nassau, L.I.	0.79	0.79	699	16,559	3,332	507	0.0085
141	Nassau, L.I.	less than 0.15	0.075	765	18,232	3,646	53	0.0009
142	Suffolk, L.I.	less than 0.15	0.075	1,117	26,622	5,324	77	0.0013
143	Suffolk, L.I.	0.37	0.37	791	18,852	3,770	269	0.0045
144	Suffolk, L.I.	less than 0.15	0.075	1,325	31,579	6,316	91	0.0015
145	Suffolk, L.I.	less than 0.15	0.075	1,018	24,262	4,852	70	0.0012
146	Suffolk, L.I.	0.65	0.65	983	23,428	4,686	587	0.0038
147	Suffolk, L.I.	0.09	0.09	812	19,353	3,871	67	0.0011
148	Suffolk, L.I.	1.40	1.40	673	16,040	3,208	865	0.0144
149	Suffolk, L.I.	less than 0.15	0.075	1,067	25,430	5,086	73	0.0012
150	Suffolk, L.I.	less than 0.15	0.075	815	19,424	3,885	56	0.0009
151	Suffolk, L.I.	less than 0.15	0.075	790	18,828	3,766	54	0.0009
152	Suffolk, L.I.	less than 0.15	0.075	808	19,257	3,851	56	0.0009
153	Suffolk, L.I.	less than 0.15	0.075	879	20,949	4,190	61	0.0010
154	Suffolk, L.I.	less than 0.15	0.075	866	20,640	4,128	60	0.0010
155	Suffolk, L.I.	0.42	0.42	1,047	24,953	4,991	404	0.0067
156	Suffolk, L.I.	less than 0.15	0.075	756	18,018	3,604	52	0.0009
157	Suffolk, L.I.	less than 0.15	0.075	739	17,613	3,523	51	0.0008
158	Suffolk, L.I.	less than 0.15	0.075	624	14,872	2,974	43	0.0007
159	Suffolk, L.I.	less than 0.15	0.075	1,436	34,224	6,845	99	0.0016
160	Suffolk, L.I.	1.60	1.60	993	23,666	4,733	1,459	0.0243
161	Suffolk, L.I.	0.16	0.16	889	21,188	4,238	131	0.0022
162	Suffolk, L.I.	less than 0.15	0.075	776	18,495	3,699	53	0.0009
163	Upstate	0.19	0.19	819	19,519	3,904	143	0.0024
164	Upstate	less than 0.15	0.075	1,061	25,287	5,057	73	0.0012
165	Upstate	less than 0.15	0.075	868	16,397	3,279	47	0.0008
166	Upstate	less than 0.15	0.075	1,031	24,572	4,914	71	0.0012
167	Upstate	1.20	1.20	912	21,736	4,347	1,005	0.0167
168	Upstate	less than 0.15	0.075	1,003	23,905	4,781	69	0.0012

Main Plant Emissions

No.	Facility location	Result of badge sampling (ppm)	Adjusted results of badge sampling (ppm)	Volume of vapor barrier (cu. ft.)	Plant volume ratio from room volume (cu. ft.)	Estimated volumetric flowrate main plant exhaust (cfm)	PCE emission rate main plant exhaust (mg/min)	PCE emission rate main plant exhaust (g/sec)
169	Upstate	0.52	0.52	1,164	27,742	5,548	556	0.0093
170	Upstate	less than 0.15	0.075	910	21,688	4,338	63	0.0010
171	Upstate	0.55	0.55	741	17,660	3,532	374	0.0062
172	Upstate	0.16	0.16	1,095	26,097	5,219	161	0.0027
173	Upstate	less than 0.15	0.075	1,641	39,110	7,822	113	0.0019
174	Upstate	0.29	0.29	1,190	28,361	5,672	317	0.0053
175	Upstate	less than 0.15	0.075	520	12,393	2,479	36	0.0006
176	Upstate	less than 0.15	0.075	781	18,614	3,723	54	0.0009
177	Upstate	less than 0.15	0.075	849	20,234	4,047	58	0.0010
178	Upstate	less than 0.15	0.075	1,234	29,410	5,862	85	0.0014
179	Upstate	0.79	0.79	715	17,041	3,408	519	0.0086
180	Upstate	0.10	0.10	948	22,594	4,519	87	0.0015
181	Upstate	0.68	0.68	925	22,046	4,409	578	0.0096
182	Upstate	0.17	0.17	953	22,713	4,543	149	0.0025
183	Upstate	less than 0.15	0.075	1,060	25,263	5,053	73	0.0012
184	Upstate	0.18	0.18	1,270	30,268	6,054	210	0.0035
185	Upstate	0.32	0.32	927	22,093	4,419	272	0.0045
186	Upstate	0.65	0.65	1,107	26,383	5,277	661	0.0110
	AVG		0.34	1,007			312	0.0052

Vapor Barrier Room Emissions

No.	Facility location	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)	PCE emission rate vapor room exhaust (mg/min)	PCE emission rate vapor room exhaust (g/sec)
1	Manhattan	872	946	0	2	364	0.0061
2	Manhattan	1,105	374	0	2	144	0.0024
3	Manhattan	903	430	0	2	166	0.0028
4	Manhattan	1,235	503	0	2	194	0.0032
5	Manhattan	2,247	502	0	2	193	0.0032
6	Manhattan	2,202	490	0	2	189	0.0031
7	Manhattan	1,033	548	0	2	211	0.0035
8	Manhattan	1,101	1,794	0	2	691	0.0115
9	Manhattan	964	779	0	2	300	0.0050
10	Manhattan	1,067	753	0	2	290	0.0048
11	Manhattan	1,023	554	0	2	213	0.0036
12	Manhattan	958	331	0	2	128	0.0021
13	Manhattan	1,281	888	0	2	342	0.0057
14	Manhattan	964	318	0	2	123	0.0020
15	Manhattan	862	853	0	2	329	0.0055
16	Manhattan	741	848	0	2	327	0.0054
17	Manhattan	1,665	1,104	0	2	425	0.0071
18	Manhattan	1,665	694	0	2	267	0.0045
19	Manhattan	719	579	0	2	223	0.0037
20	Manhattan	660	1,463	0	2	564	0.0094
21	Manhattan	1,075	223	0	2	86	0.0014
22	Manhattan	836	893	0	2	344	0.0057
23	Manhattan	868	776	0	2	299	0.0050
24	Manhattan	1,225	298	0	2	115	0.0019
25	Manhattan	1,202	2,836	0	2	1093	0.0182
26	Manhattan	2,481	543	0	2	209	0.0035
27	Queens	759	405	0	2	455	0.0076
28	Queens	3,628	1,181	0	2	156	0.0026
29	Queens	1,132	405	0	2	374	0.0062
30	Queens	523	971	0	2	316	0.0053
31	Queens	1,075	819	0	2	408	0.0067
32	Queens	633	1,036	0	2	321	0.0053
33	Queens	1,170	1,059	0	2	234	0.0039
34	Queens	1,049	832	0	2	205	0.0034
35	Queens	1,119	608	0	2	143	0.0024
36	Queens	988	533	0	2	177	0.0029
37	Queens	925	371	0	2	215	0.0036
38	Queens	973	459	0	2	222	0.0037
39	Queens	1,064	558	0	2	202	0.0034
40	Queens	839	576	0	2	321	0.0053
41	Queens	974	524	0	2	214	0.0036
42	Queens	835	833	0	2		
		808	555	0	2		

Vapor Barrier Room Emissions

No.	Facility location	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)	PCE emission rate vapor room exhaust (mg/min)	PCE emission rate vapor room exhaust (g/sec)
43	Queens	2,255	467	0	2	180	0.0030
44	Queens	876	1,121	0	2	432	0.0072
45	Queens	1,157	400	0	2	154	0.0026
46	Queens	810	722	0	2	278	0.0046
47	Queens	982	554	0	2	213	0.0036
48	Queens	716	661	0	2	255	0.0042
49	Queens	839	946	0	2	364	0.0061
50	Queens	746	812	0	2	313	0.0052
51	Queens	1,169	760	0	2	293	0.0049
52	Queens	1,170	594	0	2	229	0.0038
53	Queens	1,061	1,029	0	2	396	0.0068
54	Queens	860	300	0	2	116	0.0019
55	Queens	990	1,549	0	2	597	0.0099
56	Brooklyn	799	301	0	2	116	0.0019
57	Brooklyn	1,040	626	0	2	241	0.0040
58	Brooklyn	1,065	4,229	0	2	1629	0.0272
59	Brooklyn	971	455	0	2	175	0.0029
60	Brooklyn	1,128	296	0	2	114	0.0019
61	Brooklyn	1,008	443	0	2	171	0.0028
62	Brooklyn	432	139	0	2	54	0.0009
63	Brooklyn	1,196	940	0	2	362	0.0060
64	Brooklyn	787	704	0	2	271	0.0045
65	Brooklyn	2,318	2,087	0	2	804	0.0134
66	Brooklyn	1,595	924	0	2	356	0.0059
67	Brooklyn	815	272	0	2	105	0.0017
68	Brooklyn	882	735	0	2	283	0.0047
69	Brooklyn	1,008	666	0	2	257	0.0043
70	Brooklyn	1,442	581	0	2	224	0.0037
71	Brooklyn	1,688	892	5	7	1203	0.0200
72	Brooklyn	887	983	0	2	379	0.0063
73	Brooklyn	791	501	0	2	193	0.0032
74	Brooklyn	894	581	0	2	224	0.0037
75	Brooklyn	1,233	1,087	5	7	1466	0.0244
76	Brooklyn	824	1,290	0	2	497	0.0083
77	Brooklyn	856	1,142	0	2	440	0.0073
78	Brooklyn	791	332	0	2	128	0.0021
79	Brooklyn	810	588	0	2	227	0.0038
80	Brooklyn	963	315	0	2	121	0.0020
81	Brooklyn	796	361	0	2	139	0.0023
82	Brooklyn	768	583	0	2	225	0.0037
83	Brooklyn	783	528	0	2	203	0.0034
84	Brooklyn	737	609	0	2	235	0.0039

Vapor Barrier Room Emissions

No.	Facility location	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)	PCE emission rate vapor room exhaust (mg/min)	PCE emission rate vapor room exhaust (g/sec)
85	Brooklyn	606	788	0	2	304	0.0051
86	Brooklyn	862	1,413	0	2	544	0.0091
87	Brooklyn	732	1,363	0	2	525	0.0088
88	Brooklyn	723	558	0	2	215	0.0036
89	Brooklyn	653	281	0	2	108	0.0018
90	Brooklyn	1,269	1,230	0	2	474	0.0079
91	Bronx	1,170	522	0	2	201	0.0034
92	Bronx	1,027	392	0	2	151	0.0025
93	Bronx	1,130	320	0	2	123	0.0021
94	Bronx	772	699	0	2	269	0.0045
95	Bronx	1,514	604	0	2	233	0.0039
96	Bronx	757	660	0	2	254	0.0042
97	Bronx	979	781	0	2	301	0.0050
98	Bronx	726	370	0	2	143	0.0024
99	Bronx	1,703	500	0	2	193	0.0032
100	Bronx	843	469	0	2	181	0.0030
101	Bronx	589	747	0	2	288	0.0048
102	Bronx	967	800	0	2	308	0.0051
103	Bronx	1,029	584	0	2	225	0.0037
104	Bronx	648	1,103	0	2	425	0.0071
105	Bronx	805	403	0	2	155	0.0026
106	Bronx	881	301	0	2	116	0.0019
107	Bronx	1,087	2,325	0	2	896	0.0149
108	Bronx	821	172	0	2	66	0.0011
109	Bronx	774	834	0	2	321	0.0054
110	Bronx	837	558	0	2	215	0.0036
111	Bronx	748	694	0	2	267	0.0045
112	Bronx	950	945	0	2	364	0.0061
113	Bronx	873	1,331	0	2	513	0.0085
114	Bronx	948	1,000	0	2	385	0.0064
115	Bronx	606	238	0	2	92	0.0015
116	Staten Island	783	439	0	2	169	0.0028
117	Staten Island	963	744	0	2	287	0.0048
118	Staten Island	742	769	0	2	296	0.0049
119	Staten Island	807	300	0	2	116	0.0019
120	Nassau, L.I.	1,075	362	0	2	139	0.0023
121	Nassau, L.I.	1,042	591	0	2	228	0.0038
122	Nassau, L.I.	1,210	365	0	2	141	0.0023
123	Nassau, L.I.	970	683	0	2	119	0.0020
124	Nassau, L.I.	1,858	683	0	2	263	0.0044
125	Nassau, L.I.	924	447	0	2	172	0.0029
126	Nassau, L.I.	1,091	779	0	2	300	0.0050

Vapor Barrier Room Emissions

No.	Facility location	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)	PCE emission rate vapor room exhaust (mg/min)	PCE emission rate vapor room exhaust (g/sec)
127	Nassau, L.I.	619	302	0	2	116	0.0019
128	Nassau, L.I.	975	275	0	2	106	0.0018
129	Nassau, L.I.	1,266	695	0	2	268	0.0045
130	Nassau, L.I.	1,113	557	0	2	215	0.0036
131	Nassau, L.I.	969	2,121	0	2	817	0.0136
132	Nassau, L.I.	1,056	695	0	2	268	0.0045
133	Nassau, L.I.	860	778	0	2	300	0.0050
134	Nassau, L.I.	569	822	0	2	317	0.0053
135	Nassau, L.I.	1,534	1,479	0	2	570	0.0095
136	Nassau, L.I.	1,098	553	0	2	213	0.0036
137	Nassau, L.I.	1,020	737	0	2	284	0.0047
138	Nassau, L.I.	932	272	0	2	105	0.0017
139	Nassau, L.I.	887	861	0	2	332	0.0055
140	Nassau, L.I.	699	1,054	2	4	812	0.0135
141	Nassau, L.I.	765	383	0	2	148	0.0025
142	Suffolk, L.I.	1,117	851	0	2	328	0.0065
143	Suffolk, L.I.	791	612	0	2	236	0.0039
144	Suffolk, L.I.	1,325	794	0	2	306	0.0051
145	Suffolk, L.I.	1,018	888	0	2	342	0.0057
146	Suffolk, L.I.	983	804	0	2	310	0.0052
147	Suffolk, L.I.	812	164	0	2	63	0.0011
148	Suffolk, L.I.	673	493	0	2	190	0.0032
149	Suffolk, L.I.	1,067	964	0	2	371	0.0062
150	Suffolk, L.I.	815	529	0	2	204	0.0034
151	Suffolk, L.I.	790	305	0	2	118	0.0020
152	Suffolk, L.I.	808	1,240	0	2	478	0.0080
153	Suffolk, L.I.	879	1,132	0	2	436	0.0073
154	Suffolk, L.I.	866	1,161	0	2	447	0.0075
155	Suffolk, L.I.	1,047	357	0	2	138	0.0023
156	Suffolk, L.I.	756	698	0	2	269	0.0045
157	Suffolk, L.I.	739	485	0	2	187	0.0031
158	Suffolk, L.I.	624	940	0	2	362	0.0060
159	Suffolk, L.I.	1,436	483	0	2	387	0.0064
160	Suffolk, L.I.	993	1,004	0	2	155	0.0026
161	Suffolk, L.I.	889	402	0	2	200	0.0033
162	Suffolk, L.I.	776	519	0	2	221	0.0037
163	Upstate	819	574	0	2	161	0.0027
164	Upstate	1,061	417	0	2	237	0.0040
165	Upstate	688	616	0	2	257	0.0043
166	Upstate	1,031	667	0	2	348	0.0058
167	Upstate	912	902	0	2	329	0.0055
168	Upstate	1,003	855	0	2		

Vapor Barrier Room Emissions

No.	Facility location	Volume of vapor barrier (cu. ft.)	Volumetric flowrate vapor barrier exhaust (cfm)	PCE concentration vapor barrier exhaust (ppm)	Adjusted (+2.0) PCE concentration vapor barrier exhaust (ppm)	PCE emission rate vapor room exhaust (mg/min)	PCE emission rate vapor room exhaust (g/sec)
169	Upstate	1,164	405	0	2	156	0.0026
170	Upstate	910	1,059	0	2	408	0.0068
171	Upstate	741	1,047	0	2	403	0.0067
172	Upstate	1,095	679	0	2	262	0.0044
173	Upstate	1,641	1,133	0	2	437	0.0073
174	Upstate	1,190	2,032	0	2	783	0.0130
175	Upstate	520	839	0	2	323	0.0054
176	Upstate	781	489	0	2	188	0.0031
177	Upstate	849	438	0	2	169	0.0028
178	Upstate	1,234	455	0	2	175	0.0029
179	Upstate	715	340	0	2	131	0.0022
180	Upstate	948	950	0	2	366	0.0061
181	Upstate	925	686	0	2	264	0.0044
182	Upstate	953	316	0	2	122	0.0020
183	Upstate	1,060	683	0	2	263	0.0044
184	Upstate	1,270	689	0	2	255	0.0044
185	Upstate	927	1,452	0	2	559	0.0093
186	Upstate	1,107	696	0	2	268	0.0045
	AVG	1,007				299	0.0050

Total Emissions

No.	Facility location	PCE emissions vapor barrier room (g/sec)	PCE emissions main plant (g/sec)	Total emissions from location (g/sec)	Total emissions ≥0.0116	Total emissions ≥0.0177
1	Manhattan	0.0061	0.0010	0.0071	no	no
2	Manhattan	0.0024	0.0088	0.0112	no	no
3	Manhattan	0.0028	0.0025	0.0052	no	no
4	Manhattan	0.0032	0.0014	0.0046	no	no
5	Manhattan	0.0032	0.0026	0.0058	no	no
6	Manhattan	0.0031	0.0179	0.0210	yes	yes
7	Manhattan	0.0035	0.0012	0.0047	no	no
8	Manhattan	0.0115	0.0037	0.0152	yes	no
9	Manhattan	0.0050	0.0148	0.0198	yes	yes
10	Manhattan	0.0048	0.0012	0.0061	no	no
11	Manhattan	0.0036	0.0012	0.0047	no	no
12	Manhattan	0.0021	0.0044	0.0065	no	no
13	Manhattan	0.0057	0.0015	0.0072	no	no
14	Manhattan	0.0020	0.0011	0.0031	no	no
15	Manhattan	0.0055	0.0010	0.0065	no	no
16	Manhattan	0.0054	0.0071	0.0126	yes	no
17	Manhattan	0.0071	0.0074	0.0145	yes	no
18	Manhattan	0.0045	0.0008	0.0053	no	no
19	Manhattan	0.0037	0.0008	0.0045	no	no
20	Manhattan	0.0094	0.0012	0.0106	no	no
21	Manhattan	0.0014	0.0028	0.0042	no	no
22	Manhattan	0.0057	0.0010	0.0067	no	no
23	Manhattan	0.0050	0.0047	0.0097	no	no
24	Manhattan	0.0019	0.0070	0.0089	no	no
25	Manhattan	0.0182	0.0418	0.0600	yes	yes
26	Queens	0.0035	0.0009	0.0044	no	no
27	Queens	0.0076	0.0222	0.0298	yes	yes
28	Queens	0.0026	0.0069	0.0095	no	no
29	Queens	0.0062	0.0006	0.0068	no	no
30	Queens	0.0053	0.0138	0.0191	yes	yes
31	Queens	0.0067	0.0007	0.0074	no	no
32	Queens	0.0068	0.0013	0.0081	no	no
33	Queens	0.0053	0.0042	0.0095	no	no
34	Queens	0.0039	0.0013	0.0052	no	no
35	Queens	0.0034	0.0062	0.0096	no	no
36	Queens	0.0024	0.0011	0.0034	no	no
37	Queens	0.0029	0.0030	0.0059	no	no
38	Queens	0.0036	0.0195	0.0231	yes	yes
39	Queens	0.0037	0.0010	0.0047	no	no
40	Queens	0.0034	0.0011	0.0045	no	no
41	Queens	0.0053	0.0010	0.0063	no	no
42	Queens	0.0036	0.0009	0.0045	no	no
43	Queens	0.0030	0.0026	0.0056	no	no
44	Queens	0.0072	0.0080	0.0152	yes	no
45	Queens	0.0026	0.0073	0.0098	no	no
46	Queens	0.0046	0.0024	0.0070	no	no
47	Queens	0.0036	0.0038	0.0073	no	no
48	Queens	0.0042	0.0008	0.0051	no	no
49	Queens	0.0061	0.0074	0.0135	yes	no
50	Queens	0.0052	0.0009	0.0061	no	no
51	Queens	0.0049	0.0013	0.0062	no	no

Total Emissions

No.	Facility location	PCE emissions vapor barrier room (g/sec)	PCE emissions main plant (g/sec)	Total emissions from location (g/sec)	Total emissions ≥0.0116	Total emissions ≥0.0177
52	Queens	0.0038	0.0197	0.0235	yes	yes
53	Queens	0.0066	0.0031	0.0097	no	no
54	Queens	0.0019	0.0107	0.0126	yes	no
55	Queens	0.0099	0.0118	0.0218	yes	yes
56	Brooklyn	0.0019	0.0061	0.0080	no	no
57	Brooklyn	0.0040	0.0053	0.0093	no	no
58	Brooklyn	0.0272	0.0012	0.0284	yes	yes
59	Brooklyn	0.0029	0.0011	0.0040	no	no
60	Brooklyn	0.0019	0.0048	0.0067	no	no
61	Brooklyn	0.0028	0.0028	0.0056	no	no
62	Brooklyn	0.0009	0.0017	0.0025	no	no
63	Brooklyn	0.0060	0.0079	0.0139	yes	no
64	Brooklyn	0.0045	0.0035	0.0080	no	no
65	Brooklyn	0.0134	0.0206	0.0340	yes	yes
66	Brooklyn	0.0059	0.0018	0.0078	no	no
67	Brooklyn	0.0017	0.0009	0.0027	no	no
68	Brooklyn	0.0047	0.0023	0.0070	no	no
69	Brooklyn	0.0043	0.0012	0.0054	no	no
70	Brooklyn	0.0037	0.0090	0.0128	yes	no
71	Brooklyn	0.0200	0.0019	0.0220	yes	yes
72	Brooklyn	0.0063	0.0010	0.0073	no	no
73	Brooklyn	0.0032	0.0031	0.0064	no	no
74	Brooklyn	0.0037	0.0092	0.0129	yes	no
75	Brooklyn	0.0244	0.0014	0.0258	yes	yes
76	Brooklyn	0.0083	0.0009	0.0092	no	no
77	Brooklyn	0.0073	0.0010	0.0083	no	no
78	Brooklyn	0.0021	0.0009	0.0030	no	no
79	Brooklyn	0.0038	0.0009	0.0047	no	no
80	Brooklyn	0.0020	0.0099	0.0119	yes	no
81	Brooklyn	0.0023	0.0089	0.0112	no	no
82	Brooklyn	0.0037	0.0009	0.0046	no	no
83	Brooklyn	0.0034	0.0095	0.0129	yes	no
84	Brooklyn	0.0039	0.0169	0.0208	yes	yes
85	Brooklyn	0.0051	0.0158	0.0208	yes	yes
86	Brooklyn	0.0091	0.0010	0.0101	no	no
87	Brooklyn	0.0088	0.0101	0.0188	yes	yes
88	Brooklyn	0.0036	0.0045	0.0081	no	no
89	Brooklyn	0.0018	0.0140	0.0158	yes	no
90	Brooklyn	0.0079	0.0015	0.0094	no	no
91	Bronx	0.0034	0.0149	0.0182	yes	yes
92	Bronx	0.0025	0.0126	0.0151	yes	no
93	Bronx	0.0021	0.0047	0.0067	no	no
94	Bronx	0.0045	0.0224	0.0269	yes	yes
95	Bronx	0.0039	0.0017	0.0056	no	no
96	Bronx	0.0042	0.0060	0.0103	no	no
97	Bronx	0.0050	0.0011	0.0061	no	no
98	Bronx	0.0024	0.0022	0.0046	no	no
99	Bronx	0.0032	0.0083	0.0116	no	no
100	Bronx	0.0030	0.0010	0.0040	no	no
101	Bronx	0.0048	0.0014	0.0061	no	no
102	Bronx	0.0051	0.0011	0.0062	no	no

Total Emissions

No.	Facility location	PCE emissions vapor barrier room (g/sec)	PCE emissions main plant (g/sec)	Total emissions from location (g/sec)	Total emissions ≥0.0116	Total emissions ≥0.0177
103	Bronx	0.0037	0.0107	0.0145	yes	no
104	Bronx	0.0071	0.0007	0.0078	no	no
105	Bronx	0.0026	0.0034	0.0060	no	no
106	Bronx	0.0019	0.0010	0.0029	no	no
107	Bronx	0.0149	0.0012	0.0162	yes	no
108	Bronx	0.0011	0.0090	0.0102	no	no
109	Bronx	0.0054	0.0043	0.0096	no	no
110	Bronx	0.0036	0.0010	0.0045	no	no
111	Bronx	0.0045	0.0058	0.0103	no	no
112	Bronx	0.0061	0.0042	0.0103	no	no
113	Bronx	0.0085	0.0010	0.0095	no	no
114	Bronx	0.0064	0.0011	0.0075	no	no
115	Bronx	0.0015	0.0070	0.0085	no	no
116	Staten Island	0.0028	0.0026	0.0055	no	no
117	Staten Island	0.0048	0.0011	0.0059	no	no
118	Staten Island	0.0049	0.0019	0.0069	no	no
119	Staten Island	0.0019	0.0077	0.0096	no	no
120	Nassau, L.I.	0.0023	0.0114	0.0137	yes	no
121	Nassau, L.I.	0.0038	0.0012	0.0050	no	no
122	Nassau, L.I.	0.0023	0.0014	0.0037	no	no
123	Nassau, L.I.	0.0020	0.0104	0.0124	yes	no
124	Nassau, L.I.	0.0044	0.0077	0.0121	yes	no
125	Nassau, L.I.	0.0029	0.0117	0.0146	yes	no
126	Nassau, L.I.	0.0050	0.0052	0.0102	no	no
127	Nassau, L.I.	0.0019	0.0114	0.0133	yes	no
128	Nassau, L.I.	0.0018	0.0067	0.0085	no	no
129	Nassau, L.I.	0.0045	0.0039	0.0083	no	no
130	Nassau, L.I.	0.0036	0.0324	0.0359	yes	yes
131	Nassau, L.I.	0.0136	0.0076	0.0212	yes	yes
132	Nassau, L.I.	0.0045	0.0012	0.0057	no	no
133	Nassau, L.I.	0.0050	0.0111	0.0161	yes	no
134	Nassau, L.I.	0.0053	0.0007	0.0059	no	no
135	Nassau, L.I.	0.0095	0.0038	0.0133	yes	no
136	Nassau, L.I.	0.0036	0.0013	0.0048	no	no
137	Nassau, L.I.	0.0047	0.0155	0.0202	yes	yes
138	Nassau, L.I.	0.0017	0.0029	0.0046	no	no
139	Nassau, L.I.	0.0055	0.0087	0.0142	yes	no
140	Nassau, L.I.	0.0135	0.0085	0.0220	yes	yes
141	Nassau, L.I.	0.0025	0.0009	0.0033	no	no
142	Suffolk, L.I.	0.0055	0.0013	0.0067	no	no
143	Suffolk, L.I.	0.0039	0.0045	0.0084	no	no
144	Suffolk, L.I.	0.0051	0.0015	0.0066	no	no
145	Suffolk, L.I.	0.0057	0.0012	0.0069	no	no
146	Suffolk, L.I.	0.0052	0.0098	0.0149	yes	no
147	Suffolk, L.I.	0.0011	0.0011	0.0022	no	no
148	Suffolk, L.I.	0.0032	0.0144	0.0176	yes	no
149	Suffolk, L.I.	0.0062	0.0012	0.0074	no	no
150	Suffolk, L.I.	0.0034	0.0009	0.0043	no	no
151	Suffolk, L.I.	0.0020	0.0009	0.0029	no	no
152	Suffolk, L.I.	0.0080	0.0009	0.0089	no	no
153	Suffolk, L.I.	0.0073	0.0010	0.0083	no	no

Total Emissions

No.	Facility location	PCE emissions vapor barrier room (g/sec)	PCE emissions main plant (g/sec)	Total emissions from location (g/sec)	Total emissions ≥0.0116	Total emissions ≥0.0177
154	Suffolk, L.I.	0.0075	0.0010	0.0084	no	no
155	Suffolk, L.I.	0.0023	0.0067	0.0090	no	no
156	Suffolk, L.I.	0.0045	0.0009	0.0053	no	no
157	Suffolk, L.I.	0.0031	0.0008	0.0040	no	no
158	Suffolk, L.I.	0.0060	0.0007	0.0068	no	no
159	Suffolk, L.I.	0.0031	0.0016	0.0047	no	no
160	Suffolk, L.I.	0.0064	0.0243	0.0308	yes	yes
161	Suffolk, L.I.	0.0026	0.0022	0.0048	no	no
162	Suffolk, L.I.	0.0033	0.0009	0.0042	no	no
163	Upstate	0.0037	0.0024	0.0061	no	no
164	Upstate	0.0027	0.0012	0.0039	no	no
165	Upstate	0.0040	0.0008	0.0047	no	no
166	Upstate	0.0043	0.0012	0.0055	no	no
167	Upstate	0.0058	0.0167	0.0225	yes	yes
168	Upstate	0.0055	0.0012	0.0066	no	no
169	Upstate	0.0026	0.0093	0.0119	yes	no
170	Upstate	0.0068	0.0010	0.0078	no	no
171	Upstate	0.0067	0.0062	0.0130	yes	no
172	Upstate	0.0044	0.0027	0.0070	no	no
173	Upstate	0.0073	0.0019	0.0092	no	no
174	Upstate	0.0130	0.0053	0.0183	yes	yes
175	Upstate	0.0054	0.0006	0.0060	no	no
176	Upstate	0.0031	0.0009	0.0040	no	no
177	Upstate	0.0028	0.0010	0.0038	no	no
178	Upstate	0.0029	0.0014	0.0043	no	no
179	Upstate	0.0022	0.0086	0.0108	no	no
180	Upstate	0.0061	0.0015	0.0076	no	no
181	Upstate	0.0044	0.0096	0.0140	yes	no
182	Upstate	0.0020	0.0025	0.0045	no	no
183	Upstate	0.0044	0.0012	0.0056	no	no
184	Upstate	0.0044	0.0035	0.0079	no	no
185	Upstate	0.0093	0.0045	0.0139	yes	no
186	Upstate	0.0045	0.0110	0.0155	yes	no
	AVG	0.0050	0.0052	0.0102		