

Southeastern Pennsylvania Transportation Authority
1234 Market Street • Philadelphia, PA 19107-3780

April 12, 2017

2017 APR 17 AM 11:03

Mr. Edward Wiener
City of Philadelphia
Air Management Services
321 University Avenue
Philadelphia, PA 19104-4543

Subject: SEPTA – Robert's Complex (Plant ID 01573) Renewal Application for Synthetic Minor Operating Permit S12-019

Dear Mr. Wiener,

Southeastern Pennsylvania Transportation Authority (SEPTA) hereby submits to Philadelphia Air Management Services (PAMS) for consideration a Synthetic Minor Operating Permit (SMOP) renewal application for SEPTA's Robert's Complex (the "Facility"). The Facility has been operating under SMOP Number S12-019, which was issued on November 19, 2013 and expires on November 19, 2017. SEPTA requests the incorporation of installation permit numbers 13302 and 13303 for two (2) dual-fired boilers into the SMOP. Additionally, SEPTA requests the removal of the welder engine (WE-01) from the permit. This unit was removed from the Facility and replaced with an electric welder. The Facility is not requesting any other changes in permitted equipment at this time.

As demonstrated in Attachment C, Emissions Estimates, the Facility has the potential to exceed the Title V permitting threshold for NOx when all emission sources operate at maximum capacity. The Facility limits NOx, VOC, and total HAP emissions to less than 25 tpy, as well as individual HAP emissions to less than 10 tpy, in order to be classified as a synthetic minor facility. Rolling 12-month emission calculations will be performed to ensure these thresholds are not exceeded.

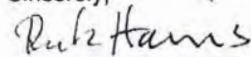
Through this application, SEPTA requests that the 40 CFR 63 Subpart JJJJJJ gas-fired boiler exemption requirement be removed from the permit (Condition D.2.(a)(4) of Permit S12-019). As required, SEPTA will demonstrate compliance within 180 days of the effective date of the fuel switch. Upon commencement of operation outside of the definition of gas-fired boiler, SEPTA will comply with the tune-up and recordkeeping requirements of Subpart JJJJJJ. A notification of the fuel switch will be submitted according to 40 CFR 63.11225(g) requirements within 30 days of the switch. There will be no change to potential emissions from the change in allowable fuels; emission estimates provided in Attachment C include the worst-case emissions from either natural gas-firing or No. 2 fuel oil-firing. Attachment D provides a mark-up of the current permit with requested conditions related to Subpart JJJJJJ.

Enclosed are the following items that constitute this permit renewal application:

- Synthetic Minor Operating Permit Renewal Application;
- Compliance Review Form (Attachment A);
- Process Flow Diagrams and Insignificant Source List (Attachment B);
- Emissions Estimates (Attachment C);
- Permit Mark-up (Attachment D); and
- Synthetic Minor Permit Renewal Application Fee.

Please contact the undersigned at (215) 580-8144 or RHarris@septa.org if you have any questions pertaining to this permit application. Thank you for your expeditious review of the renewal application.

Sincerely,

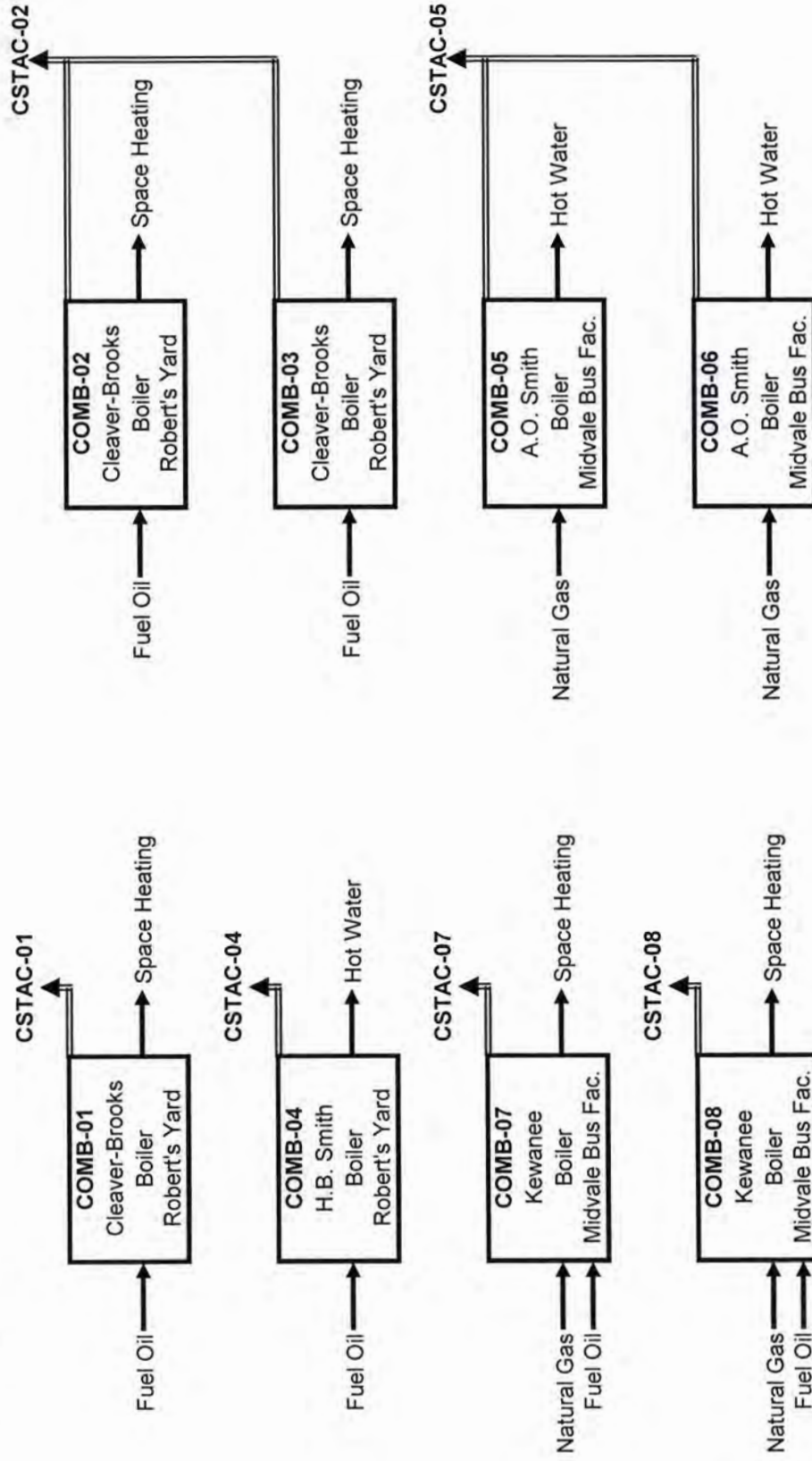


Richard M. Harris, PG
Environmental Officer

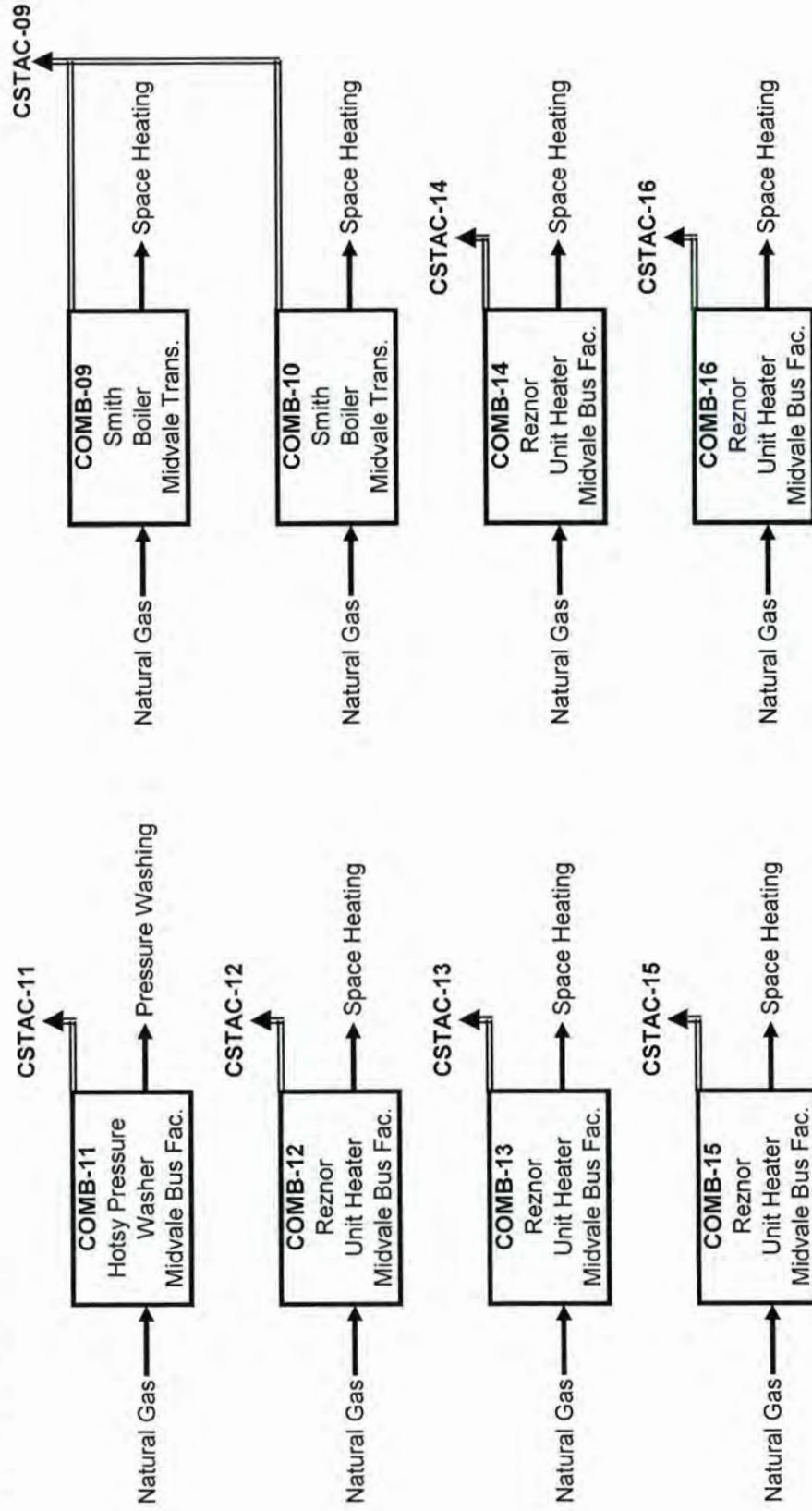
041217605

Attachment B
Process Flow Diagrams

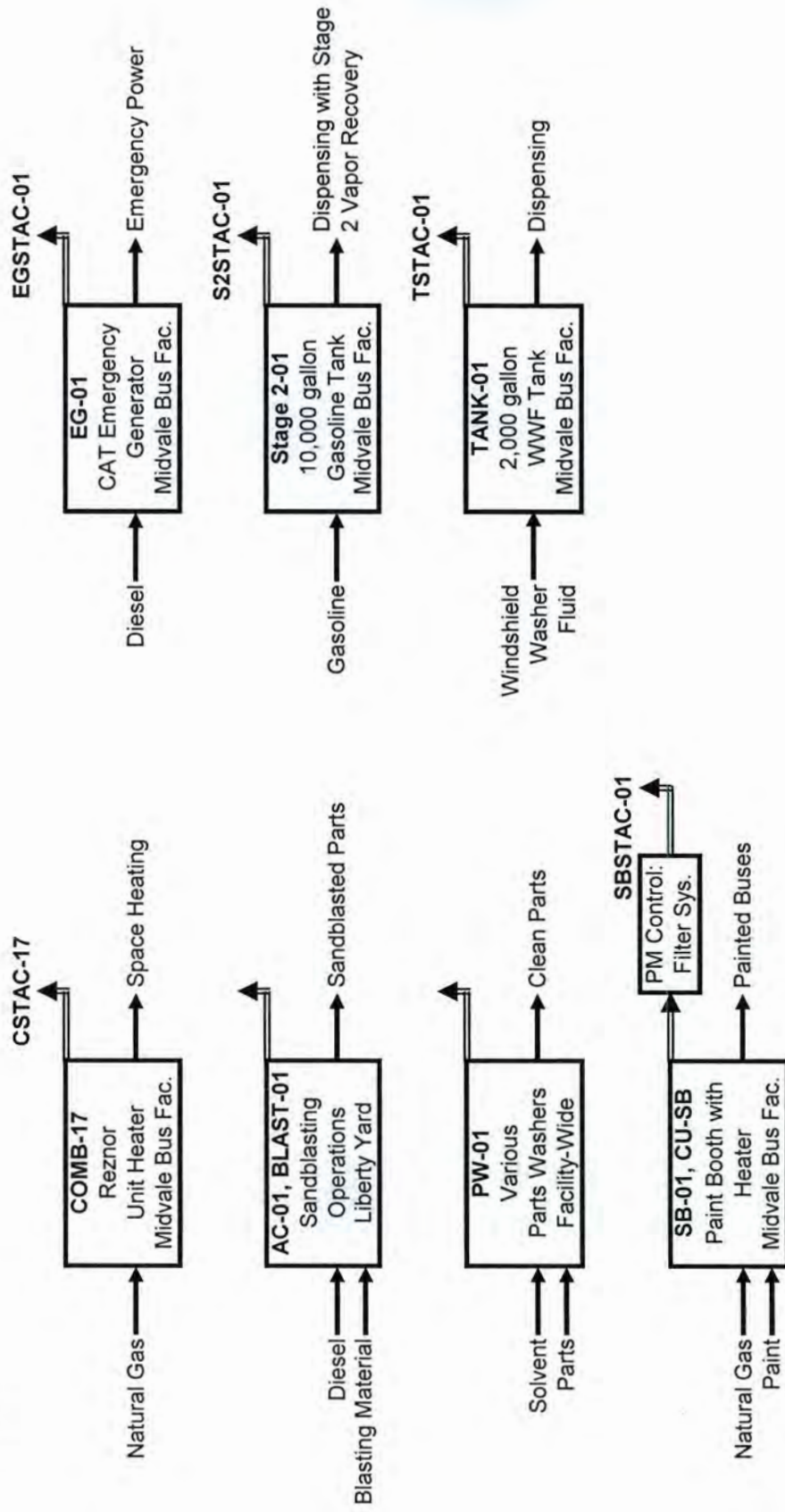
SEPTA Robert's Complex
Process Flow Diagrams



SEPTA Robert's Complex Process Flow Diagrams



SEPTA Robert's Complex Process Flow Diagrams



SEPTA Robert's Complex
Insignificant Source List

Number of Units	Size	Description
2	5,000 gallon	Motor Oil Storage Tanks
2	5,000 gallon	Automatic Transmission Fluid Storage Tanks
1	5,000 gallon	Ethylene Glycol Storage Tank
2	5,000 gallon	Antifreeze Storage Tanks
1	1,000 gallon	Waste Antifreeze Storage Tank
1	25,000 gallon	Heating Oil Storage Tank
4	25,000 gallon	Diesel Fuel Storage Tanks
1	6,000 gallon	Waste Oil Storage Tank
1	600 gallon	Waste Oil Storage Tank
1	10,000 gallon	Oil / Water Separation Tank No. 1
1	2,500 gallon	Oil / Water Separation Tank No. 2
1	6,000 gallon	Diesel Fuel Storage Tank
1	8,000 gallon	Heating Oil Storage Tank
1	15,000 gallon	Heating Oil Storage Tank
1	2,000 gallon	Heating Oil Storage Tank
2	500 gallon	Heating Oil Storage Tanks
1	0.103 MMBtu/hr	Hydrotherm Boiler - #2 Fuel Oil
1	0.105 MMBtu/hr	Bradford White Boiler - #2 Fuel Oil
1	0.120 MMBtu/hr	A.O. Smith Boiler - Natural Gas
8	0.118 MMBtu/hr	Reznor Space Heaters - #2 Fuel Oil
1	39 kW	Kohler Emergency Generator - LPG
1	48 HP	Caterpillar Emergency Generator - Natural Gas
1	n/a	Bus Maintenance Control Device (Cyclone followed by baghouse - vented indoors)

Attachment C

Emissions Estimates

5/30/2023 note- Revised emission estimate was submitted to AMS on January 4, 2022 and included at the end of this document (page 61)

**SEPTA Roberts Complex
Potential Emissions**

	Potential Emissions (ton/year)							Total HAPs
	NOx	VOC	TSP	PM10	CO	SOx	Pb	
COMB-01 - Cleaver-Brooks CB500-100 Boiler	2.68	0.05	0.27	0.32	0.67	0.03	1.69E-04	0.01
COMB-02 - Cleaver-Brooks CB500-200 Boiler	5.35	0.09	0.54	0.64	1.34	0.06	3.37E-04	0.02
COMB-03 - Cleaver-Brooks CB500-200 Boiler	5.35	0.09	0.54	0.64	1.34	0.06	3.37E-04	0.02
COMB-04 - H.B. Smith Boiler	0.33	0.01	0.03	0.04	0.08	0.00	2.10E-05	9.68E-04
COMB-05 - A.O. Smith BTP150-720 Boiler	0.31	0.02	0.02	0.02	0.26	0.00	1.55E-06	0.01
COMB-06 - A.O. Smith BTP140-720 Boiler	0.31	0.02	0.02	0.02	0.26	0.00	1.55E-06	0.01
COMB-07 - Kewanee Boiler #1	5.75	0.21	0.58	0.68	3.25	0.06	3.63E-04	0.07
COMB-08 - Kewanee Boiler #2	5.75	0.21	0.58	0.68	3.25	0.06	3.63E-04	0.07
COMB-09 - Smith 19 Series-4 Boiler	0.15	0.01	0.01	0.01	0.13	9.25E-04	7.71E-07	2.91E-03
COMB-10 - Smith 19 Series-4 Boiler	0.15	0.01	0.01	0.01	0.13	9.25E-04	7.71E-07	2.91E-03
COMB-11 - Hotsy S5735-3 Pressure Washer	0.28	0.02	0.02	0.02	0.24	1.69E-03	1.41E-06	5.33E-03
COMB-12 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
COMB-13 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
COMB-14 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
COMB-15 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
COMB-16 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
COMB-17 - Reznor Unit Heater	0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07	3.24E-03
EG-01 - CAT Emergency Generator	2.24	0.18	0.16	0.16	0.48	0.00	-	1.97E-03
AC-01 & BLAST-01 - Sandblasting	0.42	0.03	0.90	0.90	0.09	0.03	-	3.66E-04
Stage 2-01 - Gasoline Tank	-	0.03	-	-	-	-	-	-
PW-01 - Facility Parts Washers	-	0.65	-	-	-	-	-	-
SB-01 - Paint Booth	-	1.06	7.66E-04	7.66E-04	-	-	-	0.02
CU-SB - Paint Booth Heater	0.26	0.01	0.02	0.02	0.22	1.56E-03	1.30E-06	4.92E-03
TANK-01 - Windshield Washer Fluid Tank	-	0.01	-	-	-	-	-	-
Total (tons per year)	30.38	2.76	3.77	4.25	12.59	0.31	1.60E-03	0.26

5/30/2023 note- Revised emission estimate was submitted to AMS on January 4, 2022 and included at the end of this document (page 61)

**SEPTA Roberts Complex
Potential Emissions**

COMB-01 - Cleaver-Brooks CB500-100 Boiler

Maximum Heat Input: 4.18 MMBtu/hr
 HHV #2 Fuel Oil (AP-42): 0.137 MMBtu/gal
 Operating hours: 8,760 hours/yr
 Maximum #2 Fuel Oil Use: 267.53 Mgal/yr

Emission factors for Boilers Burning No.2 Fuel Oil (AP-42 Chapter 1.3 (5/10))						
Emission factors (lb/Mgal)						
NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
20	0.34	2	2.38	5	0.21	1.26E-03
						Total HAPs
						5.80E-02

1) 15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.61	0.01	0.06	0.07	0.15	0.01	3.85E-05
						Total HAPs
						1.77E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
2.68	0.05	0.27	0.32	0.67	0.03	1.69E-04
						Total HAPs
						7.76E-03

SEPTA Roberts Complex
Potential Emissions

COMB-02 - Cleaver-Brooks CB500-200 Boiler

Maximum Heat Input: 8.37 MMBtu/hr
 HHV #2 Fuel Oil (AP-42): 0.137 MMBtu/gal
 Operating hours: 8,760 hours/yr
 Maximum #2 Fuel Oil Use: 535.13 Mgal/yr

Emission factors for Boilers Burning No.2 Fuel Oil (AP-42 Chapter 1.3 (5/10))						
Emission factors (lb/Mgal)						
NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
20	0.34	2	2.38	5	0.21	1.26E-03
Total HAPs						5.80E-02

1) 15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
1.22	0.02	0.12	0.15	0.31	0.01	7.70E-05
Total HAPs						3.54E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
5.35	0.09	0.54	0.64	1.34	0.06	3.37E-04
Total HAPs						0.02

SEPTA Roberts Complex
Potential Emissions

COMB-03 - Cleaver-Brooks CB500-200 Boiler

Maximum Heat Input: 8.37 MMBtu/hr
HHV #2 Fuel Oil (AP-42): 0.137 MMBtu/gal
Operating hours: 8,760 hours/yr
Maximum #2 Fuel Oil Use: 535.13 Mgal/yr

Emission factors for Boilers Burning No.2 Fuel Oil (AP-42 Chapter 1.3 (5/10))						
Emission factors (lb/Mgal)						
NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
20	0.34	2	2.38	5	0.21	1.26E-03
						Total HAPs
						5.80E-02

1) 15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
1.22	0.02	0.12	0.15	0.31	0.01	7.70E-05
						Total HAPs
						3.54E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
5.35	0.09	0.54	0.64	1.34	0.06	3.37E-04
						Total HAPs
						0.02

SEPTA Roberts Complex
Potential Emissions

COMB-04 - H.B. Smith Boiler

Maximum Heat Input: 0.52 MMBtu/hr
HHV #2 Fuel Oil (AP-42): 0.137 MMBtu/gal
Operating hours: 8,760 hours/yr
Maximum #2 Fuel Oil Use: 33.38 Mgal/yr

Emission factors for Boilers Burning No.2 Fuel Oil (AP-42 Chapter 1.3 (5/10))						
Emission factors (lb/Mgal)						
NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
20	0.34	2	2.38	5	0.21	1.26E-03
						Total HAPs
						5.80E-02

1) 15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.08	1.30E-03	0.01	0.01	0.02	0.00	4.80E-06
						Total HAPs
						2.21E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.33	0.01	0.03	0.04	0.08	0.00	2.10E-05
						Total HAPs
						9.68E-04

SEPTA Roberts Complex
Potential Emissions

COMB-05 - A.O. Smith BTP150-720 Boiler

Maximum Heat Input: 0.72 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 6.18 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.07	3.88E-03	0.01	0.01	0.06	4.24E-04	3.53E-07
						Total HAPs
						1.33E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.31	0.02	0.02	0.02	0.26	1.86E-03	1.55E-06
						Total HAPs
						5.84E-03

SEPTA Roberts Complex
Potential Emissions

COMB-06 - A.O. Smith BTP140-720 Boiler

Maximum Heat Input: 0.72 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 6.18 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.07	3.88E-03	0.01	0.01	0.06	4.24E-04	3.53E-07
						Total HAPs
						1.33E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.31	0.02	0.02	0.02	0.26	1.86E-03	1.55E-06
						Total HAPs
						5.84E-03

COMB-07 - Kewanee Boiler #1 - K-350-G04-FGR

Scenario #1:
Maximum Natural Gas Use:
8,760 hr/yr on Natural Gas
77.29 MMft³/yr

Scenario #2:	8,760 hr/yr on Fuel Oil
Maximum #2 Fuel Oil Use:	575.47 Mgal/yr

		Emission factors							
		NOx	VOC	TSP	PM10	CO	SOx ¹	Pb	Total HAPs
Emission factors for Boilers Burning Natural Gas [AP-42 Chapter 1.4 (7/98)]	(lb/MMBtu ³)	100	5.5	7.6	7.6	84	0.6	5.00E-04	1.89
Emission factors for Boilers Burning #2 Fuel Oil [AP-42 Chapter 1.3 (5/10)]	(lb/Mgal)	20	0.34	2	2.38	5	0.21	1.26E-03	5.80E-02

1) 15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)								
	NOx	VOC	TSP	PM10	CO	SOx	Pb	Total HAPs
Natural Gas Use	0.88	0.05	0.07	0.07	0.74	5.29E-03	4.41E-06	1.67E-02
#2 Fuel Oil Use	1.31	0.02	0.13	0.16	0.33	0.01	8.28E-05	3.81E-03

Potential Emissions (ton/year)								
	NOx	VOC	TSP	PM10	CO	SOx	Pb	Total HAPs
Scenario #1 Emissions	3.86	0.21	0.29	0.29	3.25	0.02	1.93E-05	0.07
Scenario #2 Emissions	5.75	0.10	0.58	0.68	1.44	0.06	3.63E-04	0.02
Maximum Potential Emissions	5.75	0.21	0.58	0.68	3.25	0.06	3.63E-04	0.07

SEPTA Roberts Complex
Potential Emissions

COMB-08 - Kewanee Boiler #2 - K-350-G04-FGR

Maximum Heat Input: 9.00 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
HHV #2 Fuel Oil (AP-42): 0.137 MMBtu/gal

Scenario #1:
Maximum Natural Gas Use: 8,760 hr/yr on Natural Gas
77.29 MMft³/yr

Scenario #2:
Maximum #2 Fuel Oil Use: 8,760 hr/yr on Fuel Oil
575.47 Mgal/yr

Emission factors for Boilers Burning Natural Gas [AP-42 Chapter 1.4 (7/98)]	Emission factors						
	NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
(lb/MMft ³)	100	5.5	7.6	7.6	84	0.6	5.00E-04
Total HAPs							
1.89							
Emission factors for Boilers Burning #2 Fuel Oil [AP-42 Chapter 1.3 (5/10)]	NOx	VOC	TSP	PM10	CO	SOx ¹	Pb
	20	0.34	2	2.38	5	0.21	1.26E-03
5.80E-02							

1)15 ppm Sulfur in fuel oil assumed

Potential Emissions (lb/hr)	Potential Emissions (lb/hr)						
	NOx	VOC	TSP	PM10	CO	SOx	Pb
Natural Gas Use	0.88	0.05	0.07	0.07	0.74	5.29E-03	4.41E-06
Total HAPs							
1.67E-02							
#2 Fuel Oil Use	1.31	0.02	0.13	0.16	0.33	0.01	8.28E-05
3.81E-03							

Potential Emissions (ton/year)	Potential Emissions (ton/year)						
	NOx	VOC	TSP	PM10	CO	SOx	Pb
Scenario #1 Emissions	3.86	0.21	0.29	0.29	3.25	0.02	1.93E-05
Total HAPs							
0.07							
Scenario #2 Emissions	5.75	0.10	0.58	0.68	1.44	0.06	3.63E-04
0.02							
Maximum Potential Emissions	5.75	0.21	0.58	0.68	3.25	0.06	3.63E-04
0.07							

SEPTA Roberts Complex
Potential Emissions

COMB-09 - Smith 19 Series-4 Boiler

Maximum Heat Input: 0.36 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
Operating hours: 8,760 hours/yr
Maximum Natural Gas Use: 3.08 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	1.94E-03	2.67E-03	2.67E-03	0.03	2.11E-04	1.76E-07
						Total HAPs
						6.65E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.15	0.01	0.01	0.01	0.13	9.25E-04	7.71E-07
						Total HAPs
						2.91E-03

SEPTA Roberts Complex
Potential Emissions

COMB-10 - Smith 19 Series-4 Boiler

Maximum Heat Input: 0.36 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 3.08 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	1.94E-03	2.67E-03	2.67E-03	0.03	2.11E-04	1.76E-07
						Total HAPs
						6.65E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.15	0.01	0.01	0.01	0.13	9.25E-04	7.71E-07
						Total HAPs
						2.91E-03

SEPTA Roberts Complex
Potential Emissions

COMB-11 - Hotsy 5732 Pressure Washer

Maximum Heat Input: 0.66 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 5.64 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.06	3.54E-03	4.90E-03	4.90E-03	0.05	3.86E-04	3.22E-07
						Total HAPs
						1.22E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.28	0.02	0.02	0.02	0.24	1.69E-03	1.41E-06
						Total HAPs
						5.33E-03

SEPTA Roberts Complex
Potential Emissions

COMB-12 - Reznor B400-S-E Unit Heater - Door #1

Maximum Heat Input: 0.40 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
Operating hours: 8,760 hours/yr
Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

SEPTA Roberts Complex
Potential Emissions

COMB-13 - Reznor B400-S-E Unit Heater - Door #2

Maximum Heat Input: 0.40 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
Operating hours: 8,760 hours/yr
Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

SEPTA Roberts Complex
Potential Emissions

COMB-14 - Reznor B400-S-E Unit Heater - Door #3

Maximum Heat Input: 0.40 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
Operating hours: 8,760 hours/yr
Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

SEPTA Roberts Complex
Potential Emissions

COMB-15 - Reznor B400-S-E Unit Heater - Door #4

Maximum Heat Input: 0.40 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

SEPTA Roberts Complex
Potential Emissions

COMB-16 - Reznor B400-S-E Unit Heater - Door #7

Maximum Heat Input: 0.40 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
 Operating hours: 8,760 hours/yr
 Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

SEPTA Roberts Complex
Potential Emissions

COMB-17 - Reznor B400-S-E Unit Heater - Door #8

Maximum Heat Input: 0.40 MMBtu/hr
HHV Natural Gas (AP-42): 1,020 MMBtu/MMft³
Operating hours: 8,760 hours/yr
Maximum Natural Gas Use: 3.44 MMft³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMft ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.04	2.16E-03	2.98E-03	2.98E-03	0.03	2.35E-04	1.96E-07
						Total HAPs
						7.41E-04

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	0.01	0.01	0.01	0.14	1.03E-03	8.59E-07
						Total HAPs
						3.24E-03

EG-01 - CAT 3512 Emergency Generator

Diesel Emergency Generator

74.10 gal/hr

0.137 MMBtu/gal

10.15 MMBtu/hr

100 hours/yr

7.41 Mgal/yr

(3): Organics form AP-42 Table 3.3-2 (10/96) and metals from AP-42 Table 1.3-10

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
2.24	0.18	0.16	0.16	0.48	0.00	-
						Total HAPs
						1.97E-03

SEPTA Roberts Complex
Potential Emissions

AC-01 & BLAST-01 - Sandblasting of Rail Components

Media New Age Blast Media
Media Blasting Rate 448 lb/hr
Operating Hours 300 hr/yr
PM10 Emission Factor¹ 13 lb/1000 lb media
PM10 Emissions 5.82 lb/hr

¹ AP42 Table 13.2.6-1 - Sand blasting of mild steel panels

Equipment
Maximum Power Output: Ingersoll Rand Tow-Behind Air Compressor
79 HP
0.20 MMBtu/hr
32%
Assumed Generator Efficiency: 0.63 MMBtu/hr
Maximum Heat Input: 0.137 MMBtu/gal
HHV Diesel (AP-42): 300 hours/yr
Operating hours: 1377 gal/yr
Maximum Diesel Use:

AP42 Emission Factors (lb/MMBtu heat input)						
NOx	VOC	TSP	PM10	CO	SOx	Total HAPs
4.41	0.36	0.31	0.31	0.95	0.29	3.88E-03

(1): AP-42 Table 3.3-1 (10/96) - Assume TSP = PM10

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Total HAPs
2.77	0.23	0.19	0.19	0.60	0.18	2.44E-03

Maximum Potential Emissions (Both Processes Combined) (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Total HAPs
2.77	0.23	6.02	6.02	0.60	0.18	2.44E-03

Maximum Potential Emissions (Both Processes Combined) (tons/year)						
NOx	VOC	TSP	PM10	CO	SOx	Total HAPs
0.42	0.03	0.90	0.90	0.09	0.03	3.66E-04

SEPTA Roberts Complex
Potential Emissions

Stage 2-01 - 10,000 gal Gasoline Tank	
Capacity	10,000 gal
Annual Throughput	68,966 gal
Operating Hours	8,760 hr/yr
Stage 2 Vapor Recovery	
Control Efficiency	95 %

	VOC		
	Emission Factors ¹	Emissions	
	(lb/Mgal)	lb/hr	ton/yr
Gasoline Tank Filling	0.56	0.0044	0.0193
Gasoline Vehicle Filling	0.31	0.0024	0.0107
		Total:	0.0300

(1) Emission factors calculated using the following equations:

Loading Emissions (AP-42, p. 5.2-4, dated 6/08):

$$LL = (12.46 \times (S \times P \times M) / T) \times (1 - \text{eff}/100)$$

where:

LL = loading losses (lbs/1000 gal)

S = Saturation factor (AP-42, Table 5.2-1, dated 6/08)

P = True vapor pressure of liquid loaded (psia) (AP-42, Table 7.1-2, dated 11/06)

M = Molecular weight of vapors (lb/lb-mole) (AP-42, Table 7.1-2, dated 11/06)

T = Temperature of bulk liquid loaded (deg R)

eff = overall reduction efficiency (% control x % capture)

S = 1.00

P = 7.4 psia

M = 66

T = 540 °R (80 °F)

eff = 95%

Gasoline Motor Vehicle Refueling (AP-42, p. 5.215, dated 6/08):

$$Er = 264.2 \times (-5.909 - 0.0949 \times \Delta T + 0.0884 \times T_d + 0.485 \times RVP) \times (1 - \text{eff}/100)$$

where:

Er = Motor Vehicle Refueling Losses (mg/L)

ΔT = difference between temperature of fuel in vehicle tank and dispensed fuel (deg F)

T_d = Temperature of bulk liquid loaded (deg F)

RVP = True vapor pressure of liquid loaded (psia) (AP-42, Table 7.1-2, dated 11/06)

eff = overall reduction efficiency (% control x % capture)

ΔT = 20 °F

T_d = 80 °F

RVP = 7.4 psia

eff = 95%

SEPTA Roberts Complex
Potential Emissions

PW-01 - Facility Parts Washers

Solvent: Algonquin 1044
Zep Dyna 143
Number of Parts Washers: 5 Complex-Wide
Density: 6.5 lb/gal
VOC Content: 6.5 lb/gal

Annual Solvent Evaporation (gal/year)	VOC Emissions (tons/year)
200	0.65

SEPTA Roberts Complex
Potential Emissions

SB-01 - Paint Booth

Coating Information

Manufacturer	Description	Product Code	Density (lb/gal)	VOC Content (lb/gal)	Solids Content (lb/gal)	HAP Content (lb/gal)	Short-Term Throughput (gal/hr)	Annual Throughput (gal/yr)
Deft	Acrylic Gloss White	36W032	10.92	2.18	4.37	0	9.11E-02	273
Deft	Catalyst	36W032CAT	9.64	0.01	5.79	9.64E-03	2.48E-02	74
Deft	Primer - Surfacer	09GY007	11.57	2.31	4.63	0	8.61E-02	258
Deft	Catalyst	09GY007CAT	9.64	0.01	5.79	9.64E-03	2.16E-02	65
Deft	Thinner	IS-260	7.28	7.28	0	3.64E-01	3.88E-02	116
Deft	Hardener	85X107	7.30	7.30	0	0	3.27E-03	10
Total:							0.3	797

Operating Hours	3000 hr/yr
-----------------	------------

Particulate control efficiency for filters	99.84%
% Overspray	30.0%

Emission Estimates

Description	VOC Emissions		HAP Emissions		PM10 Emissions	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Acrylic Gloss White	0.20	0.30	0	0	1.91E-04	2.86E-04
Catalyst	2.39E-04	3.58E-04	2.39E-04	3.58E-04	6.88E-05	1.03E-04
Primer - Surfacer	0.20	0.30	0	0	1.91E-04	2.87E-04
Catalyst	2.08E-04	3.12E-04	2.08E-04	3.12E-04	5.98E-05	8.98E-05
Thinner	0.28	0.42	1.41E-02	2.12E-02	0	0
Hardener	0.02	0.04	0	0	0	0
Total:	0.70	1.06	1.46E-02	2.18E-02	5.11E-04	7.66E-04

SEPTA Roberts Complex
Potential Emissions

CU-SB - Spray Booth Heater

Maximum Heat Input: 1.77 MMBtu/hr
 HHV Natural Gas (AP-42): 1,020 MMBtu/MMBtu³
 Operating hours: 3,000 hours/yr
 Maximum Natural Gas Use: 5.21 MMBtu³/yr

Emission factors for Boilers Burning Natural Gas (AP-42 (7/98) Table 1.4-1 & -2)						
Emission factors (lb/MMBtu ³)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
100	5.5	7.6	7.6	84	0.6	0.0005
						Total HAPs
						1.89

Potential Emissions (lb/hr)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.17	9.55E-03	1.32E-02	1.32E-02	0.15	1.04E-03	8.68E-07
						Total HAPs
						3.28E-03

Potential Emissions (ton/year)						
NOx	VOC	TSP	PM10	CO	SOx	Pb
0.26	0.01	0.02	0.02	0.22	1.56E-03	1.30E-06
						Total HAPs
						4.92E-03

SEPTA Roberts Complex
Potential Emissions

TANK-01 - 2,000 gal Windshield Washer Fluid Tank

Capacity	2,000 gal
Annual Throughput	3,300 gal
Operating Hours	8,760 hr/yr

	VOC Emissions ¹
Total (lb/yr)	28.58
Total (lb/hr)	3.26E-03
Total (ton/yr)	0.01

(1) Emissions estimated using EPA TANKS 4.0.9

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	TANK-01
City:	Philadelphia
State:	Pennsylvania
Company:	SEPTA
Type of Tank:	Horizontal Tank
Description:	2,000 gallon Windshield Washer Fluid Tank

Tank Dimensions

Shell Length (ft):	13.30
Diameter (ft):	5.20
Volume (gallons):	2,000.00
Turnovers:	1.65
Net Throughput(gal/yr):	3,300.00

Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Philadelphia, Pennsylvania (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d **Emissions Report - Detail Format** **Liquid Contents of Storage Tank**

TANK-01 - Horizontal Tank **Philadelphia, Pennsylvania**

Mixture/Component	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)			Vapor Pressure (psia)		Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
	Month	Avg	Min	Max	Avg	Min	Avg	Max					
Methyl alcohol	All	55.99	51.19	60.78	54.30	1.2694	1.0867	1.4779	32.0400			32.04	Option 2: A=7.897, B=1474.08, C=229.13

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

TANK-01 - Horizontal Tank Philadelphia, Pennsylvania

Annual Emission Calculations		
Standing Losses (lb):	25.3902	
Vapor Space Volume (cu ft):	179.9072	
Vapor Density (lb/cu ft):	0.0074	
Vapor Space Expansion Factor:	0.0618	
Vented Vapor Saturation Factor:	0.8511	
Tank Vapor Space Volume:		179.9072
Vapor Space Volume (cu ft):	5.2000	
Tank Diameter (ft):	9.3963	
Effective Diameter (ft):	2.6000	
Vapor Space Outage (ft):	13.3000	
Tank Shell Length (ft):		
Vapor Density		0.0074
Vapor Density (lb/cu ft):	32.0400	
Vapor Molecular Weight (lb/lb-mole):		
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2694	
Daily Avg. Liquid Surface Temp. (deg R):	515.6569	
Daily Average Ambient Temp. (deg F):	54.2792	
Ideal Gas Constant R:		
(psia cu ft / (lb-mol-deg R)):	10.731	
Liquid Bulk Temperature (deg R):	513.9692	
Tank Paint Solar Absorbance (Shell):	0.1700	
Daily Total Solar Insulation Factor (Btu/sq ft day):	1.263.2634	
Vapor Space Expansion Factor		0.0618
Vapor Space Expansion Factor:	19.1711	
Daily Vapor Temperature Range (deg R):	0.3912	
Daily Vapor Pressure Range (psia):	0.0600	
Breather Vent Press. Setting Range (psia):		
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2694	
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.0867	
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	1.4779	
Daily Avg. Liquid Surface Temp. (deg R):	515.6569	
Daily Min. Liquid Surface Temp. (deg R):	510.8641	
Daily Max. Liquid Surface Temp. (deg R):	520.4497	
Daily Ambient Temp. Range (deg R):	18.2750	
Vented Vapor Saturation Factor		0.8511
Vented Vapor Saturation Factor:		
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2694	
Vapor Space Outage (ft):	2.6000	
Working Losses (lb):		3.1957
Vapor Molecular Weight (lb/lb-mole):	32.0400	
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2694	
Annual Net Throughput (gallyr.):	3,300.0000	
Annual Turnovers:	1.6500	
Turnover Factor:	1.0000	

Tank Diameter (ft):	5.2000
Working Loss Product Factor:	1.0000
Total Losses (lb):	28.5759

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

TANK-01 - Horizontal Tank
Philadelphia, Pennsylvania

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Methyl alcohol	3.20	25.38	28.58

Attachment D
Permit Mark-up

TABLE A-1-FACILITY INVENTORY LIST

Group 01 – Combustion Units						
Source ID	Source Description	Manufacturer	Model No	Capacity	Fuel/Material	Construction Date
COMB-01	Boiler No. 1	Cleaver-Brooks	CB500-100	4,184,000 BTU/hr	No. 2 Fuel Oil	
COMB-02	Boiler No. 2	Cleaver-Brooks	CB500-200	8,369,000 BTU/hr	No. 2 Fuel Oil	
COMB-03	Boiler No. 3	Cleaver Brooks	CB500-200	8,369,000 BTU/hr	No. 2 Fuel Oil	
COMB-04	Boiler No. 4	H.B. Smith	Not Available	522,000 BTU/hr	No. 2 Fuel Oil	
COMB-05	Boiler No. 5	A.O. Smith	BTP150-720	720,000 BTU/hr	Natural Gas	
COMB-06	Boiler No. 6	A.O. Smith	BTP140-720	720,000 BTU/hr	Natural Gas	
COMB-07	Boiler No. 7 with FGR	Kewanee	K-350-G04-FGR	11,716,000 BTU/hr 9,000,000	Natural Gas / No. 2 Fuel Oil	
COMB-08	Boiler No. 8 with FGR	Kewanee	K-350-G04-FGR	11,716,000 BTU/hr 9,000,000	Natural Gas / No. 2 Fuel Oil	
COMB-09	Boiler No. 9	Smith	19 Series - 4	359,000 BTU/hr	Natural Gas	
COMB-10	Boiler No. 10	Smith	19 Series - 4	359,000 BTU/hr	Natural Gas	
COMB-11	Pressure Washer	Hotsy	5732	657,000 BTU/hr	Natural Gas	
COMB-12	Space Heater No. 1	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	
COMB-13	Space Heater No. 2	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	
COMB-14	Space Heater No. 3	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	

TABLE A-1-FACILITY INVENTORY LIST (CONTINUED)

Group 01 – Combustion Units (Continued)						
Source ID	Source Description	Manufacturer	Model No	Capacity	Fuel / Material	Construction Date
COMB-15	Space Heater No. 4	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	
COMB-16	Space Heater No. 5	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	
COMB-17	Space Heater No. 6	Reznor	B400-S-E	400,000 BTU/hr	Natural Gas	
CU-SB	Spray booth burner			1,771,000 Btu/hr	Natural Gas	
Group 02 – Emergency Generator, Welding Engine, Air Compressor, and Blasting Operations						
EG-01	Emergency generator	CAT (1996 Model Year)	3512	10.150 MMBTU/hr	Diesel	
WE-01	Welder engine	Ductz	D2014L03	220,000 BTU/hr	Diesel	
AC-01	Air compressor for sand blasting operations	Ingersoll Rand		79 HP	Diesel	
BLAST-01	Sand Blasting Operation				Blasting Material	
Group 03 – Gasoline Tank / Stage 2 Vapor Recovery (Gasoline Dispensing Facility)						
Stage 2-01	Stage II Vapor Recovery Unit / Gas Dispensing Facility	Gasboy	9153AF	10,000 gallons (Storage Tank)	Gasoline	
Group 04 – Part Washers –Degreasers						
PW-01	Five (5) Parts Washers / Degreasers (cold cleaning machines)					

TABLE A-1-FACILITY INVENTORY LIST (CONTINUED)

Group 05 – Spray Paint Booth

Source ID	Source Description	Manufacturer	Model No	Capacity	Fuel / Material	Construction Date
SB-01	Spray booth	Binks Sames Corporation				

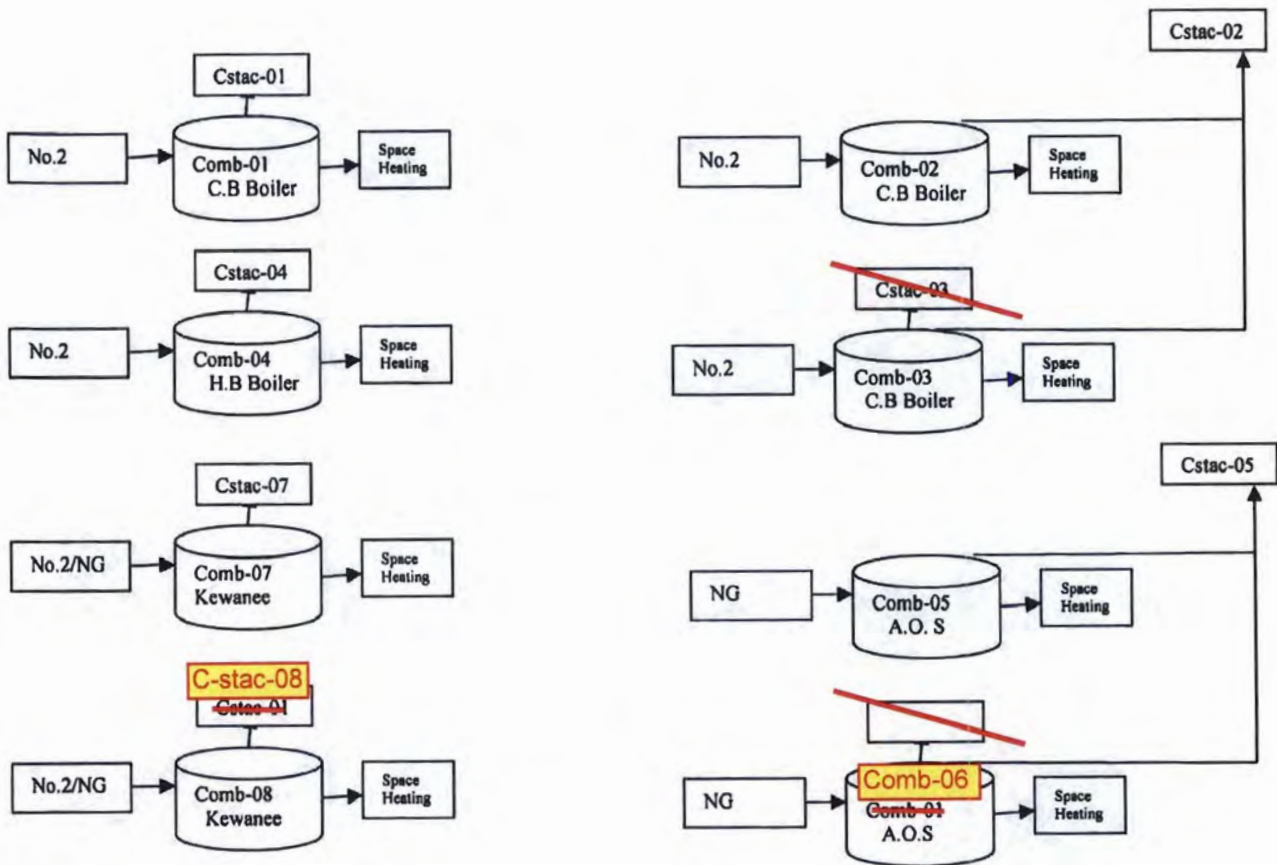
Group 06 –Windshield Washer Fluid Storage Tank

TANK-01	Windshield Washer Fluid (WWF) Tank			2,000 gallons		
---------	------------------------------------	--	--	---------------	--	--

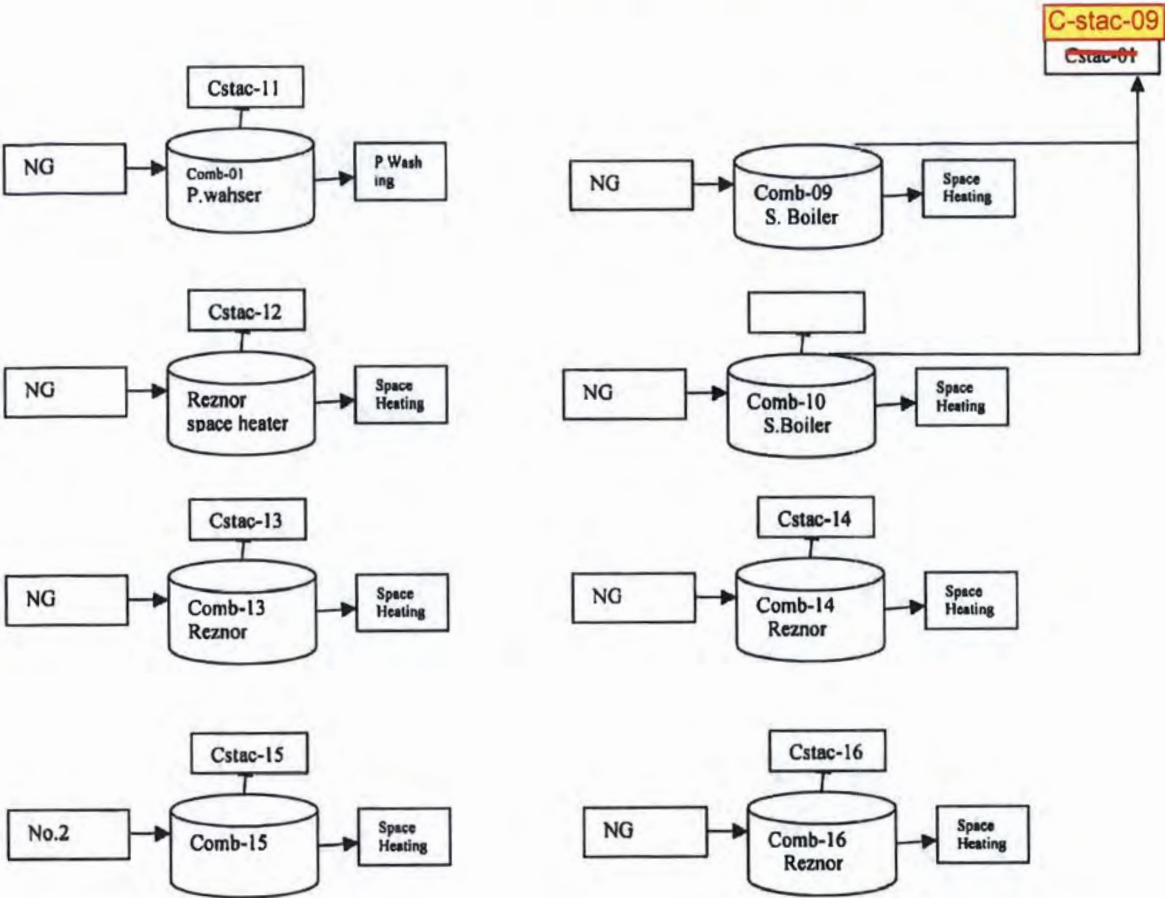
Emission Points or Stacks

CSTAC-01	Combustion Stack 1
CSTAC-02	Combustion Stack 2
CSTAC-03	Combustion Stack 3
CSTAC-04	Combustion Stack 4
CSTAC-05	Combustion Stack 5
CSTAC-07	Combustion Stack 7
CSTAC-08	Combustion Stack 8
CSTAC-09	Combustion Stack 9
CSTAC-11	Combustion Stack 11
CSTAC-12	Combustion Stack 12
CSTAC-13	Combustion Stack 13
CSTAC-14	Combustion Stack 14
CSTAC-15	Combustion Stack 15
CSTAC-16	Combustion Stack 16
CSTAC-17	Combustion Stack 17
EGSTAC-01	Emergency Generator Stack
WSTAC-01	Welding Engine Stack
S2STAC-01	Stage II Gasoline Tank Stack
TSTAC-01	WWF Tank Stack
SBSTAC-01	Spray Booth Stack

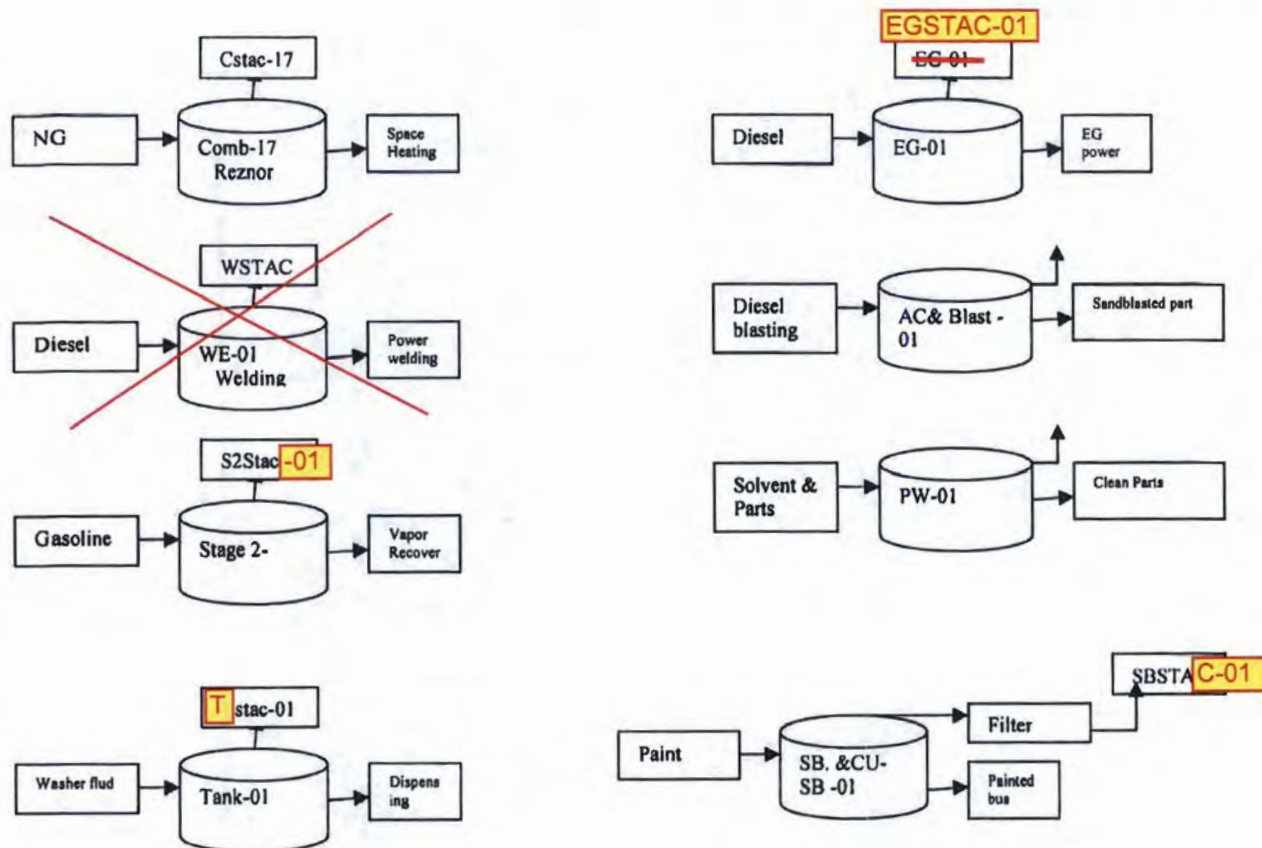
SEPTA – Roberts Complex –Synthetic Minor Operating Permit



SEPTA – Roberts Complex –Synthetic Minor Operating Permit



SEPTA – Roberts Complex –Synthetic Minor Operating Permit



PROCESS FLOW DIAGRAM FOR SEPTA – ROBERTS COMPLEX
SECTION B. GENERAL CONDITIONS

1. Definitions

[25 Pa Code §121.1]

- (2) Carbon Monoxide (CO) emissions from each boiler, pressure washer, space heater, or paint booth burner may not exceed 1% by volume of exhaust gases. [AMR VIII Sec. II.6]
- (3) For Boiler Nos. 7 and 8, the Permittee shall also meet the Best Available Technology (BAT) required under 25 PA. Code 127.1 and 127.12(a)(5). BAT for each of the 11.716 Million British Thermal Units per hour (MMBtu/hr) Kewanee Boilers shall include the installation of low NOx burners, or flue gas recirculation (FGR), or combinations of the two, or other measures capable of meeting the emission limitations described below:
 - (i) 90 ppm_{dv} NO_x at 3% O₂ when firing No. 2 fuel oil;
 - (ii) 30 ppm_{dv} NO_x at 3% O₂ when firing gas;
 - (iii) 300 ppm_{dv} CO at 3% O₂.[AMS Plan Approval No.11035 dated 02/03/2012]
- (c) Group 02 – Emergency Generator, Welding Engine, Air Compressor, and Blasting Operations
 - (1) PM emissions from the emergency generator, ~~welding engine~~, air compressor, and blasting operations shall each not exceed 0.04 grain per dry standard cubic foot when the effluent gas volume is less than 150,000 dry standard cubic feet per minute. [25 PA Code §123.13(c)(1)(i)]
 - (2) Carbon Monoxide (CO) emissions from the emergency generator, ~~welding engine~~, air compressor, and blasting operations shall each not exceed 1% by volume of exhaust gases. [AMR VIII Sec. II.6]
 - (3) The allowable Nitrogen Oxide (NO_x) emissions from each emergency generator, a compression ignition stationary internal combustion engine firing diesel fuel, shall be 2.3 grams per brake horsepower-hour during the period of May 1 through September 30 ("ozone season"). If the actual NO_x emission during the ozone season exceed the allowable NO_x emission, NO_x allowance(s) may be purchased to demonstrate compliance. [25 PA Code 129.203]
- (d) Group 03 – Gasoline Tank / Stage 2 Vapor Recovery (Gasoline Dispensing Facility)
 - (1) The Permittee may not load or permit the loading of gasoline having a Reid vapor pressure of 4.0 pounds per square inch (psi) or greater into the gasoline storage tank unless the tank is equipped with a permanent submerged fill pipe which extends from the filling orifice to within 6 inches of the bottom of the tank (Stage I control). The organic vapors displaced during filling of the tank must be controlled by a system that prevents release to the atmosphere of at least 90 percent by weight of the displaced organic vapors. [25 PA Code §129.61 and AMR V Sec. V.B]
 - (2) Permittee may not load gasoline into the fuel tank of any motor vehicle unless the loading is conducted using a vapor control system (Stage II) that prevents the release to the atmosphere of at least 90 percent by weight of the gasoline vapors displaced from the motor vehicle fuel tank during loading. [AMR V Sec. V.C]
 - (3) The Permittee shall not use or dispense any gasoline having a Reid Vapor Pressure (RVP) greater than 9.0 psi during the period May 1 through September

(a) Group 01 – Combustion Units (Boilers, Pressure Washer, Space Heaters, and Paint Booth Burner)

(1) Each combustion unit shall be installed, maintained, and operated in accordance with manufacturer's specifications.

(2) Boilers Nos. 1-4 shall only burn No. 2 fuel oil.

(3) The Permittee shall conduct a tune-up of boiler Nos. 1, 2, 3, and 4, biennially to demonstrate compliance with 40 CFR §63.11223. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. The tune-up shall include the following requirements:

[40 CFR §63.11223(b)]

(i) Inspect the burner, and clean or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled unit shutdown, but must inspect the burner at least once every 36 months.

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly.

(iv) Optimize total emissions of carbon monoxide. The optimization should be consistent with the manufacturer's specifications, if available.

(v) Measure the concentration in the effluent stream of carbon monoxide in parts per million by volume and oxygen in volume percent, before and after the adjustments are made. Measurements may be either on a wet or dry basis as long as it is the same basis before and after the adjustments are made.

(vi) Maintain onsite and submit, if requested by the Department, biennial report containing the following information.

(A) The concentration of CO in the effluent stream as prescribed in D.2(a)(3)(v).

(B) A description of any corrective action taken as part of the tune-up of the boiler.

(C) The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler.

(vii) If the unit is not operating on the required date for a tune-up, a tune-up must be conducted within one week of startup.

(viii) Enforcement of this Subpart shall follow EPA or No. 2 oil. 12 No Action Assurance and subsequent EPA determinations.

(4) Boilers #7 and #8 shall only burn natural gas, ~~except these boilers may burn No. 2 oil during periods of gas curtailment, gas supply emergencies or periodic testing of No. 2 oil. Periodic testing of No. 2 oil shall not exceed a combined total of 48 hours during any calendar year for each boiler. [Exemption from 40 CFR 63 Subpart JJJJJJ- definition of "Gas-Fired Boiler"]~~

(5) Boilers Nos. 5, 6, 9, and 10 shall only burn natural gas.

See following pages for additional requirements to be added to Section D.2(a)

- (6) The Pressure Washer shall only burn natural gas.
- (7) Space Heater Nos. 1-6 shall only burn natural gas.
- (8) The spray booth burner shall only burn natural gas.
- (9) A visual inspection of each boiler shall be conducted during fuel oil burning.
- (b) Group 02 – Emergency Generator, ~~Welding Engine~~, Air Compressor, and Blasting Operations
 - (1) For the emergency generator, the Permittee shall meet the following:
 - (i) The emergency generator shall only burn diesel fuel oil.
 - (ii) The emergency generator shall be operated only during emergencies, testing, and engine tuning.
 - (iii) Emergencies are defined as when the primary power source for the facility has been rendered inoperable by an unanticipated incident;
 - (iv) Testing for the emergency generator is limited to 30 minutes per week. [AMS Plan approval No.11035 dated 02/03/2012];
 - (v) Engine tuning may be performed on the emergency generator one time per year and is limited to four hours.
 - (vi) The emergency generator is limited to 100 hours per rolling 12-month period. [Application]
 - (vii) During the ozone season, the Permittee shall comply with the following requirements of Air Management Regulation (AMR) XV:
 - (A) Testing and/or tuning of emergency engines during the ozone season (May 1 to September 30) shall only be done between the hours of 5 PM and 11 PM. Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00 PM and 7:30 AM.
 - (B) No testing and/or tuning of emergency engines shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day, or on an Air Quality Action Day during the ozone season. An Air Quality Action Day is defined when the Air Quality Index (AQI) for the Southeast Region of Pennsylvania has exceeded the National Ambient Air Quality Standards for ozone or fine particulate matter. An Air Quality Action Day is represented by an AQI greater than 100.
 - (C) Prior to testing during the ozone season, the Permittee shall check the AQI. The AQI forecast can be checked after 5 pm on the day prior to testing or on the day of testing. This can be done by either:
 - (a) Receiving daily forecasts by email from the Pennsylvania Air Quality Partnership which can be subscribed to by registering at: http://www.dep.state.pa.us/aq_apps/aqpartners/emailadd.asp
 - (b) Checking for the forecast at the following website: http://www.dep.state.pa.us/aq_apps/aqpartners/forecast.asp?vargroup=se
 - (c) Calling the Pennsylvania Air Quality Partnership Hotline (Southeast

Region) at 1-800-872-7261. The recorded message will indicate the forecast in terms of a color code. A color code of orange or red corresponds to an AQI above 100.

- (viii) All emergency generators and fire pumps are exempt from the requirements of Conditions D.2(b)(1)(iv)(C)(a)-(c) during emergencies or emergency repairs regardless of the air quality.
 - (ix) Sound levels produced by the emergency generator shall not exceed the following: [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]**
 - (A) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or
 - (B) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.
 - (x) Vibration levels from the emergency generator shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400 (Noise and Excessive Vibration) §10-403(11)]**
 - (2) The Permittee shall meet the following requirements for the ~~welding engine~~, air compressor and blasting operations:
 - ~~(i) The welding engine shall only burn diesel fuel oil.~~
 - ~~(ii) The welding engine shall not operate for more than 1000 hours per rolling 12-month period. [AMS Plan approval No. 11035 dated 02/03/2012]~~
 - (iii) The air compressor shall only burn diesel fuel oil.
 - (iv) The air compressor shall not operate for more than 120 hours per rolling 12-month period. [AMS Plan approval No. 11035 dated 02/03/2012]
 - (3) The Permittee shall surrender to the Pennsylvania Department of Environmental Protection (PADEP) one NOx allowance, as defined in 25 PA Code §145.2, for each ton of NOx by which the actual emissions from the emergency generator exceed the allowable emission per Conditions D.4(c)(1)-(2). The surrendered NOx allowances shall be of current year vintage. For the purpose of determining the amount of allowances to surrender, any remaining fraction of a ton equal to or greater than 0.50 ton is deemed equal to 1 ton and any fraction of a ton less than 0.50 ton is deemed to be equal to zero tons. [25 PA Code §129.204(c)]
 - (4) If the allowable emissions from the emergency generator from May 1 to September 30 exceed the actual emissions from the emergency generator during the same period, the Permittee may deduct the difference or any portion of the difference from amount of the actual emissions from other units subject to 25 PA Code §129.201-205 at the Permittee's other facilities. [25 PA Code §129.204(d)]
- (c) Group 03 – Gasoline Tank / Stage 2 Vapor Recovery (Gasoline Dispensing Facility)
- (1) The Permittee must, at all times, operate and maintain each source or control device in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation

The Permittee shall monitor the following:

- (1) The proper operation of the boilers in accordance with manufacturer's recommended operations and maintenance.
 - (2) The total combined monthly No. 2 fuel oil usage for Boilers No. 1, 2, 3, and 4.
 - (3) The total combined monthly natural gas usage for Boiler Nos. 5, 6, 9, and 10.
 - (4) The monthly natural gas and monthly No. 2 fuel oil for Boilers No. 7 and 8.
 - (5) The total monthly natural gas usage for the pressure washer, Space Heaters Nos. 1-6, and spray booth burner.
 - (6) Sulfur content of No. 2 fuel oil. The Permittee shall monitor fuel manifest records or other AMS approved record to demonstrate compliance.
 - (7) For each combustion unit burning fuel oil visible emission for each boiler by using a daily visual check of the exhaust stack during fuel oil burning. The visual check does not need to meet the requirements of Federal Reference Method 9. If visible emissions are detected, adjustments shall be made to the unit to eliminate the visible emissions or a certified smoke reader shall be used to determine the opacity of the emissions.
- (c) Group 02 – Emergency Generator, ~~Welding Engine~~, Air Compressor, and Blasting Operations
- (1) By October 31 of each year, the Permittee shall calculate the difference between the actual Nitrogen Oxide (NOx) emissions and the allowable emissions for the emergency generator during the period from May 1 through September 30 ("ozone season"). The allowable emissions for the period shall be calculated by multiplying the cumulative hours of operation for the emergency generator for the period by the horsepower rating of the unit and by the applicable emission rate of 2.3 grams NOx per brake horsepower-hour (Bhp-hr). [25 PA Code §129.203]
 - (2) The Permittee shall calculate actual emissions of NOx during the ozone season for each emergency generator based on one of the following: [25 PA Code §129.204]
 - (i) The 1-year average emission rate calculated from the most recent compliance demonstration test data for NOx.
 - (ii) The maximum hourly allowable NOx emission rate contained in the permit or the higher of the following:
 - (A) The highest rate determined by use of the emission factor for the unit class contained in the most up-to date version of the EPA publication, "AP-42 *Compilation of Air Pollution Emission Factors*."
 - (B) The highest rate determined by use of the emission factor for the unit class contained in the most up-to date version of EPA's "Factor Information Retrieval (FIRE)" data system.
 - (iii) The Permittee can elect to monitor NOx emissions with CEMS. The Permittee shall monitor emissions and report the data from this CEMS in accordance with Chapter 139 or Chapter 145 (relating to interstate pollution transport reduction). Any data invalidated under Chapter 139

shall be substituted with data calculated using the potential emission rate for the unit or, if approved by AMS in writing, an alternative amount of emissions that is more representative of actual emissions that occurred during the period of invalid data.

- (iv) The Permittee can use an alternate calculation and recordkeeping procedure based upon emissions testing and correlations with operating parameters if AMS, prior to implementation, approves the alternate calculation and recordkeeping procedures. The Permittee shall demonstrate that the alternate procedure does not underestimate actual emissions throughout the allowable range of operating conditions.
- (3) By November 1 of each year, the Permittee shall surrender the required NOx allowances to PADEP's designated NOx allowance tracking system account and provide to AMS, in writing, the following: [25 PA Code §129.204(e)]
 - (i) The serial number of each NOx allowance surrendered; and
 - (ii) Calculations used to determine the quantity of NOx allowances required to be surrendered.
- (4) If the Permittee fails to comply with 25 PA Code §129.204(e), regarding the submission of NOx allowances by November 1, the Permittee shall by December 31 surrender three NOx allowances of the current or later year vintage for each NOx allowance that was required to be surrendered by November 1 of that year. The surrender of NOx allowances under this condition does not affect the liability of the Permittee for any fine, penalty or assessment, or an obligation to comply with any other remedy for the same violation, under the Clean Air Act Amendments or the Clean Air Act. For purposes of determining the number of days of violation, if a facility has excess emissions for the period May 1 through September 30, each day in that period (153 days) constitutes a day in violation unless the Permittee demonstrates that a lesser number of days should be considered. Each ton of excess emissions is a separate violation. [25 PA Code §129.204(f) & (g)]
- (5) For the emergency generator, the Permittee shall monitor the following:
 - (i) Monthly fuel usage and sulfur content of fuel oil;
 - (ii) Monthly operating hours and operating hours per rolling 12-month period calculated monthly; and
 - (iii) During the ozone season, the Permittee shall monitor the AQI and daily operating hours and times to demonstrate compliance with AMR XV.
- (6) The Permittee shall monitor the following:
 - (i) Monthly fuel usage for the ~~welding engine and~~ air compressor;
 - (ii) Monthly operating hours for the ~~welding engine and~~ air compressor; and
 - (iii) For blasting operations, monthly blast media usage and the type/name of blasting media used. The Permittee shall keep a copy of the Material Safety Data Sheets for each blasting media used at the facility.
 - (iv) Allowable and actual NOx emissions, any other calculations or verification,

- (B) The dates and times of routine inspections and maintenance repair activities.

[AMS Plan Approval No.11035 dated 02/03/2012]

5. Recordkeeping Requirements

[25 Pa Code §§127.511, 135.21, 135.5 & 139]

See following pages for additional requirements to be added to Section D.5(b)

(a) Facility

The Permittee shall keep records of the following:

- (1) The Permittee shall record all verification that NO_x emissions are less than 25 tons per rolling 12-month period. [AMS Plan Approval No.11035 dated 02/03/2012]
- (2) The Permittee shall establish and maintain baseline operating records, sampling data concurrent with any emission tests, and any supporting calculations used to determine emissions;
- (3) Records of the occurrence or duration of malfunction of operation of a boiler or emergency generator;
- (4) Records of the occurrence, duration, and cause (if known) of each malfunction of air pollution equipment or monitoring equipment used to comply with the restrictions or monitoring provisions of this permit;
For monitoring equipment used to comply with the monitoring requirements of this permit, records documenting the completion of installation, calibration checks, and maintenance.

(b) Group 01 – Combustion Units (Boilers, Pressure Washer, Space Heaters, and Paint Booth Burner) [AMS Plan Approval No.11035 dated 02/03/2012]

The Permittee shall keep the following records:

- (1) The proper operation of the boilers in accordance with manufacturers recommended operations and maintenance.
- (2) The total combined monthly No. 2 fuel oil usage for Boilers No. 1, 2, 3, and 4.
- (3) The total combined monthly natural gas usage for Boiler Nos. 5, 6, 9, and 10.
- (4) The monthly natural gas and monthly No. 2 fuel oil for Boilers No. 7 and 8.
- (5) The total monthly natural gas usage for the pressure washer, Space Heaters Nos. 1-6, and spray booth burner.
- (6) Sulfur content of No. 2 fuel oil. The Permittee shall keep fuel manifest records or other AMS approved record to demonstrate compliance.
- (7) For Boiler No. 7 and 8, the Permittee shall keep records of stack tests or portable analyzer tests conducted.
- (8) For Boiler No. 7 and 8, the Permittee shall keep No. 2 oil fuel certifications. The fuel certification shall include the following: [40 CFR 60.48c(e)(11), 40 CFR 60.48c(f)(1)]
 - (i) The name of the oil supplier;
 - (ii) A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c;

- (iii) The sulfur content or the maximum sulfur content of the oil.
- (8) For Boilers No. 1, 2, 3, and 4 the Permittee shall keep the following records;
 - (i) Copies of all required notifications. [40 CFR §63.11225(c)(1)]
 - (ii) Tune-up records - records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. [40 CFR §63.11225(c)(2)(i)]
 - (iii) A copy of each notification and report submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status submitted.
- (10) Visible emission checks for each boiler by using a daily visual check of the exhaust stack during fuel oil burning.
- (c) Group 02 – Emergency Generator, ~~Welding Engine~~, Air Compressor, and Blasting Operations [AMS Plan Approval No.11035 dated 02/03/2012]
 - (1) The Permittee shall keep records of the following:
 - (i) Monthly fuel usage for the emergency generator.
 - (ii) Daily operating hours and operating hours per rolling 12-month period calculated monthly for the emergency generator.
 - (iii) During the ozone season, the date, duration, and AQI when testing or tuning of the emergency generator was conducted.
 - (iv) Allowable and actual NOx emissions, any other calculations or verification, and NOx allowances surrendered.
 - (v) Monthly fuel usage for the ~~welding engine and~~ air compressor.
 - (vi) Monthly operating hours for the ~~welding engine and~~ air compressor, calculated monthly.
 - (vii) For blasting operations, monthly blast media usage and the type/name of blasting media used. The Permittee shall keep a copy of the Material Safety Data Sheets for each blasting media used at the facility.
- (d) Group 03 – Gasoline Tank / Stage 2 Vapor Recovery (Gasoline Dispensing Facility) [AMS Plan Approval No.11035 dated 02/03/2012]
 - (1) The Permittee shall keep records of the following: [25 PA Code §129.82(b)(5) and AMR V Sec. V.D]
 - (i) Monthly gasoline throughput;
 - (ii) Any failures – type and duration;
 - (iii) Maintenance and repair;
 - (iv) Tests certifications;
 - (v) Records of occurrence and duration of any malfunction of operation or air pollution control device [40 CFR §63.11125(d)(1)]; and
 - (vi) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR §63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR §63.11125(d)(2)]

- (iv) The dates and times of routine inspections and maintenance repair activities.

See following pages for additional requirements to be added to Section D.6(c)

6. Reporting Requirements

[25 Pa Code §127.442 & AMR I Sec. II]

- (a) Any violation of an emission limitation shall be reported (by phone call or facsimile transmission) to AMS within 24 hours of detection and followed by written notification within thirty-one (31) days.
- (b) The Permittee shall submit to AMS annual reports of the performance of the facility using the City of Philadelphia Monitoring Report Form as required in Section C.10 of this permit. These reports shall consist of the following:
- (1) A description of any deviations from permit requirements that occurred during the 12-month reporting period, the probable cause of such deviations, and corrective actions or preventive measures taken;
 - (2) A description of any malfunction of processes, air pollution control equipment, or monitoring equipment that occurred during the 12-month reporting period, the date and duration of the incidents, the probable cause of the incidents, and actions taken to remediate such incidents;
 - (3) A description of any sources which have not been operated for more than one year.
 - (4) Along with each annual report submittal, the Permittee shall submit a statement listing any Synthetic Minor emission limitations that were violated during the previous 12-month time period.
- (c) Group 01 – Combustion Units
- (1) The Permittee shall also submit the following for boilers #1, 2, 3, and 4:
 - (i) Notification of Compliance Status in accordance with 40 CFR §63.9(h) no later than 120 days after the applicable compliance date specified in 40 CFR §63.11196. [40 CFR §63.11225(a)(4)]
 - (ii) Biennial Compliance Report must be prepared by March 1 of every other year starting March 1, 2015 for existing sources. The report must be submitted upon request; unless the source experiences any deviations from the applicable requirements then the report must be submitted by March 15. The report must contain the following: [40 CFR §63.11225(b)(1)-(4)]
 - (A) Company name and address.
 - (B) Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart.
 - (C) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.

Section D.2(a)

- (4) The Permittee shall conduct a tune-up of the Kewanee boilers biennially to demonstrate compliance with 40 CFR 63.11223. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. The Permittee must conduct the tune-up while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up. The tune-up shall include the following requirements: [40 CFR 63.11223(a) & (b)]
- (i) Inspect the burner, and clean or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled unit shutdown, but must inspect the burner at least once every 36 months.
 - (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
 - (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The Permittee may delay the inspection until the next scheduled unit shutdown, but must inspect the system at least once every 36 months.
 - (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available.
 - (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made. Measurements may be either on a dry or wet basis as long as it is the same basis before and after the adjustments are made. Measurements may be taken using a portable CO analyzer.
 - (vi) Maintain on-site and submit, if requested by the Department, a biennial report containing the following information.
 - (A) The concentrations of CO in the effluent stream as prescribed in D.2(a)(4)(v).
 - (B) A description of any corrective actions taken as a part of the tune-up of the boiler.
 - (C) The type and amount of fuel used over the 12 months prior to the tune-up of the boiler. Units sharing a fuel meter may estimate the fuel use by each unit.
 - (vii) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.
 - (viii) The initial tune-up shall be performed within 180 days of the switch of fuels triggering 40 CFR Subpart JJJJJ requirements.

Section D.5(b)

- (9) For the Kewanee boilers, the Permittee shall keep the following records:
- a. Copies of all required notifications. [40 CFR 63.11225(c)(1)]

- b. Tune-up records – records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. [40 CFR 63.11225(c)(2)(i)]
- c. A copy of each notification and report submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status submitted. [40 CFR 63.11225(c)(1)]
- d. Records of occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment. [40 CFR 63.11225(c)(4)]
- e. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. [40 CFR 63.11225(c)(5)]

Section D.6(c)

(2) The Permittee shall submit the following for the Kewanee boilers upon becoming subject to 40 CFR 63 Subpart JJJJJJ:

- a. Notice of date upon which the fuel switches to No. 2 Oil which cannot be considered a gas-fired boiler under Subpart JJJJJJ. Notice shall be submitted within 30 days of the change. The notification must identify: [40 CFR 63.11225(g)]
 - i. The name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, and the date of the notice.
 - ii. The date upon which the fuel switch occurred.
- b. Notification of Compliance Status in accordance with 40 CFR 63.9(h) no later than 120 days after the fuel switch occurs. [40 CFR 63.11225(a)(4)]
- c. Biennial Compliance Report must be prepared by March 1 of every other year after the boilers become subject to Subpart JJJJJJ. The report must be submitted upon request unless the source experiences any deviations from the applicable requirements, then the report must be submitted by March 15. The report must contain the following: [40 CFR 63.11225(b)(1)-(4)]
 - i. Company name and address.
 - ii. Statement by a responsible official, with the official's name, title, phone number, e-mail address, and signature, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart.
 - iii. If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.



January 12, 2022

Mr. Edward Wiener
City of Philadelphia
Air Management Services
321 University Avenue
Philadelphia, PA 19104-4543

Subject: SEPTA – Roberts Complex (Plant ID 01573) – Emergency Generator Testing Conditions

Dear Mr. Wiener,

Southeastern Pennsylvania Transportation Authority (SEPTA) hereby submits for Philadelphia Air Management Services (AMS) consideration a request to update the current limitations for the emergency generator permitted under SMOP No. S12-019 at SEPTA's Roberts Complex. The renewal of SMOP No. S12-019 is currently in process. SEPTA request that permit conditions D.2.(b)(1)(iii)-(v) be replaced with the following:

D.2.(b)(1)(iii) Emergencies for the emergency generator are defined as when the primary power source for the facility is disrupted or discontinued during a power outage, or natural disasters that are beyond the control of the owner or operator of a facility.

D.2.(b)(1)(iv) The emergency generator shall operate for a maximum of 25 hours per calendar year for testing, engine tuning, maintenance checks, and readiness testing. The emergency generator may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.

Please contact Rick Harris, System Safety Environmental Officer, at (215) 580-8144 or RHarris@septa.org if you have any questions regarding this request.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Fox".

James Fox
Assistant General Manager
System Safety

Proposed Language for the Urea Injection and Catalyst Pressure Drop Range **(Additions or deletions (i.e., strikethrough) highlighted in red)**

Condition 24 of Plan Approval No.: IP20-000497

24. Within sixty (60) days of achieving the maximum production rate but not later than 180 days after initial startup the Permittee shall conduct an initial performance test to demonstrate compliance with the ammonia slip emission limitation established in Condition 12.

~~(a) During the initial and subsequent test, the minimum urea injection rate for the SCR shall be established to achieve the NO_x emissions in Condition 3. The test shall also establish the maximum urea injection rate for the SCR to achieve Compliance with Condition 12. For the OC, the test shall establish the pressure drop range.~~

(a) During the initial and subsequent performance tests (as required), the Permittee will establish a SCR urea flow to engine load map on each engine that establishes the urea injection rate for the SCR that achieves compliance with the NO_x emissions limitation in Condition 3 and the ammonia slip emissions limitation in Condition 12. The SCR urea flow to engine load map will be established as described in an approved testing protocol submitted to AMS as required in Condition 26(a). For the OC, an average pressure differential across the catalyst will be established for each engine during the initial and subsequent tests.

(b) Ongoing compliance with the SCR urea flow rate and pressure differential across the catalyst will be based on a 3-hour rolling average during normal engine operation. Startup and shutdown hours are excluded from compliance averages. A deviation will occur if the measured SCR urea flow rate differs by more than $\pm 15\%$ of the expected SCR urea flow rate determined by the SCR urea flow to engine load map. A deviation will occur if the pressure differential across the OC differs by more than ± 2 inches of H₂O of the average pressure differential across the catalyst measured during the most recent performance test.

Condition 31(n) of Plan Approval No.: IP20-000497

31. The Permittee shall monitor and keep records of the following:

(n) Urea injection Rate (i.e., actual and expected).

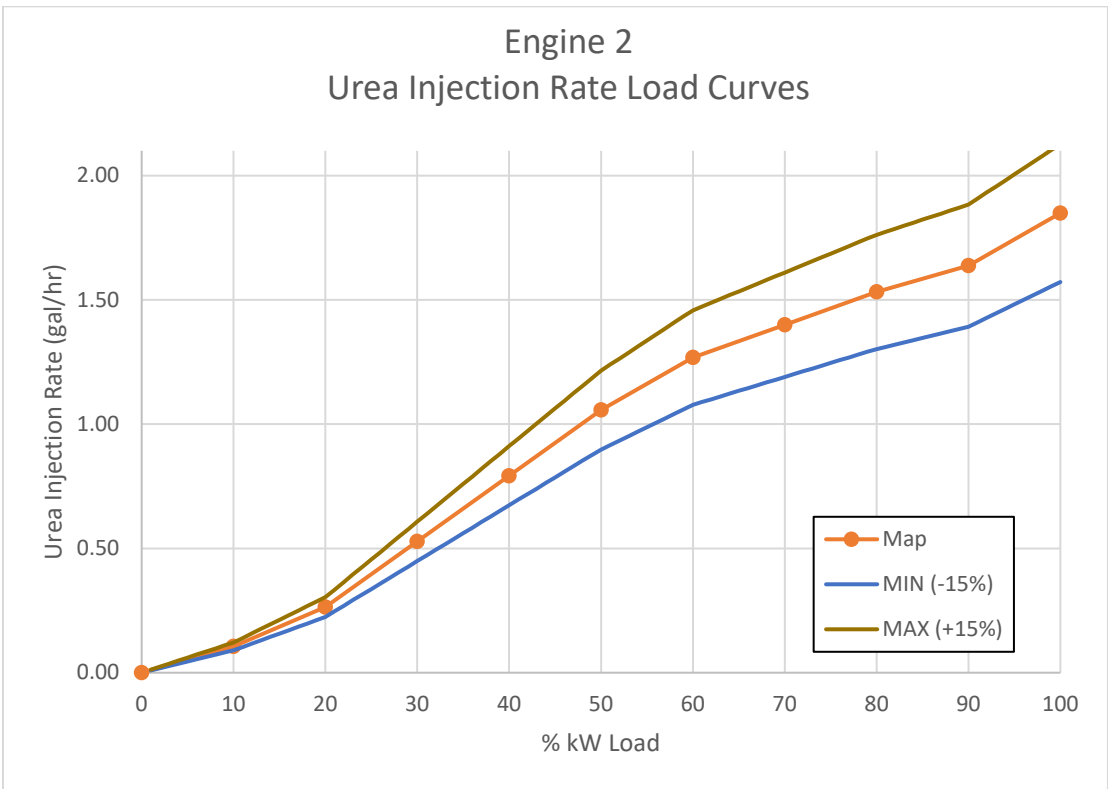
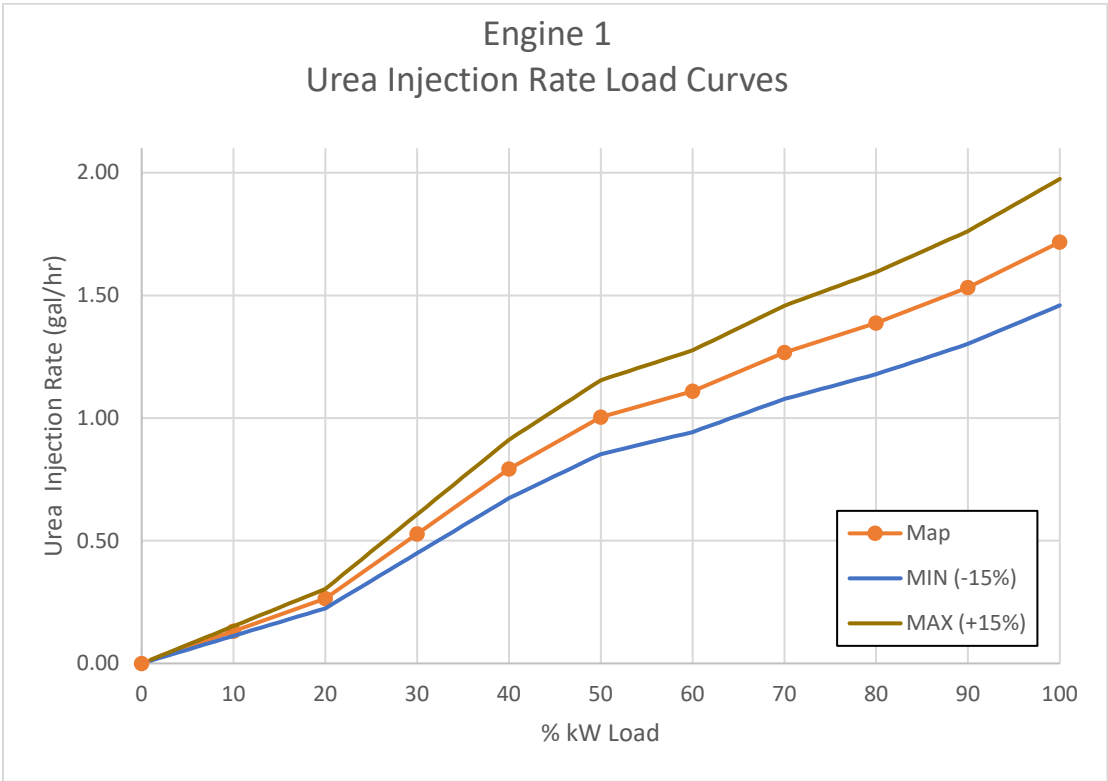
Definitions of Start-up, Shutdown and Normal Operation:

Stage	Description
1 ^(a)	Offline ends and start-up begins when fuel flow starts. Start-up ends and normal operation begins when the urea injection begins.
2	Normal Operation ends and shutdown begins when the power breaker goes to an open state.
3 ^(b)	Shutdown ends and offline begins when the fuel flow stops.

^(a) The engine's startup time will be minimized to a period needed for appropriate and safe loading of the engine, not to exceed 1 hour.

^(b) The engine's shutdown time will be minimized to a period not to exceed 30 minutes.

Image of Load Curves Established during the November 21, 2019 Performance Test



SEPTA Robert's Complex
Potential Emissions
January 4, 2022 Revision

	Facility	Operating Hours	Fuel Usage	Units	Potential Emissions (ton/year)						
					NOx	VOC	TSP	PM10	CO	SOx	Pb
G-01 - GE Generator Engine #1	Midvale	8,068	286.33	MMscf/yr	10.87	8.15	0.04	0.04	13.59	0.09	0.00
G-02 - GE Generator Engine #2	Midvale	8,068	286.33	MMscf/yr	10.87	8.15	0.04	0.04	13.59	0.09	0.00
COMB-01 - Cleaver-Brooks CB500-100 Boiler	Roberts	700	20.92	Mgal/yr	0.21	0.00	0.02	0.02	0.05	0.30	1.32E-05
COMB-02 - Cleaver-Brooks CB500-200 Boiler	Roberts	700	41.85	Mgal/yr	0.42	0.01	0.04	0.05	0.10	0.59	2.64E-05
COMB-03 - Cleaver-Brooks CB500-200 Boiler	Roberts	700	41.85	Mgal/yr	0.42	0.01	0.04	0.05	0.10	0.59	2.64E-05
COMB-04 - H.B. Smith Boiler	Roberts	700	2.61	Mgal/yr	0.03	0.00	0.00	0.00	0.01	0.04	1.64E-06
COMB-05 - A.O. Smith BTP150-720 Boiler	Midvale	2,300	1.62	MMscf/yr	0.08	0.00	0.01	0.01	0.07	0.00	4.06E-07
COMB-06 - A.O. Smith BTP140-720 Boiler	Midvale	2,300	1.62	MMscf/yr	0.08	0.00	0.01	0.01	0.07	0.00	4.06E-07
COMB-07 - Kewanee Boiler #1: Natural Gas	Midvale	200	1.94	MMscf/yr	0.13	0.01	0.01	0.01	0.09	0.05	2.71E-06
COMB-07 - Kewanee Boiler #1: Fuel Oil	Midvale	50	3.54	Mgal/yr							
COMB-08 - Kewanee Boiler #2: Natural Gas	Midvale	200	1.94	MMscf/yr	0.13	0.01	0.01	0.01	0.09	0.05	2.71E-06
COMB-08 - Kewanee Boiler #2: Fuel Oil	Midvale	50	3.54	Mgal/yr							
COMB-09 - Smith 19 Series-4 Boiler	Midvale	2,300	0.81	MMscf/yr	0.04	0.00	0.00	0.00	0.03	0.00	2.02E-07
COMB-10 - Smith 19 Series-4 Boiler	Midvale	2,300	0.81	MMscf/yr	0.04	0.00	0.00	0.00	0.03	0.00	2.02E-07
COMB-11 - Hotsy S5735-3 Pressure Washer	Midvale	4,000	2.58	MMscf/yr	0.13	0.01	0.01	0.01	0.11	0.00	6.44E-07
COMB-12 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
COMB-13 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
COMB-14 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
COMB-15 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
COMB-16 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
COMB-17 - Reznor Unit Heater	Midvale	1,200	0.47	MMscf/yr	0.02	0.00	0.00	0.00	0.02	0.00	1.18E-07
IS-1 - Hydrotherm Boiler	Midvale	1,200	0.88	Mgal/yr	0.01	0.00	0.00	0.00	0.00	0.01	5.56E-07
IS-2 - Bradford White Boiler	Midvale	1,200	0.90	Mgal/yr	0.01	0.00	0.00	0.00	0.00	0.01	5.67E-07
IS-3 - AO Smith Boiler	Midvale	1,200	0.14	MMscf/yr	0.01	0.00	0.00	0.00	0.01	0.00	3.53E-08
IS-4-12 - Reznor Space Heaters	Liberty	1,200	1.01	Mgal/yr	0.08	0.00	0.01	0.01	0.02	0.11	5.10E-06
IS-13 - Midvale Trans. Bldg. EG	Midvale	100	0.05	MMscf/yr	0.13	0.00	0.00	0.00	0.01	0.00	0.00
IS-14 - Robert's Yard EG	Roberts	100	616	gal LP/yr	0.13	0.00	0.00	0.00	0.01	0.00	0.00
CU-SB - Paint Booth Heater	Midvale	2,000	3.47	MMscf/yr	0.17	0.01	0.01	0.01	0.15	0.00	8.68E-07
EG-01 - CAT Emergency Generator	Midvale	25	1.85	Mgal/yr	0.41	0.01	0.01	0.01	0.11	0.03	0.00E+00
WE-01 - Miller Engine-Driven Welder	Liberty	0	0.00	gal/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00
AC-01 & BLAST-01 - Sandblasting	Liberty	200	918	gal/yr	0.28	0.02	0.60	0.60	0.06	0.02	0.00E+00
Stage 2-01 - Gasoline Tank	Midvale	-	-	-	-	0.01	-	-	-	-	-
PW-01 - Facility Parts Washers	Facility-Wide	-	-	-	-	0.65	-	-	-	-	-
SB-01 - Paint Booth	Midvale	-	-	-	-	1.86	0.00	0.00	-	-	-
TANK-01 - Windshield Washer Fluid Tank	Midvale	-	-	-	-	0.01	-	-	-	-	-
Total:	-	-	-	-	24.82	18.95	0.89	0.92	28.42	1.98	8.27E-05

Engine Natural Gas Limit: 572.67 MMft³/year
All Other Natural Gas Limit: 17.81 MMft³/year
All Other Fuel Oil Limit: 117.09 Mgal/year
Other Emergency Generator Limit for Testing: 100 hours/year
Sandblasting Limit: 200 hours/year