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PROJECT REPORT
Title V Operating Permit Application

Pace International, LLC / Wapato, WA

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1. EXECUTIVE SUMMARY

Pace International LLC (Pace) produces cleaners, fungicides, drench, and coatings for agricultural products and is located at 5661 Branch Rd in Wapato, WA 98951. Pace is within the Yakama Indian Reservation and is regulated by the U. S. Environmental Protection Agency (EPA) for air quality permitting.

Pace currently operates under Non-Title V Air Quality Operating Permit Number R10NT500200, issued by EPA Region 10 on December 4, 2006. This permit includes synthetic minor limits and mass balance recordkeeping requirements for volatile organic compounds (VOC) and hazardous air pollutants (HAP) intended to keep the facility's potential to emit (PTE) below the Title V major source thresholds in 40 CFR 71. On April 3, 2019, Pace submitted a synthetic minor permit application to update the permit type for the facility to EPA's current synthetic minor permitting program. Today's application formally withdraws the April 3, 2019, synthetic minor permit application and replaces it with a Title V operating permit application.

In this application, Pace is requesting that the synthetic minor limits for the Wapato facility, along with the associated mass balance recordkeeping and reporting requirements, be removed. After removal of these limits, Pace requests that the facility be considered as a major source under the Title V operating permit program, as the PTE of VOC may exceed the respective major source threshold of 100 tons per year.[1] This permit application does not involve the permitting of any new emission units at the site, but is instead for the purpose of reducing the recordkeeping burden associated with the mass balance calculation used with the synthetic minor permits.

This application serves as the required initial Title V operating permit application for the facility. In addition to providing the required content of a Title V permit application, the application also provides a description of the current emission sources at the Wapato facility to ensure that the operating permit will correctly reflect current operations at the facility. As noted in previous discussions between Pace and EPA, some emission units listed in the Non-Title V Operating permit no longer match the equipment currently on-site due to changes at the site since that permit was issued in 2006.

This application includes the following contents:

- Section 2: Facility Description
- Section 3: Potential To Emit
- Section 4: Regulatory Applicability Review
- Appendix A: Emission Calculations
- Appendix B: Compliance Demonstration
- Appendix C: Application Forms
- Appendix D: Current Non-Title V Air Quality Operating Permit

[1] Due to the nature of the process at the Wapato facility, PTE is difficult to estimate precisely. This application includes an estimated value for the PTE that serves as a conservative upper bound. In future permitting exercises, Pace may choose to revisit the values used in this application.

2. FACILITY DESCRIPTION

Pace is located within the Yakama Indian Reservation at 5661 Branch Road, Wapato, WA. Pace produces cleaners, fungicides, drench, and coatings for agricultural products. Of these products, ShieldBrite chemicals are produced at the highest volume. These are post-harvest coatings manufactured in a batch process where shellac or carnauba wax is mixed with several proprietary ingredients. All chemical production at Pace is designated as the "ShieldBrite process" for the purpose of this application, even if final products do not carry the ShieldBrite name. None of the compounds that Pace produces are polymers. The following sections detail the sources of air emissions at Pace, as well as insignificant activities.

2.1 Sources in Current Permit No Longer in Operation at Pace

Several emission sources (described below) are listed in the Wapato facility's current Non-Title V Air Quality Operating Permit that are no longer in operation at the site. These emission sources should be excluded from the Title V permit.

2.1.1 B6 and B7 Boilers

The B6 and B7 boilers were removed from the Wapato facility in 2016 and replaced with the B8 boiler. This replacement, along with an evaluation of new source review (NSR) applicability was discussed with EPA Region 10 in correspondence and meetings in 2017. EPA's requested outcome from those discussions was for the change to be addressed in a new synthetic minor permit application for the facility, with the outcome being a new permit that correctly reflected the current boiler at the site.[2] Further discussion between EPA Region 10 and Pace in 2020 suggested that Pace pursue a Title V operating permit instead of a synthetic minor permit.[3] Today's Title V operating permit application supersedes the previous synthetic minor permit application and details facility changes since the current Non-Title V permit issuance, including the replacement of the B6 and B7 boilers with the B8 boiler.

2.1.2 Cascade Facility

Pace divested itself of the Cascade facility in December 2012. The Cascade facility is no longer part of the Pace stationary source.

2.2 Existing Sources Still in Operation

2.2.1 ShieldBrite Process

The ShieldBrite process releases VOC and a small amount of HAPs. The ShieldBrite process takes place in various process units throughout the facility including: storage tanks, mixing tanks, sediment ponds, laboratory activities, and other miscellaneous evaporative sources. VOC and HAP emissions are estimated based on an emission factors developed from a conservative facility-wide mass balance, rather than intensive unit-by-unit calculations. Pace has calculated annual facility-wide actual VOC and HAP emissions from the ShieldBrite process based on the mass balance specified in the current Non-Title V permit.

[2] This approach was outlined in a November 9, 2017 email from Doug Hardesty, EPA, to Tania Reynolds, Pace.

[3] Discussions took place between Pace and EPA Region 10 onsite at the Wapato facility on March 12, 2020.

Using actual emissions data from past years, Pace has developed conservative emission factors relating VOC and HAP emissions to the ShieldBrite process. These emission factors are used to estimate the PTE of VOC and HAP of the facility.

Facility production personnel estimate that the maximum potential ShieldBrite process production rate is equal to the 2015 production rate (a historical high production year) multiplied by a factor of 1.5. This maximum production rate is used in PTE calculations. The maximum historic ratios of actual emissions to actual production are conservatively increased to obtain emission factors for PTE calculations. The ShieldBrite process emission factors and PTE, and a comparison to 2019 actual emissions, are detailed in Table 2-1 below. The emission factors and production rate used to develop the PTE in this application should be considered conservative upper bounds for calculating emissions. This PTE estimate serves the purpose of this application (i.e., showing applicability of the Title V program), but likely overestimates the PTE of the source as evidenced by actual emissions being much lower than this value. In future permitting exercises, Pace may choose to revisit the PTE calculation to remove some of the conservatism.

Table 2-1. ShieldBrite Process Emission Factors and Potential To Emit

Parameter	2019 Actual	PTE
ShieldBrite Process Production Rate (gallons/year)	1,136,780	2,400,000
ShieldBrite Process Emission Factors		
VOC (lb/gallon)	0.08	0.15
Total Combined HAP (lb/gallon)	0.0001	0.005
ShieldBrite Process Emissions		
VOC (tpy)	46.31	180.0
Total Combined HAP (tpy)	0.05	6.0

The ShieldBrite process in 2019 had a small amount of HAP due to laboratory activities. For years 2010 - 2019, 1.66 tpy was the greatest annual emissions of total combined HAP from the ShieldBrite process. This occurred in 2014, and the 2014 actual emission factor was 0.0023 lb/gallon for total combined HAP from the ShieldBrite process.

2.3 Emission Units Not Included in Current Permit

2.3.1 B8 Boiler

The B8 Boiler has a maximum heat input capacity of 31.7 MMBtu/hr and is propane-fired. Pace provided emissions-related information in an NSR applicability determination request filed on June 19, 2017. The only change in potential emissions since that request is that the boiler now uses propane alone as a fuel source; Pace has no ability to use diesel in this boiler.

Emissions from the B8 boiler are calculated using a combination of AP-42 emission factors and vendor emission data. The PTE assumes 8,760 hours of operation and firing at the maximum heat input listed for the boiler.

Pace proposes to include permit provisions allowing the use of a temporary replacement boiler in the case of the B8 boiler undergoing repairs. This operating scenario occurred in November 2019 and was approved by EPA Region 10, as outlined in an October 8, 2019 letter from Region 10 to Pace, which is included in Appendix E. The letter explains that projects, such as the boiler replacement that do not involve emission

increases that exceed the tribal minor new source review permitting program thresholds do not require a construction permit. While this applicability approach would apply in any case, for clarity in describing possible future boiler replacements at Pace and allowed activities, Pace proposes that the approval conditions in the letter be stated explicitly in the permit, as specified below:

> *Temporary replacement boiler: Pace may install a temporary replacement boiler during maintenance of the B8 boiler without requiring a tribal minor new source review permit if the boiler replacement project does not result in emission increases, on a PTE-to-PTE basis, that exceed the tribal minor new source review permitting program thresholds (see Table 1 to 40 CFR 49.153).*

2.3.2 Fogging Chemical Testing System

Pace operates an enclosed fogging system to test fogging chemicals produced onsite and fogging chemical application equipment. Approximately 618 kg of fogging chemicals are tested annually. The chemicals begin as a liquid fogging agent, then, are aerosolized and sprayed onto food items or objects in the enclosure. PTE calculations assume that 100% of the fogging chemicals remain in the vapor exhaust and are emitted to the atmosphere, despite actual conditions where some of the chemicals are deposited on the walls and food items in the enclosure.

The assumption of no deposition differs from the calculation methodology used in previous correspondence with EPA, which assumed 50% deposition of the chemicals onto the walls and food items within the enclosure. A significant amount of the chemicals are deposited, however, there is uncertainty in the actual quantities and the degree of variability. This application conservatively assumes that 0% of the chemicals are deposited, to account for such uncertainty.

The gaseous fogging chemicals are ducted to a propane-fired afterburner that combusts the chemicals before release to the atmosphere. A packed bed wet scrubber is attached to the afterburner and provides a quench barrier between the process and the afterburner. The scrubber does not contribute pollutants of any kind relevant to calculating potential emissions from the fogging enclosure and afterburner.

The afterburner is a small custom-designed unit with a capacity of 1.5 MMBtu/hour. It operates using propane and has an estimated 98% destruction efficiency of the entering material. AP-42 Table 1.5-1 lists the heat content of propane as 91.5 MMBtu/1000 gallons, which is used in emission calculations for all propane-fired sources onsite. The fogging system and afterburner operate for an estimated 800 hours/year. However, the PTE calculations in this application conservatively assume that the unit operates 8760 hours/year. Additionally, since there is currently no air permit condition requiring Pace to operate the afterburner, the control the afterburner provides is not accounted for in PTE calculations. The PTE accounts for both the emissions from propane combustion from the afterburner and uncontrolled VOC emissions from the fogging chemical testing.

Annual emissions for NO_X from the afterburner are calculated per the following equation:

$$NO_X = \frac{Emission\ Factor\ \left(13\frac{lb\ NO_X}{Mgallons}\right) \times MaximumHeat\ Input\ (1.5\frac{MMBtu}{hr}) \times 8760\frac{hr}{yr}}{Heat\ Content\ of\ Propane\ (91.5\frac{MMBtu}{Mgallons}) \times 2000\frac{lb}{ton}} = 0.93\ tpy$$

Annual uncontrolled VOC emissions from the fogging chemical operations are calculated per the following equation:

$$VOC = \frac{\frac{618\ kilograms \times (100\%\ of\ materials\ in\ vapor\ exhaust)}{800\ hours\ testing} \times 8760 \frac{hours}{year} \times 2.204\ \frac{lb}{kg}}{2000 \frac{lb}{ton}} = 7.46\ tpy$$

A summary of the emissions from the fogging system can be found in Appendix A.

2.3.3 Process Wastewater Sump Emissions

The process wastewater sump collects wastewater from drain trenches in the manufacturing building. The wastewater is then routed to the evaporation/sediment ponds that are listed in the current permit's Technical Support Document. Emissions from the wastewater sump are not anticipated to change based on the facility changes described in this application, therefore, the PTE calculations are unchanged.

The main emissions from the wastewater sump are VOCs, with only trace HAPs. The HAP emissions were determined by applying the HAP/VOC ratio from the mass balance calculations to the VOC emissions calculated for the sump. The wastewater contains chemicals from the entire facility and is produced from cleaning and washing onsite equipment and containers.

Exhaust fans above the sump draw air through the trenches and help ventilate the building. These fans operate continuously during manufacturing and, therefore, draw vapor emissions from the sump liquid in at a steady rate. The content of VOC in the wastewater stream was determined by testing the Total Organic Carbon (TOC) in the storage pond that is actively receiving wastewater. Testing for TOC was performed by Cascade Analytical on December 12, 2018. TOC in the wastewater was 400 mg/L, which corresponds to a weight fraction of 0.04%.

VOC emissions from the wastewater sump are determined through a method developed by the EPA[4] that estimates the rate at which liquid evaporates from the surface of a pool that is at or near ambient temperature. Note that because the emissions from the wastewater sump are not subtracted from the mass balance equation for the ShieldBrite process emissions, these calculations conservatively "double-count" the emissions by including them in both the mass balance and wastewater sump calculations. The equation takes the following form:

$$E = \frac{0.284 * u^{0.78} * M^{0.667} * A * P}{R * T}$$

Where:

- E = evaporation rate, in lb/min
- u = wind speed above the pool liquid surface, in meters/second
- M = molecular weight of the pool liquid, in grams/gmol
- A =surface area of the pool liquid, in ft^2
- P = vapor pressure of the pool liquid at the pool temperature, in mm Hg
- T = temperature of pool liquid, in °K
- R = Universal Gas Constant = 82.05 (atm * cm^3) / (gmol * °K)

The vapor pressure of the liquid is assumed equivalent to water due to the low weight fraction of all other components. While the overall molecular weight of the liquid is similar to water, the emissions would primarily be the VOC components. Therefore, the molecular weight of morpholine at 87.12 g/mol is used since this compound makes up a significant fraction of the VOC emissions. A temperature of 30 °C is used

[4] Equation D-1 in "Risk Management Program Guidance for Offsite Consequence Analysis", April 1999.

for the pool temperature based on the average maximum temperature for the area (reference is in Yakima, WA). The surface area for the sump is measured at 160 ft^2, while the wind speed is based on the operation of fans adjacent to the sump. There is one fan for each of the two exhaust stacks leading from the sump. Each fan has a flow rate of 7200 cfm and diameter of 15 inches, which yields a wind speed of 29.8 m/s. While the actual wind speed over the water in the sump is likely much lower, this value (based on the minimum cross-sectional area through which the air must travel) is the highest possible wind speed based on the available fan and stack dimensions.

There is a second wastewater sump in the raw material warehouse that does not add to the PTE for the facility. This sump collects and transfers wastewater from a container washing station to the wastewater pond, and does not utilize fans or ventilation of any kind. Any potential VOC emissions are fugitive emissions, and are accounted for in the mass balance calculations.

2.3.4 Emergency Generators

The Pace facility operates two emergency generators: a 25 kW unit that supports the server room, and a 50 kW unit that serves the laboratory instruments.[5] Both are propane-fired and have a maximum use of 500 hours/year, which is used as the basis for the PTE calculations. There are no proposed changes to the emergency generators as part of this application.

The manufacturer-supplied generator fuel requirements and consumption rate, along with propane density and heat content provide the basis for emission calculations. The emission factors for natural gas are used in place of propane since emission factors are not available for propane internal combustion units in AP-42 Chapter 3. Emission factors for 4-stroke rich-burning engines are used based on the fuel-to-air ratio provided on the generator specification sheets.

An example showing CO emissions calculations for the server room backup generator is given below. According to the manufacturer specifications, this generator has a maximum fuel consumption of 166 ft^3/hour of propane when primed. This equation also includes a conversion factor between cubic feet and gallons, which is based on standard volumes and do not rely on the properties of the fuel.

$$CO = \frac{Maximum\ Fuel\ Input\ \left(166\frac{scf\ propane}{hr}\right) \times 91.5\frac{MMBtu}{10^3 gallon} \times EmissionFactor\ (3.51\frac{lb\ CO}{MMBtu}) \times 500\frac{hours}{year}}{3.69 * 10^4\frac{scf\ propane}{10^3 gallon} \times 2000\frac{lb}{ton}}$$

$$= 0.36\ tpy$$

All emissions from criteria pollutants can be found in the emission calculations in Appendix A.

2.4 Insignificant Activities

Insignificant activities meet the criteria in 40 CFR 71.5(c)(11) based on having PTE of less than 2 tpy of any regulated air pollutant, or falling within categorical definitions. These insignificant activities are detailed below.

[5] The 25 kW unit is a 25 kW generator equiped with a 47 brake horsepower (BHP) engine. The 50 kW unit is a 50 kW generator with an 85.3 BHP engine.

2.4.1 Hot Box

The hot box is a propane-fired process heater used to physically reduce the viscosity of various liquids. This source has not been included in previous permit applications and is added to this application to accurately describe all of the equipment currently operating onsite. No formal manufacturer-provided emissions information exists for the hot box, and it is not currently feasible to measure the rate of propane supplied to the unit. The stack exhaust parameters were measured by site personnel to provide a basis of data for estimating the heat input capacity of the unit. The following was recorded:

- Flow rate of 135 acfm
- Temperature of 106 ^{o}F
- Stack diameter of 6 inches

The hot box heat input was estimated from the above parameters, resulting in an estimate of 0.59 MMBtu/hr. Calculations are included in Appendix A. The calculated heat input was conservatively doubled to 1.2 MMBtu/hr for estimating the PTE, to account for uncertainties in exhaust data and calculations. The annual potential emissions are expected to be well below the insignificant emission unit thresholds in 40 CFR 71, as further detailed in the emission calculations in Appendix A.

2.4.2 Facility Laboratory

Emissions from chemical use in the facility laboratory are low, but were not specifically identified in the existing Non-Title V Permit. Potential emissions from chemical use in the facility laboratory are accounted for as part of the potential emissions for the ShieldBrite process. As noted previously, the ShieldBrite process takes place in various process units throughout the facility including: storage tanks, mixing tanks, sediment ponds, laboratory activities, and other miscellaneous evaporative sources.

However, Pace has historically tracked actual emissions specific to the laboratory as separate from other ShieldBrite process equipment. For the purposes of this application, actual laboratory emissions are included in the totals for the SheildBrite process. Note that actual emissions specific to the laboratory are far below the insignificant emission unit emission thresholds.[6]

2.4.3 Categorically Insignificant Sources

Pace conducts various operations that are considered insignificant based on the definitions in §71.5(c)(11)(i). These operations include:

- Mobile sources.
- Air-conditioning units used for human comfort that are not subject to applicable requirements under title VI of the Act and do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process.
- Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process.
- Heating units used for human comfort that do not provide heat for any manufacturing or other industrial process.
- Noncommercial food preparation.
- Consumer use of office equipment and products.

[6] Actual 2019 laboratory emissions were 0.05 tons of HAP. The insignifficant unit threshold in 40 CFR 71.5(c)(11) is 2 tpy of any regulated air pollutant.

- Janitorial services and consumer use of janitorial products.
- Internal combustion engines used for landscaping purposes.

3. POTENTIAL TO EMIT AND REMOVAL OF SYNTHETIC MINOR LIMITS

The current Non-Title V permit includes synthetic minor emissions limits and associated requirements intended to keep the facility's PTE below the Title V major source thresholds in 40 CFR 71. This application requests removal of the synthetic minor emission limits, and associated requirements as specified below.

- Potential to Emit Limits and Work Practice Requirements
  - Boiler Fuel Sulfur Limit (Non-Title V Permit condition 2.1)
  - ShieldBrite VOC Mass Balance Emission Limit (Non-Title V Permit condition 2.2)
  - Facility-Wide HAP Emission Limit (Non-Title V Permit condition 2.3)

- Monitoring and Recordkeeping Requirements
  - Boiler Fuel Sulfur Records (Non-Title V Permit condition 3.1)
  - VOC Emission Records (Non-Title V Permit condition 3.2)
  - HAP Emission Records (Non-Title V Permit condition 3.3)

- Reporting Requirements
  - Fuel sulfur records (Non-Title V permit condition 4.1.1)
  - VOC emissions records (Non-Title V Permit condition 4.1.2)
  - HAP emissions records (Non-Title V Permit condition 4.1.3)

Additionally, Pace requests removal of the following permit conditions related to the Cascade Facility, which is no longer operated by Pace:

- Cascade Facility Baghouse Requirement (Non-Title V Permit condition 2.4)
- Cascade Facility Baghouse Records (Non-Title V Permit condition 3.4)
- Cascade Facility Baghouse Reporting (Non-Title V Permit condition 4.1.4)

The below Table 3-1 details the total facility PTE after removal of the synthetic minor limits. The PTE is above the Title V operating permit major source threshold of 100 tons per year for VOC.

Table 3-1. Potential To Emit After Removal of Synthetic Minor Limits

Pollutant (All Rates Given in Tons/Year)	Fogging Chemicals	Emergency Generators	Waste-water Sump[1]	B8 Boiler[2]	ShieldBrite Process[3]	Hot Box	Total	Title V Threshold	Below Threshold?
Particulate Matter (PM)	0.05	2.60E-03	--	1.06	--	0.04	1.12	100	Yes
Particulate Matter <10 microns (PM_{10})	0.05	2.60E-03	--	1.06	--	0.04	1.12	100	Yes
Particulate Matter < 2.5 microns ($PM_{2.5}$)	0.05	2.60E-03	--	1.06	--	0.04	1.12	100	Yes
Sulfur Dioxide (SO_2)	1.44E-03	1.61E-04	--	0.15	--	1.05E-03	0.15	100	Yes
Nitrogen Oxides (NO_X)	0.93	6.22E-01	--	14.62	--	7.47E-01	16.18	100	Yes
Volatile Organic Compounds (VOC)	7.51	8.12E-03	1.70	1.15	180.0	5.74E-02	190.37	100	**No**
Carbon Monoxide (CO)	0.54	9.62E-01	--	5.30	--	4.31E-01	6.80	100	Yes
Hazardous Air Pollutants[4] (HAP)	negligible	8.89E-03	0.06	--	6.00	--	6.07	10	Yes

1 The HAP total for the wastewater sump is estimated by assuming that all HAP and VOC originate from the ShieldBrite process. Wastewater sump VOC is calculated in Appendix A, Table A5-1, and the ratio of HAP/VOC for the ShieldBrite process is used to estimate the HAP emissions from the wastewater sump.

2 PM emission factors are not listed in AP-42 for the B8 Boiler, and are being assumed equal to those listed for PM_{10} and $PM_{2.5}$

3 Totals for the ShieldBrite process are based on historic actual emissions and production rates, and increased by a factor of safety. Actual emissions from the ShieldBrite process are expected to be much lower than this potential emission rate.

4 The PTE shown is emissions of all HAP species combined. Emission rates for individual HAP are less than or equal to the PTE shown for combined HAP. Due to the low HAP totals for the facility, only the threshold for individual HAP is shown. The threshold for total facility HAP is 25 tons/year.

4. REGULATORY APPLICABILITY REVIEW

The purpose of this section is to identify all potentially applicable air pollution control requirements, in accordance with 40 CFR Part 71 §71.5(c)(4)-(7). The following subsections describe the potentially applicable regulations and any applicable compliance requirements.

4.1 New Source Performance Standards

New Source Performance Standards (NSPS) are codified in 40 CFR Part 60 and apply to sources of criteria air pollutants.

4.1.1 NSPS Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

The B8 Boiler at the Wapato facility was constructed in 2016 and is rated at 31.7 MMBtu/hr heat input capacity. Per 40 CFR 60.40c(a) all steam generating units constructed, modified, or reconstructed after June 9, 1989 and between 10 and 100 MMBtu/hr heat input capacity are subject to NSPS Subpart Dc. Therefore, the B8 boiler is subject to NSPS Subpart Dc. Because the boiler fires only propane, it is not subject to the emission standards for SO_2 and particulate matter in Subpart Dc. The only applicable requirements for the B8 boiler are the initial notifications required under 40 CFR 60.48c(a) and § 60.7(a)(1) and (a)(3), and the monthly fuel use recordkeeping required under 40 CFR 60.48c(g). Pace is in compliance with these requirements and will continue to comply, as specified in the compliance demonstration in Appendix B.

4.1.2 NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Pace has several volatile organic liquid storage vessels onsite. Per 40 CFR 60.110b(a) and (b), Subpart Kb applies to vessels with volume greater than 75 m^3 (19,813 gal) with a maximum true vapor pressure greater than 15 kPa; or volume greater than 151 m^3 (39,890 gal) with maximum true vapor pressure greater than 3.5 kPa. The largest tank onsite has a nominal capacity of 20,000 gal and contains a mixture of citric acid, water, and traces of other compounds. Pure citric acid has a melting point of 307 °F,[7] and it has a minimal partial vapor pressure in water solutions. Therefore, the citric acid tank is not subject to Subpart Kb. All other tanks at Pace have a volume less than 75 m^3, therefore, no tanks at the facility are subject to Subpart Kb.

4.1.3 NSPS Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The propane-fired emergency generators at Pace are collocated with the server room and the laboratory and are rated at 25 and 50 kW, respectively. These generators are powered by engines with rated mechanical power of 47 and 85.3 brake horsepower (BHP). The 25 kW unit was installed at the facility in October 2007 and has not been subsequently modified or reconstructed. Subpart JJJJ applies to owners and operators of stationary spark ignition internal combustion engines (SI ICE) for which construction commenced after June 12, 2006 and that are manufactured on or after January 1, 2009 for emergency engines with a maximum power greater than 19 kW, per §60.4230(a)(4)(iii). The 25 kW unit was

[7] https://pubchem.ncbi.nlm.nih.gov/compound/Citric-acid#section=Melting-Point, accessed September 29, 2020.

manufactured prior to January 1, 2009, therefore, the provisions of NSPS Subpart JJJJ are not applicable to the 25 kW emergency generator.

The 50 kW unit was installed in 2013 manufactured after 2009 and is subject to NSPS Subpart JJJJ per 40 CFR 60.4230(a)(4)(iv). The applicable requirements include emission standards under 40 CFR 60.4233(c); hours of operation monitoring under 40 CFR 60.4237(c); certification, operation, and maintenance requirements and recordkeeping under 40 CFR 60.4237(c); operational requirements under 40 CFR 60.4243(d); and notification, reporting, and recordkeeping requirements under 40 CFR 60.4245(a) and (b). Pace is in compliance with NSPS Subpart JJJJ and will continue to comply, as specified in the compliance demonstration in Appendix B.

4.2 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are codified in 40 CFR Part 61 and 63 and apply to sources of HAP. None of Part 61 Subparts are potentially applicable to Pace. The subsections below detail the applicability of Part 63 regulations.

4.2.1 NESHAP Subparts F and G – National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

After removal of the synthetic minor limitations for HAP, the PTE for HAP at the Wapato facility will remain below the major source thresholds for NESHAP and Title V requirements. Pace is not a major source of HAP and is, therefore, not subject to Subparts F and G per §63.100(a) and (b)(3).

4.2.2 NESHAP Subparts H and I – National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

The Wapato facility is not a major source of HAP and is, therefore, not subject to Subparts H and I per §63.190(b).

4.2.3 NESHAP Subpart YY – National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards

Pace does not conduct any of the activities listed in Table 1 to §63.1100(a) and is, therefore, not subject to Subpart YY.

4.2.4 NESHAP Subpart EEEE – National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

The Wapato facility is not a major source of HAP and is, therefore, not subject to Subpart EEEE per §63.2334(a).

4.2.5 NESHAP Subpart FFFF – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

The Wapato facility is not a major source of HAP and is, therefore, not subject to Subpart FFFF per §63.2435(a).

4.2.6 NESHAP Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The propane-fired emergency generators at Pace are considered new sources under Subpart ZZZZ per §63.6585 and §63.6590(2)(iii) since the construction of each commenced after June 12, 2006 and Pace is an area source of HAP. Per §63.6590(c), the only applicable requirement under Subpart ZZZZ is to comply with NSPS Subpart JJJJ as applicable. NSPS JJJJ applicability is detailed in Section 4.1.3 above.

4.2.7 NESHAP Subpart HHHHH – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing

The Wapato facility is not a major source of HAP and is, therefore, not subject to Subpart FFFF per §63.7985(a)(1).

4.2.8 NESHAP Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

The Wapato facility is not a major source of HAP and is, therefore, not subject to Subpart DDDDD per §63.7485.

4.2.9 NESHAP Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

The B8 Boiler is potentially subject to Subpart JJJJJJ, as Pace is an area source of HAP. The B8 Boiler, however, only combusts gaseous fuels and is, therefore, not subject to Subpart JJJJJJ regulations per §63.11195(e).

4.2.10 NESHAP VVVVVV – National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

The Wapato facility is an area source of HAP that manufactures chemicals and is potentially subject to Subpart VVVVVV. This subpart applies to facilities with a chemical manufacturing process unit (CMPU) that contains a HAP listed in Table 1 of the subpart (Table 1 HAP), per §63.11494(a)(2). Pace does not have any Table 1 HAP present in any CMPU onsite and anticipates that none will ever be present. However, Table 1 HAPs may be present in small quantities in the onsite laboratory. The laboratory activities are not subject to the subpart, however, because the following activities are exempted, per §63.11494(c)(3)-(5).

- Research and development facilities, as defined in CAA section 112(c)(7).
- Quality assurance/quality control laboratories.
- Ancillary activities, as defined in §63.11502(b).

The Wapato facility does not have Table 1 HAPs present in any activity subject to this subpart; therefore, the facility is not subject to Subpart VVVVVV.

4.2.11 NESHAP BBBBBBB – National Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry

A chemical preparations facility is defined in §63.11588 and must use a target HAP-containing product or intermediate used in the manufacture of other products. The specified target HAPs in this subpart are metal

compounds for chromium, lead, manganese, and nickel. Pace does not use any target HAP-containing products and is, therefore, not subject to Subpart BBBBBBB.

4.3 Federal Air Rules for Indian Reservations in Idaho, Oregon, and Washington

Federal Air Rules for Indian Reservations (FARR) in Idaho, Oregon, and Washington are codified in 40 CFR Part 49, §49.121 through §49.139. This set of regulations applies to Pace, as it is located on the Yakama Reservation in Washington. FARR regulations place limits on visible emissions, particulate matter emissions, sulfur content of fuels, and other sources of air emissions. The applicable regulations, regulatory citations, and compliance statuses of each rule are detailed in the compliance demonstration in Appendix B.

Pace does not conduct any open burning; woodwaste burning; wood products industry activities; agricultural, forestry, or silvicultural burning as described in §49.121 through §49.139. Therefore, the FARR regulations associated with these activities are not addressed in Appendix B.

4.4 Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring (CAM) rules are codified in 40 CFR Part 64. Per §64.2(a) CAM rules are applicable to Title V sources that use an emission control device to achieve compliance with any emission limitation or standard. Pace does not operate any emission control devices to achieve compliance with any emission limitation or standard. Therefore, Pace is not subject to CAM requirements.

4.5 Protection of Stratospheric Ozone

The requirements originating from Title VI of the Clean Air Act, *Protection of Stratospheric Ozone*, are contained in 40 CFR Part 82. These regulations apply to facilities that have Class I and Class II substances[8] in applicable quantities onsite, and that conduct activities listed in the subparts of 40 CFR Part 82. Pace operates multiple window-mounted air conditioning units for office comfort cooling and walk-in refrigeration units. Each appliance contains less than 50 pounds of refrigerant. These appliances are subject to the applicable regulations in Part 82 Subpart F: Recycling and Emissions Reduction. All such regulations and compliance status of each are outlined in the compliance demonstration in Appendix B.

[8] Class I and Class II substances listed in Appendix A and B of Subpart A of 40 CFR Part 82.

APPENDIX A. EMISSION CALCULATIONS

Table A1-1. Facility-Wide PTE

	Fogging Chemicals	Emergency Generators	Wastewater Sump[1]	B8 Boiler[2]	ShieldBrite Process[3]	Hot Box	Total	Title V Threshold	Below Threshold?
Pollutant (All Rates Given in Tons/Year)									
Particulate Matter (PM)	0.05	2.60E-03	--	1.06	--	0.04	**1.12**	100	Yes
Particulate Matter <10 microns (PM_{10})	0.05	2.60E-03	--	1.06	--	0.04	**1.12**	100	Yes
Particulate Matter < 2.5 microns ($PM_{2.5}$)	0.05	2.60E-03	--	1.06	--	0.04	**1.12**	100	Yes
Sulfur Dioxide (SO_2)	1.44E-03	1.61E-04	--	0.15	--	1.05E-03	**0.15**	100	Yes
Nitrogen Oxides (NO_X)	0.93	6.22E-01	--	14.62	--	0.75	**16.18**	100	Yes
Volatile Organic Compounds (VOC)	7.51	8.12E-03	1.70	1.15	180.0	5.74E-02	**190.37**	100	**No**
Carbon Monoxide (CO)	0.54	9.62E-01	--	5.30	--	0.43	**6.80**	100	Yes
Hazardous Air Pollutants (HAP)	negligible	8.89E-03	0.06	--	6.00	--	**6.07**	10	Yes

[1] The HAP total for the wastewater sump is estimated by assuming that all HAP and VOC originate from the ShieldBrite process. Wastewater sump VOC is calculated in Appendix A, Table A5-1, and the ratio of HAP/VOC for the ShieldBrite process is used to estimate the HAP emissions from the wastewater sump.

[2] PM emission factors are not listed in AP-42 for the B8 Boiler, and are being assumed equal to those listed for PM_{10} and $PM_{2.5}$

[3] Totals for the ShieldBrite process are based on historic actual emissions and production rates, and increased by a factor of safety. Actual emissions from the ShieldBrite process are expected to be much lower than this potential emission rate.

[4] The PTE shown is emissions of all HAP species combined. Emission rates for individual HAP are less than or equal to the PTE shown for combined HAP. Due to the low HAP totals for the facility, only the threshold for individual HAP is shown. The threshold for total facility HAP is 25 tons/year.

Table A2-1. ShieldBrite Process Emission Factors and Potential To Emit

Parameter	2019 Actual	PTE
ShieldBrite Process Production Rate[1] (gallons/year)	1,136,780	2,400,000
ShieldBrite Process Emission Factors[2]		
VOC (lb/gallon)	0.08	0.15
Total Combined HAP[3] (lb/gallon)	0.0001	0.005
ShieldBrite Process Emissions		
VOC (tpy)	46.31	180.0
Total Combined HAP (tpy)	0.05	6.0

[1] Facility production personnel estimate the maximum annual ShieldBrite process production rate to be 1.5 times the production rate in 2015 (a historical high production year).

[2] Maximum ratios of historic actual emissions to production are conservatively increased to allow for flexibility of plant operations

[3] The ShieldBrite process in 2019 had low emissions of HAP. For years 2010 - 2019, 1.66 tpy was the greatest annual emissions of total combined HAP from the ShieldBrite process. This occurred in 2014, and the 2014 actual emission factor was 0.0023 lb/gallon for total combined HAP from the ShieldBrite process.

Table A3-1. VOC Emissions from Use of Fogging Chemicals

Fogging materials remaining in vapor exhaust[1]	100%	
Destruction Efficiency[2]	0%	
Fogging material used[3]	618	(kg/yr.)
Total estimated testing time for fogging chemicals	800	(hours/year)
VOC Emissions from Fogging Chemicals	0.68	tpy
Chemical use/hour	0.77	(kg/hour)
Maximum VOC Emissions from Fogging Chemicals	7.46	tpy

[1] Some of the fogging materials deposit on the walls and food items in the enclosure during actual operations. However, it is conservatively assumed that no chemicals are deposited for the purpose of PTE calculations.

[2] For potential-to-emit calculations, no destruction efficiency is claimed since there is no enforceable requirement to operate the afterburner. Actual destruction efficiency is expected to be approximately 98% based on typical values for thermal oxidation devices.

[3] Engineering estimate for total mass of fogging chemicals used in testing

Table A3-2. Criteria Pollutants from Afterburner

Fogger Operating Hours [1]	8,760	(hr/yr.)
Afterburner heat input	1.5	(MMBtu/hr)
Heat content of propane[2]	91.5	(MMBtu/10^3 gal)
Propane use in afterburner	0.0164	10^3 gallons/hour

Pollutant	Emissions (lb/hr)	Emissions (tpy)	Emission Factor	Emission Factor Units	Emission Factor Source	Notes
Criteria Pollutants:						
Particulate Matter (PM)	0.01	0.05	0.7	lb/10^3 gallons	AP 42 Table 1.5-1	
Particulate Matter <10 microns (PM_{10})	0.01	0.05	0.7	lb/10^3 gallons	AP 42 Table 1.5-1	Assumed equal to PM.
Particulate Matter < 2.5 microns ($PM_{2.5}$)	0.01	0.05	0.7	lb/10^3 gallons	AP 42 Table 1.5-1	Assumed equal to PM.
Sulfur Dioxide (SO_2)	3.28E-04	1.44E-03	0.02	lb/10^3 gallons	AP 42 Table 1.5-1	Assumed equivalent sulfur content to natural gas
Nitrogen Oxides (NO_X)	0.21	0.93	13	lb/10^3 gallons	AP 42 Table 1.5-1	
Volatile Organic Compounds (VOC)	0.01	0.06	0.8	lb/10^3 gallons	AP 42 Table 1.5-1	Emission factor for TOC minus emission factor for methane
Carbon Monoxide (CO)	0.12	0.54	7.5	lb/10^3 gallons	AP 42 Table 1.5-1	
HAP:	negligible [3]	negligible [3]				

[1] Hours of use for the afterburner are based on potential-to-emit for the year, actual use of the afterburner is in the range of 800 hours/year

[2] AP-42 Table 1.5-1, footnote A

[3] No HAPs are listed in AP 42 Section 1.5 on external combustion for propane. No fogging or carrier chemicals appear on the EPA HAP list, which was checked against all chemicals Pace utilizes

Table A3-3. Total Criteria Pollutants from Fogging System

Pollutant	VOC from Fogging Chemicals (lb/hr)	Afterburner Emissions (lb/hr)	Total Emissions (lb/hr)	VOC from Fogging Chemicals (tons/year)	Afterburner Emissions (tons/year)	Total Emissions (tons/year)
Criteria Pollutants:						
Particulate Matter (PM)	--	0.01	1.15E-02	--	0.05	5.03E-02
Particulate Matter <10 microns (PM_{10})	--	0.01	1.15E-02	--	0.05	5.03E-02
Particulate Matter < 2.5 microns ($PM_{2.5}$)	--	0.01	1.15E-02	--	0.05	5.03E-02
Sulfur Dioxide (SO_2)	--	3.28E-04	3.28E-04	--	1.44E-03	1.44E-03
Nitrogen Oxides (NO_X)	--	0.21	0.21	--	0.93	0.933
Volatile Organic Compounds (VOC)	1.70	0.01	1.72	7.46	0.06	7.51
Carbon Monoxide (CO)	--	0.12	0.12	--	0.54	0.539
HAP:	--	negligible		--	negligible	

Table A4-1. Potential Emissions from Hot Box - Propane Combustion

Operating Hours		8,760	hr/year
Maximum Heat Input Capacity [1]		1.20	MMBtu/hr
Pollutant	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**(tpy)**
Particulate Matter <10 microns (PM_{10})[2]	0.00765	0.0092	0.040
Particulate Matter < 2.5 microns ($PM_{2.5}$)[2]	0.00765	0.0092	0.040
Sulfur Dioxide (SO_2)[3]	0.00020	0.00024	0.0011
Nitrogen Oxides (NO_X)[2]	0.142	0.17	0.75
Volatile Organic Compounds (VOC)[2]	0.0109	0.013	0.057
Carbon Monoxide (CO)[2]	0.0820	0.098	0.43

[1] Heat input was estimated from flow rate and temperature data, and then doubled for conservatism in PTE calculations as explained in Section 2 of the application report.

[2] Emission factors obtained from AP-42, Chapter 1.5 (Liquefied Petroleum Gas Combustion Table), Table 1.5-1.

[3] Emission factor based on 40 CFR 49.130(d)(8) limit on sulfur in fuels (1.1 gram per dry standard cubic meter) and assuming complete transformation to SO_2. Actual sulfur content in fuel varies and is less than or equal to the specified limit.

Table A5-1. VOC Emissions from Wastewater Sump

R - Universal gas constant	82.05	$atm \cdot cm^3/gmol \cdot K$
Volume flow rate of each fan	7200	cfm
Estimated stack diameter	15	inches
Fan cross-sectional area	1.227	ft^2

Windspeed Above Pool[1] (m/s)	Molecular Weight of Pool Liquid[2]	Pool Liquid Temperature[3] (K)	Concentration of VOC in sump[4] (mg/L)	Concentration of VOC in sump (wt.%)	Vapor Pressure of Pool Liquid[5] (mmHg)	Surface Area of Pool (ft^2)	Emissions (lb/hr)	Emissions (tpy)
29.8	87.12	303.54	400	0.04%	31.84	160	0.39	1.70

1 While the actual wind speed over the water in the sump is likely much lower than this value, this represents a minimum cross-sectional area through which the air must travel (based on the available fan and stack dimensions), and is therefore the highest possible wind speed

2 The molecular weight of morpholine is used to represent the MW of the VOC emissions. Of the 3 most common chemicals in the mass balance of chemicals used at the facility, morpholine has the largest molecular weight

3 This temperature is the average maximum value as listed by the TankESP program for nearby Yakima, WA

4 The concentration was measured directly from wastewater pond as TOC. This measurement took place in December 2018 and assumes that the concentration in the pond is representative of the concentration in the wastewater sump

5 This value represents the vapor pressure of pure water at 30°C. The vapor pressure of water was used the pool liquid since the liquid in the sump is primarily water, and the vapor pressures of the main VOCs in the wastewater do not differ significantly from that of water.

Table A6-1. Potential Emissions from B8 Boiler - Propane Combustion

Operating Hours		8,760	hr/year
Maximum Heat Input Capacity [1]		31.7	MMBtu/hr
Pollutant	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**(tpy)**
Particulate Matter <10 microns (PM_{10})[2]	0.01	0.24	1.06
Particulate Matter < 2.5 microns ($PM_{2.5}$)[2]	0.01	0.24	1.06
Sulfur Dioxide (SO_2)[3,4]	1.10E-03	0.03	0.15
Nitrogen Oxides (NO_X)[3]	0.11	3.34	14.62
Volatile Organic Compounds (VOC)[3]	8.30E-03	0.26	1.15
Carbon Monoxide (CO)[3]	0.04	1.21	5.30

[1] B8 heat input rating obtained from specifications provided by Cole Industrial for 100% firing rate.

[2] Emission factors for PM are obtained from Table 1.5-1, AP-42 Chapter 1.5, Liquefied Petroleum Gas Combustion rather than specifications provided by Cole Industrial.

[3] Emission factors for B8 are obtained from specifications provided by Cole Industrial for 100% firing rate.

[4] The emission factor for SO_x is used for SO_2.

Table A7-1. Criteria Pollutants from Emergency Generators

	Generator Rating		Fuel Consumption when Primed	
Server room	25 kW		0.42 MMBtu/hr	
Lab instruments	50 kW		0.68 MMBtu/hr	
Annual use for emergency generators	500 hours			
Pollutant	**Emissions (lb/hr)**	**Emissions (tpy)**	**Emission Factor [1]**	**Emission Factor Units [1]**
Criteria Pollutants				
Particulate Matter (PM) [2]	1.04E-02	2.60E-03	9.50E-03	lb/MMBtu
Particulate Matter <10 microns (PM_{10})	1.04E-02	2.60E-03	9.50E-03	lb/MMBtu
Particulate Matter < 2.5 microns ($PM_{2.5}$)	1.04E-02	2.60E-03	9.50E-03	lb/MMBtu
Sulfur Dioxide (SO_2)	6.45E-04	1.61E-04	5.88E-04	lb/MMBtu
Nitrogen Oxides (NO_X)	2.49E+00	0.62	2.27E+00	lb/MMBtu
Volatile Organic Compounds (VOC)	3.25E-02	8.12E-03	2.96E-02	lb/MMBtu
Carbon Monoxide (CO)	3.85E+00	0.96	3.51E+00	lb/MMBtu
Total HAP	3.56E-02	0.01	(See Table Below)	

[1] Emergency generators are propane-fired. Internal combustion factors for propane are not available in AP-42. Emissions due to internal combustion of propane are approximated using natural gas factors for 4-stroke rich burn engines, obtained from AP-42 Table 3.2-3. The emergency generators are classified as rich burn engines based on the fuel to air ratio provided by the generator manufacturers.

[2] PM emissions are assumed equivalent to PM_{10} and $PM_{2.5}$.

Table A7-2. HAPs from Emergency Generators[1]

Pollutant	**Natural Gas Emission Factor (lb/MMBtu)**	**Emissions (lb/hour)**	**Emissions (tons/year)**
1,1,2,2-Tetrachloroethane	2.53E-05	2.77E-05	6.94E-06
1,1,2-Trichloroethane	1.53E-05	1.68E-05	4.20E-06
1,3-Butadiene	6.63E-04	7.27E-04	1.82E-04
1,3-Dichloropropene	1.27E-05	1.39E-05	3.48E-06
Acetaldehyde	2.79E-03	3.06E-03	7.65E-04
Acrolein	2.63E-03	2.88E-03	7.21E-04
Benzene	1.58E-03	1.73E-03	4.33E-04
Carbon Tetrachloride	1.77E-05	1.94E-05	4.85E-06
Chlorobenzene	1.29E-05	1.41E-05	3.54E-06
Chloroform	1.37E-05	1.50E-05	3.76E-06
Ethylbenzene	2.48E-05	2.72E-05	6.80E-06
Ethylene Dibromide	2.13E-05	2.34E-05	5.84E-06
Formaldehyde	2.05E-02	2.25E-02	5.62E-03
Methanol	3.06E-03	3.36E-03	8.39E-04
Methylene Chloride	4.12E-05	4.52E-05	1.13E-05
Naphthalene	9.71E-05	1.06E-04	2.66E-05
PAH	1.41E-04	1.55E-04	3.87E-05
Styrene	1.19E-05	1.31E-05	3.26E-06
Toluene	5.58E-04	6.12E-04	1.53E-04
Vinyl Chloride	7.18E-06	7.87E-06	1.97E-06
Xylene	1.95E-04	2.14E-04	5.35E-05
Total HAP	--	3.56E-02	8.89E-03

[1] Emergency generators are propane-fired. Internal combustion factors for propane are not available in AP-42. Emissions due to internal combustion of propane are approximated using natural gas factors for 4-stroke rich burn engines, obtained from AP-42 Table 3.2-3. The emergency generators are classified as rich burn engines based on the fuel to air ratio provided by the generator manufacturers.

APPENDIX B. COMPLIANCE DEMONSTRATION

Regulation	Reference	Description	Applicable Requirement	Affected Emissions Unit(s)	Current Compliance Status	Method Used to Determine Compliance Status
EPA Region 10 FARR Regulations	40 CFR 49.124	Rule for limiting visible emissions	The visible emissions from an air pollution source must not exceed 20% opacity, averaged over any consecutive six-minute period. EPA Method 9 is used for determining compliance.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by conducting monthly walkthroughs of the facility to identify and address sources of visible emissions.
	40 CFR 49.125	Rule for limiting the emissions of particulate matter	Particulate matter emissions from a combustion source stack or process source stack must not exceed an average of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot), corrected to seven percent oxygen, during any three-hour period. EPA Method 5 is used for determining compliance.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by conducting monthly walkthroughs of the facility to identify and address sources of visible emissions.
	40 CFR 49.126	Rule for limiting fugitive particulate matter emissions	The owner or operator of any source of fugitive particulate matter emissions, including any source or activity engaged in materials handling or storage, construction, demolition, or any other operation that is or may be a source of fugitive particulate matter emissions, must take all reasonable precautions to prevent fugitive particulate matter emissions and must maintain and operate the source to minimize fugitive particulate matter emissions.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by conducting monthly walkthroughs of the facility to identify and address sources of fugitive particulate matter emissions.
	40 CFR 49.129	Rule for limiting emissions of sulfur dioxide	Sulfur dioxide emissions from a combustion or process source stack must not exceed an average of 500 parts per million by volume, on a dry basis and corrected to seven percent oxygen, during any three-hour period. EPA Methods 6, 6A, 6B, and 6C are used for determining compliance.	Facility-Wide	In Compliance	Ongoing compliance is maintained by using fuels compliant with applicable sulfur limits in fuels, and these fuels being the only fuels combusted in regulated emission sources at the facility.
	40 CFR 49.130	Rule for limiting sulfur in fuels	For gaseous fuels, 1.1 grams of sulfur per dry standard cubic meter of gaseous fuel (400 parts per million at standard conditions). ASTM methods D1072-90(Reapproved 1999), D3246-96, D4084-94 (Reapproved 1999), D5504-01, D4468-85 (Reapproved 2000), D2622-03, and D6228-98 (Reapproved 2003) are used for determining compliance.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by verifying fuel sulfur content supplied by the propane vendor.
	40 CFR 49.135	Rule for emissions detrimental to public health or welfare	A person must not cause or allow the emission of any air pollutants from an air pollution source, in sufficient quantities and of such characteristic and duration, that the Regional Administrator determines causes or contributes to a violation of any national ambient air quality standard; or is presenting an imminent and substantial endangerment to public health or welfare, or the environment.	Facility-Wide	In Compliance	Compliance with applicable emission limits assures compliance with this limit.
	40 CFR 49.137	Rule for air pollution episodes	Owners or operators of any air pollution source may volunteer or may be required to curtail or eliminate air emissions during the declaration of an applicable air pollution action level trigger.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by curtailing or eliminating air emissions during applicable air pollution action levels as directed by the Regional Administrator.
	40 CFR 49.138	Rule for the registration of air pollution sources and the reporting of emissions	Part 71 (Title V) sources must submit an annual registration that includes a facility description, emissions estimation methodology, annual emissions estimate, and fee calculation worksheet.	Facility-Wide	In Compliance	Ongoing compliance will be maintained by submitting annual reports containing applicable information and fees.
NSPS Subpart Dc	40 CFR 60.48c(a) and §60.7(a)(1) and (3)	Reporting and recordkeeping	An initial notification of construction is required that contains the date of startup, design heat capacity, identification of fuels, and the annual capacity factor the owner or operator anticipates operating the boiler.	B8 Boiler	In Compliance	An initial notification was submitted after construction.
	40 CFR 60.48c(g)	Reporting and recordkeeping	The owner or operator must maintain records of the total amount of steam generating fuel delivered to the property each month. The fuel must meet the most current requirements in §60.42c to demonstrate compliance with the SO_2 standard.	B8 Boiler	In Compliance	Ongoing compliance is maintained through retention of propane delivery records for at least two years.
NSPS Subpart JJJJ	40 CFR 60.4233(c)	Emission standards	Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in §60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in §60.4231(c) for their stationary SI ICE.	50 kW Emergency Generator	In Compliance	The emergency generators were purchased as engines certified to the applicable emission standards in 40 CFR Part 60. These standards are codified in §60.4231(c): "Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in §60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90."
	40 CFR 60.4237(c)	Monitoring	If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine.	50 kW Emergency Generator	In Compliance	The propane-fired emergency generators are each equipped with a non-resettable hour meter.
	40 CFR 4243(a)(1)	Operation and maintenance requirements and recordkeeping	If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.	50 kW Emergency Generator	In Compliance	The emergency generator is operated and maintained according to the manufacturer's emission-related instructions. Ongoing compliance is maintained by keeping records of maintenance conducted on the engine. Per 40 CFR 1068.1(11) The requirements of part 1068 do not apply to Pace because the emergency generator is not certified according to the provisions of part 1068 or part 1054. The generator is certified according to the provisions of §60.4231(c) and part 90 as shown above.
	40 CFR 60.4243(d)	Operational requirements	Any operation other than emergency operation (no time limit), maintenance and testing and emergency demand response (up to 100 hours per year), and operation in non-emergency situations (up to 50 hours per year), is prohibited.	50 kW Emergency Generator	In Compliance	Ongoing compliance is demonstrated via compliance with the recordkeeping requirements in §60.4245(b).
	40 CFR 60.4245(a)	Notification, reporting, and recordkeeping requirements	Owners and operators of all stationary SI ICE must keep records of: (1) All notifications submitted to comply with this subpart and all documentation supporting any notification, (2) Maintenance conducted on the engine, and (3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.	50 kW Emergency Generator	In Compliance	Ongoing compliance is maintained by keeping records of maintenance conducted on the engine. There are no initial or ongoing notifications required to comply with this subpart since the engine is less than 500 HP. The engine meets the emission standards stated in §60.4231(c) and manufacturer documentation is maintained that states compliance with applicable 40 CFR Part 60 emission standards.
	40 CFR 60.4245(b)	Notification, reporting, and recordkeeping requirements	For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.	50 kW Emergency Generator	In Compliance	Ongoing compliance is maintained through documentation of emergency engine hours of operation, type of operation, and retention of records.
NESHAP Subpart ZZZZ	40 CFR 63.6590(c)	Applicability	RICE units located at area sources of HAP and constructed after June 12, 2006 must meet the requirements of NESHAP Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.	25 and 50 kW Emergency Generators	In Compliance	The emergency generators meet the provisions of NSPS JJJJ as applicable to each individual engine, and are therefore in compliance with NESHAP Subpart ZZZZ. Note that the provisions of NSPS JJJJ are not applicable to the 25 kW emergency generator as explained in Section 4.1.3 of the application report.

Regulation	Reference	Description	Applicable Requirement	Affected Emissions Unit(s)	Current Compliance Status	Method Used to Determine Compliance Status
Protection of Stratospheric Ozone	40 CFR 82.154(a)	Venting prohibition	No person maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration may knowingly vent or otherwise release into the environment any refrigerant from such appliances.	Refrigerant-Containing Appliances	In Compliance	Pace does not knowingly vent or otherwise release into the environment any refrigerants other than potential de minimis releases as defined in §82.154(a)(2).
	40 CFR 82.154(b)	Service and disposal requirements	No person may maintain, service, repair, or dispose of an appliance containing a class I or class II refrigerant or a non-exempt substitute refrigerant without: observing the applicable practices in §82.155, §82.156, and §82.157; and using recovery and/or recycling equipment that is certified for that type of refrigerant and appliance under §82.158.	Refrigerant-Containing Appliances	In Compliance	Pace contracts certified technicians to handle all maintenance, service, repair, and disposal of refrigerants and appliances that contain refrigerants.
	40 CFR 82154(c)-(f)	Manufacture, sale, and import restrictions	The manufacture, sale, and/or import of appliances, refrigerants, or one-time expansion devices is subject to various operational requirements, prohibitions, and recordkeeping and reporting.	Refrigerant-Containing Appliances	In Compliance	Pace does not manufacture, sell, or import any appliances, refrigerants, or one-time expansion devices as defined in Part 82.

APPENDIX C. APPLICATION FORMS

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name ___Pace International, LLC_____

Mailing address: Street or P.O. Box __5661 Branch Rd_____

City ___Wapato_____ State __WA_____ ZIP _98951_-_____

Contact person: __William Osborne_____ Title __Senior EH&S Manager____

Telephone (925) 357 - 6754___ Ext. _____

Facsimile (_____) _____ - _____

B. Facility Location

Temporary source? ___Yes _X_No Plant site location __5661 Branch Rd _____

_____

City __Wapato_____ State__WA_ County_Yakima_____ EPA Region_10_

Is the facility located within:

Indian lands? _X_YES ___ NO An offshore source in federal waters? ___YES _X_ NO

Non-attainment area? ___ YES _X_NO If yes, for what air pollutants? _____

Within 50 miles of affected State? _X_ YES __ NO If yes, What State(s)? ___WA_____

C. Owner

Name __Same as above_____ Street/P.O. Box _____

City _____ State_____ ZIP_____ - _____

Telephone (_____) _____ - _____ Ext_____

D. Operator

Name __Same as above_____ Street/P.O. Box _____

City _____ State _____ ZIP _____ - _____

Telephone (_____) _____ - _____ Ext_____

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

_X_Initial Permit ___ Renewal ___ Significant Mod ___ Minor Permit Mod(MPM)

___ Group Processing, MPM ___ Administrative Amendment

For initial permits, when did operations commence? __The facility will commence operation as a major source upon removal of its current synthetic minor emission limits___

For permit renewal, what is the expiration date of current permit? _____/____/_____

F. Applicable Requirement Summary

Mark the types of applicable requirements that apply:

___ SIP _X_ FIP/TIP ___ PSD ___Non-attainment NSR

___ Minor source NSR _X_ Section 111 ___ Phase I acid rain ___Phase II acid rain

_X_ Stratospheric ozone ___ OCS regulations ___ NESHAP _X_ Sec. 112(d) MACT

___ Sec. 112(g) MACT ___ Early reduction of HAP ___ Sec 112(j) MACT ___ RMP [Sec.112(r)]

___ Section 129 ___ NAAQS, increments or visibility but for temporary sources (This is rare)

Is the source subject to the Deepwater Port Act? ___YES _X_NO

Has a risk management plan been registered? ___YES _X_NO Agency _____

Phase II acid rain application submitted? ___YES _X_NO If YES, Permitting Authority _____

G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

See above application narrative

H. Process Description

List processes, products, and SIC codes for the facility.

Process	Products	SIC
Manufacturing miscellaneous chemical preparations, not elsewhere classified	ShieldBrite Products ® (post harvest)	2879

I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

Emissions Unit ID	Description of Unit
Fogging Chemicals	Use of fogging chemicals and afterburner
Emergency Generators	Two (2) aggregated emergency generators, 25 and 50 kW each; propane fired
Wastewater Sump	Facility wastewater sump
B8 Boiler	B8 boiler – 31.7 MMBtu/hr; propane fired
ShieldBrite Process	All facility equipment used to produce ShieldBrite product, including onsite laboratory

J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each regulated air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants, stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

NOx _16.2_____ tons/yr VOC __190.0_____ tons/yr SO2 _0.2_____ tons/yr

PM-10 __1.1_____ tons/yr CO __6.8_____ tons/yr Lead __negligible___ tons/yr

Total HAP __6.1_____ tons/yr

Single HAP with greatest amount ____variable_____ PTE _less than or equal to 6.1_ tons/yr

Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE _49.9__ tons/yr

K. Existing Federally-Enforceable Permits

Permit number(s) _R10NT500__ Permit type _Synthetic Minor__ Permitting authority _EPA_

Permit number(s) _____ Permit type _____ Permitting authority _____

L. Emission Unit(s) Covered by General Permits

Emission unit(s) subject to general permit ____Not Applicable_____

Check one: ___ Application made ___ Coverage granted

General permit identifier _____ Expiration Date ____/____/____

M. Cross-referenced Information

Does this application cross-reference information? ___ YES _X_ NO (If yes, see instructions)

INSTRUCTIONS FOLLOW

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)

A. General Information

Emissions unit ID __ShieldBrite Process_ Description _Manufacture of ShieldBrite Chemicals_

SIC Code (4-digit) _2879____ SCC Code__30199998_____

B. Emissions Unit Description

Primary use or equipment type __All facility equipment used in ShieldBrite Process__

Manufacturer ___NA_____ Model No. __NA_____

Serial No. ____NA_____ Installation date __Various__

Raw materials __Shellac or carnauba wax and several proprietary ingredients_____

Finished products ___Cleaners, fungicides, drench, and coatings for agricultural products_____

Temporary source: _X_No ___Yes

C. Activity or Production Rates

Activity or Production Rate	Amount/Hour	Amount/Year
Actual Rate	Variable	1,136,780 gallons
Maximum rate	Variable	2,400,000 gallons

D. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID _____ Device Type_____

Manufacturer _____ Model No_____

Serial No. _____ Installation date _____/_____/_____

Control efficiency (%) _____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled _____ Efficiency estimation method _____

E. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____.____

Actual stack flow rate (ACFM) _____.____ Velocity (ft/sec) _____.____

The ShieldBrite Process and Wastewater Sump evaporative emissions exhaust through building ventilation. The primary purpose of the building ventilation is to exhaust the emissions from these sources.

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)

A. General Information

Emissions unit ID _Fogging Chemicals_ Description _Use of Fogging Chemicals and afterburner_

SIC Code (4-digit) _2879_____ SCC Code__49099998_____

B. Emissions Unit Description

Primary use or equipment type __Application of chemical vapor_____

Manufacturer __NA_____ Model No. __NA_____

Serial No. ____NA_____ Installation date ___Unknown____

Raw materials ___Agricultural fogging chemicals_____

Finished products __Coated fruits and vegetables_____

Temporary source: _X_No ___Yes

C. Activity or Production Rates

Activity or Production Rate	Amount/Hour	Amount/Year
Actual Rate	0.77 kg (set equal to PTE for conservatism)	618 kg (800 hours)
Maximum rate	0.77 kg	6764 kg (8760 hours)

D. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID _____ Device Type_____

Manufacturer _____ Model No_____

Serial No. _____ Installation date _____/_____/_____

Control efficiency (%) _____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled _____ Efficiency estimation method _____

E. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____.____

Actual stack flow rate (ACFM) _____.____ Velocity (ft/sec) _____.____

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)

A. General Information

Emissions unit ID __Wastewater Sump_ Description __Facility wastewater sump_____

SIC Code (4-digit) _2879_____ SCC Code_30182012_____

B. Emissions Unit Description

Primary use or equipment type ___Wastewater sump_____

Manufacturer __NA_____ Model No. ___NA_____

Serial No. _____NA_____ Installation date ___Unknown____

Raw materials ____Wastewater_____

Finished products ___Wastewater_____

Temporary source: _X_No ___Yes

C. Activity or Production Rates – Not Applicable

Activity or Production Rate	Amount/Hour	Amount/Year
Actual Rate		
Maximum rate		

D. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID _____ Device Type_____

Manufacturer _____ Model No_____

Serial No. _____ Installation date _____/_____/_____

Control efficiency (%) _____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled _____ Efficiency estimation method _____

E. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

The ShieldBrite Process and Wastewater Sump evaporative emissions exhaust through building ventilation. The primary purpose of the building ventilation is to exhaust the emissions from these sources.

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID _B8 Boiler_____ Description____B8 Boiler_____

SIC Code (4-digit) _2879_____ SCC Code_10301002_____

B. Emissions Unit Description

Primary use __Steam Generation_____ Temporary Source ___Yes _X_No

Manufacturer __Cole Industrial_____ Model No. ___Unknown_____

Serial Number __Unknown_____ Installation Date_Unknown___

Boiler Type: _X_ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____

Boiler horsepower rating____Unknown_____ Boiler steam flow (lb/hr)__Unknown_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input ___31.7_____MM BTU/hr Max. Design Heat Input __31.7_____MM BTU/hr

C. Fuel Data

Primary fuel type(s)___Propane_____ Standby fuel type(s)___None_____

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Propane	400 ppm	NA	91.5 MMBtu/1000 gal

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Propane	290013 gallons	346 gallons	3034885 gallons

E. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date_____/_____/_____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (°F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID_____Emergency Generators_____
Description____Two (2) aggregated emergency generators, 25 and 50 kW each_____

SIC Code (4-digit) _2879_____ SCC Code_20301001_____

B. Emissions Unit Description

Primary use ___Emergency electricity generation_____ Temporary Source ___Yes _X_No

Manufacturer ___Unknown_____ Model No. __ Unknown _____

Serial Number ___ Unknown _____ Installation Date___ Unknown _____

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) ___Reciprocating engines_____

Boiler horsepower rating__25 and 50 kW each___ Boiler steam flow (lb/hr)__NA_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input _Total = 0.55__MM BTU/hr Max. Design Heat Input _Total = 0.55_MM BTU/hr

C. Fuel Data

Primary fuel type(s)__Propane_____ Standby fuel type(s)___None_____

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Propane	400 ppm	NA	91.5 MMBtu/1000 gal

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Propane	5993 gallons (set equal to PTE)	12.0 gallons	5993 gallons

E. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date_____/_____/_____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____._____ Inside stack diameter (ft) _____._____

Stack temp (°F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
INSIGNIFICANT EMISSIONS (IE)

On this page list each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

Number	Description of Activities or Emissions Units	RAP (except HAP)	HAP
1	Hot Box	X	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _ShieldBrite Process_____

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates[1]			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
$PM/PM_{10}/PM_{2.5}$	--	--	--	
Sulfur Dioxide (SO_2)	--	--	--	
Nitrogen Oxides (NO_x)	--	--	--	
Volatile Organic Compounds (VOC)	46.3	Variable	180.0	
Carbon Monoxide (CO)	--	--	--	
Total HAP	<0.1	Variable	6.0	

[1] The ShieldBrite process includes storage tanks, mixing tanks, sediment ponds, laboratory activities, and other miscellaneous evaporative sources. Emissions from all such sources are included in actual and potential emissions. Laboratory emissions are tracked separately, but included in the actual and potential emissions on this form. All actual HAP emissions from the ShieldBrite process in 2019 came from laboratory activities and totaled 0.05 tons. For the purposes of this application, the PTE calculation of the ShieldBrite process is meant to provide a very conservative upper bound of emissions rather than a more precise estimate of PTE, which may in reality be much lower, as evidenced by the low historical actual emissions at the facility.

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _Fogging Chemicals and Equipment_____

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions[1] (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
$PM/PM_{10}/PM_{2.5}$	0.1	< 0.1	0.1	
Sulfur Dioxide (SO_2)	< 0.1	< 0.1	< 0.1	
Nitrogen Oxides (NO_x)	0.9	0.2	0.9	
Volatile Organic Compounds (VOC)	7.5	1.7	7.5	
Carbon Monoxide (CO)	0.5	0.1	0.5	

[1] Actual emissions shown are set equal to PTE for conservatism.

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _Wastewater Sump_____

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions[1] (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
PM/PM_{10}/$PM_{2.5}$	--	--	--	
Sulfur Dioxide (SO_2)	--	--	--	
Nitrogen Oxides (NO_x)	--	--	--	
Volatile Organic Compounds (VOC)	1.7	0.4	1.7	
Carbon Monoxide (CO)	--	--	--	
Total HAP	0.6	0.1	0.6	

[1] Actual emissions shown are set equal to PTE for conservatism

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _B8 Boiler_____

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
$PM/PM_{10}/PM_{2.5}$	0.1	0.2	1.1	
Sulfur Dioxide (SO_2)	< 0.1	< 0.1	0.2	
Nitrogen Oxides (NO_x)	1.4	3.3	14.6	
Volatile Organic Compounds (VOC)	0.1	0.3	1.2	
Carbon Monoxide (CO)	0.5	1.2	5.3	

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _Emergency Generators (2 units aggregated)_____

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions[1] (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
PM/PM_{10}/$PM_{2.5}$	< 0.1	< 0.1	< 0.1	
Sulfur Dioxide (SO_2)	< 0.1	< 0.1	< 0.1	
Nitrogen Oxides (NO_x)	0.6	2.49	0.6	
Volatile Organic Compounds (VOC)	< 0.1	< 0.1	< 0.1	
Carbon Monoxide (CO)	1.0	3.85	1.0	
Total HAP	< 0.1	< 0.1	< 0.1	

[1] Actual emissions shown are set equal to PTE for conservatism, using a throughput of 500 hours per year.

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POTENTIAL TO EMIT (PTE)

For each emissions unit at the facility, list the unit ID and the PTE of each air pollutant listed below and sum the values to determine the total PTE for the facility. It may be helpful to complete form **EMISS** before completing this form. Report each pollutant at each unit to the nearest tenth (0.1) of a ton; values may be reported with greater precision (i.e., more decimal places) if desired. Report facility total PTE for each listed pollutant on this form and in section **J** of form **GIS**. The HAP column is for the PTE of all HAPs for each unit. You may use an attachment to show any pollutants that may be present in major amounts that are not already listed on the form (this is not common).

Emissions Unit ID	Regulated Air Pollutants and Pollutants for which Source is Major (PTE in tons/yr)						
	NOx	VOC	SO2	PM10	CO	Lead	HAP
Fogging Chemicals and Equipment	0.9	7.5	<0.1	0.1	0.5	--	Negligible
Emergency Generators	0.1	<0.1	<0.1	<0.1	<0.1	Negligible	<0.1
Wastewater Sump	--	1.7	--	--	--	--	0.1
B8 Boiler	14.6	1.2	0.2	1.1	5.3	Negligible	Negligible
ShieldBrite Process[1]	--	180.0	--	--	--	--	6.0
Hot Box	0.8	0.1	<0.1	<0.1	0.4	Negligible	Negligible
FACILITY TOTALS:	**16.2**	190.4	**0.2**	**1.1**	**6.8**	**Negligible**	**6.1**

[1] The ShieldBrite process includes storage tanks, mixing tanks, sediment ponds, laboratory activities, and other miscellaneous evaporative sources. Emissions from all such sources are included in actual and potential emissions. Laboratory emissions are tracked separately, but included in the actual and potential emissions on this form. All actual HAP emissions from the ShieldBrite process in 2019 came from laboratory activities and totaled 0.05 tons. For the purposes of this application, the PTE calculation of the ShieldBrite process is meant to provide a very conservative upper bound of emissions rather than a more precise estimate of PTE, which may in reality be much lower, as evidenced by the low historical actual emissions at the facility.

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Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): _X__Initial ___Annual

Deadline for submitting fee calculation worksheet ___With initial application_____

For initial fees, emissions are based on (Check one):

_X_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ___prior to 2006____

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name __Pace International, LLC_____

Mailing address: Street or P.O. Box ___5661 Branch Road _____

City____Wapato_____ State__WA__ ZIP_98951_ - _____

Contact person__William Osborne_____ Title__Senior EH&S manager_____

Telephone (925) 357 - 6754 Ext_____ Part 71 permit no. _NA_____

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

See form CTAC

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) _____

Name (typed) _____ Date:____ /____ /_____

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO and GHGs (see instructions). Sum the emissions in each column to calculate subtotals. Subtotals should be reported to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for _2019____ (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
Total facility – actual emissions	1.4	48.1	<0.1	0.1	NA	NA
SUBTOTALS:	1.4	48.1	<0.1	0.1	NA	NA

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Total Facility HAP[1]	NA	HAP1

[1] Actual 2019 total HAP emissions are calculated based on mass balance equations, which are available upon request.

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for __2019____ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP___	HAP___	HAP___	HAP___	HAP___	HAP___	HAP___
Total Facility	0.2							
SUBTOTALS:	0.2							

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	49.7
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	0.2
3. Sum lines 1 and 2.	49.9
4. Enter the emissions that were counted twice. If none, enter "0."	0
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	49.9

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR)

Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.

11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
EMISSION FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$2,685.12
GHG FEE ADJUSTMENT	
22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	$2,236
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter $520, otherwise enter “0”	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	$2,236
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	$4,921.12
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	$4,921.12
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	$4,921.12

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Federal Operating Permit Program (40 CFR Part 71)
INITIAL COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION (I-COMP)

SECTION A - COMPLIANCE STATUS AND COMPLIANCE PLAN

Complete this section for each unique combination of applicable requirements and emissions units at the facility. List all compliance methods (monitoring, recordkeeping and reporting) you used to determine compliance with the applicable requirement described above. Indicate your compliance status at this time for this requirement and compliance methods and check "YES" or "NO" to the follow-up question.

Emission Unit ID(s): **See Appendix B: Compliance Demonstration**

Applicable Requirement (Describe and Cite)

Compliance Methods for the Above (Description and Citation):

Compliance Status:

_X_ In Compliance: Will you continue to comply up to permit issuance? __X_Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____Yes ____No

Emission Unit ID(s): **See Appendix B: Compliance Demonstration**

Applicable Requirement (Description and Citation):

Compliance Methods for the Above (Description and Citation):

Compliance Status:

_X_ In Compliance: Will you continue to comply up to permit issuance? _X__Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____Yes _____No

B. SCHEDULE OF COMPLIANCE – Not Applicable

Complete this section if you answered "NO" to any of the questions in section A. Also, complete this section if required to submit a schedule of compliance by an applicable requirement. Please attach copies of any judicial consent decrees or administrative orders for this requirement.

Unit(s)_____ Requirement_____

Reason for Noncompliance. Briefly explain reason for noncompliance at time of permit issuance or that future-effective requirement will not be met on a timely basis:

Narrative Description of how Source Compliance Will be Achieved. Briefly explain your plan for achieving compliance:

Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

Remedial Measure or Action	Date to be Achieved

C. SCHEDULE FOR SUBMISSION OF PROGRESS REPORTS – Not Applicable

Only complete this section if you are required to submit one or more schedules of compliance in section B or if an applicable requirement requires submittal of a progress report. If a schedule of compliance is required, your progress report should start within 6 months of application submittal and subsequently, no less than every six months. One progress report may include information on multiple schedules of compliance.

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

D. SCHEDULE FOR SUBMISSION OF COMPLIANCE CERTIFICATIONS

This section must be completed once by every source. Indicate when you would prefer to submit compliance certifications during the term of your permit (at least once per year).

Frequency of submittal__once per year_____ Beginning___February 15

E. COMPLIANCE WITH ENHANCED MONITORING & COMPLIANCE CERTIFICATION REQUIREMENTS

This section must be completed once by every source. To certify compliance with these, you must be able to certify compliance for every applicable requirement related to monitoring and compliance certification at every unit.

Enhanced Monitoring Requirements: _X__ In Compliance ____ Not In Compliance

Compliance Certification Requirements: _X__ In Compliance ____ Not In Compliance