Procter&Gamble

The Procter & Gamble Company
Sharon Woods Innovation Center
11510 Reed Hartman Hwy, Cincinnati, OH 45241

October 11, 2016

Ms. Beverly McKeone
NSR Program Manager
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

RE: Procter and Gamble – Tabler Station – Minor NSR Permit Application Revision

Dear Ms. McKeone:

As you know, the Procter and Gamble Manufacturing Company (P&G) plans to construct a consumer products manufacturing facility in Berkeley County, West Virginia near the unincorporated community of Tabler's Station. The P&G-Tabler Station facility will be comprised of surfactant-making; liquid soap and dry consumer laundry & cleaning products manufacturing; a plastics molded parts supplier; and associated site utilities.

The proposed project has emissions below the thresholds for federal Prevention of Significant Deterioration (PSD) review, but above the thresholds for minor New Source Review (NSR) permitting under Rule-13 of the West Virginia permit regulations for several pollutants. Consequently we are submitting to the West Virginia Department of Environmental Protection this revised minor new source review permit application.

We appreciate your review of this application and look forward to construction and start-up of our first P&G manufacturing facility in West Virginia. Please feel free to contact me at 513-765-0497 or Mr. Russell Bailey of Trinity Consultants at 540-342-5945 with any questions regarding this application or our planned operations.

Sincerely,

J. Andrew Hadley

J. Andrew Hadley
Environmental, Health & Safety Manager
NA Product Supply Engineering – Supply Network Design
Procter & Gamble

Enclosure

cc (w/o enclosure): Mr. Russell Bailey – Trinity Consultants

R13 PERMIT APPLICATION

Procter and Gamble

Tabler Station, West Virginia

Prepared By:

TRINITY CONSULTANTS
15 E Salem Ave.
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Roanoke, VA 24011
(540) 342-5945

Submitted: April 2016
Revised: October 2016

Project 141801.0078

Trinity Consultants

Environmental solutions delivered uncommonly well

TABLE OF CONTENTS

ATTACHMENT L: EMISSIONS UNIT DATA SHEETS

ATTACHMENT M: AIR POLLUTION CONTROL DEVICE SHEET

ATTACHMENT N: SUPPORTING EMISSION CALCULATIONS

ATTACHMENT O: MONITORING/RECORDKEEPING/REPORTING/TESTING PLANS

1.1. FACILITY AND PROJECT DESCRIPTION

Procter and Gamble (P&G) is submitting this Rule-13 (R-13) permit application to the West Virginia Department of Environmental Protection (DEP) for the proposed construction of a greenfield facility to be located in Berkley County, West Virginia in the unincorporated community of Tabler Station (Tabler Station facility).

The Tabler Station facility will produce liquid soap and dry consumer laundry and cleaning products, including dryer applied fabric softener, shampoo, and body wash. The facility will produce surfactant paste and raw materials which will be used in liquid soap making processes. The facility will have utilities to support the heating, cooling, ventilation, and steam needs of the manufacturing processes. The facility will incorporate third party suppliers who will provide a plastics molding process for the manufacture of bottles, caps, and other formed plastic parts.

The equipment and operations at the facility will be installed and started up in multiple phases. The business operations contained in this permit application are those expected to be installed in the first phase of the project. Additional phases are still in detailed design and will be permitted at a later date. It is anticipated that all phases of this project will be permitted, installed, and operational within 5 years of beginning construction. A thorough analysis of the current scope of the entire facility and planned operations indicates that all phases together do not trigger major new source review (major NSR) permitting, also called prevention of significant deterioration (PSD) permitting.

A description of each source category applicable to the current project can be found in Section 2. A process flow diagram for the planned Phase 1 operations is included in Attachment F.

1.2. R-13 APPLICATION ORGANIZATION

This R-13 permit application is organized as follows:

- Section 2: Sample Emission Source Calculations;
- Section 3: R-13 Application Forms;
- Attachment A: Business Certificate;
- Attachment B: Aerial Map;
- Attachment C: Installation and Start Up Schedule;
- Attachment D: Regulatory Applicability Discussion;
- Attachment E: Plot Plan;
- Attachment F: Detailed Process Flow Diagram;
- Attachment G: Process Description;
- Attachment H: Material Safety Data Sheets
- Attachment I: Emission Units Table;
- Attachment J: Emission Points Data Summary Sheet;
- Attachment K: Fugitive Emissions Data Summary Sheet;
- Attachment L: Emissions Unit Data Sheets;
- Attachment M: Air Pollution Control Device Sheet;
- Attachment N: Supporting Emission Calculations; and
- Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans.

As part of the first phase of the project, P&G proposes to install equipment in several distinct manufacturing areas:

- Surfactant Manufacturing;
- Liquid Soap Making A and B;
- Dry Consumer Products A;
- Site Supporting Utilities; and
- Plastics Molding Suppliers.

Each of these business areas will be discussed in greater detail in this section. A process flow diagram is included as Attachment F.

The installation of equipment at the facility will be installed in more than one phase. The business areas contained in this permit application make up phase 1. Additional phases will be permitted at a later date. It is anticipated that all phases of this project will be permitted, installed, and operational within 5 years of beginning construction.

In addition, the characteristics of expected site air emissions, along with the methodology used for calculating emissions from the proposed new sources, are described in narrative form below. The Tabler Station facility has the potential to emit the following pollutants:

- Oxides of nitrogen (NO_X);
- Sulfur dioxide (SO_2);
- Sulfur Trioxide (SO_3);
- Carbon monoxide (CO);
- Sulfuric Acid (H_2SO_4);
- Volatile organic compounds (VOC);
- Hazardous air pollutants (HAP);
- Particulate matter (PM);
- Particulate less than 10 micrometers (PM_{10}); and
- Particulate less than 2.5 micrometers ($PM_{2.5}$).

Detailed supporting calculations are also provided in Attachment N.

2.1. SURFACTANT MANUFACTURING

2.1.1. Process Description

P&G proposes to install equipment to manufacture surfactants. The purpose of the surfactant making operation is primarily to manufacture surfactant pastes used in the liquid soap manufacturing process which is also included in this application. A secondary byproduct produced by the surfactant process is a precipitated acid mix (PAM). Similarly, a number of variations to the surfactant paste product are intended, based on the end use. These variations are achieved through the use of varying raw materials in different quantities in the surfactant manufacturing process.

With the startup of the surfactant process, it is necessary to preheat the sulfur reactors, which is accomplished with the use of four (4) natural gas preheaters; Startup is intended to occur approximately four (4) times per year per reactor. Gasses from the preheaters (only used during startup) are vented to the common stack. During startup, any SO_3 produced will be vented to the SO_3 absorber and then through the SO_2 scrubber. Raw sulfur is stored in sulfur tanks. Gases from the combustion of sulfur (normal operation) are vented through a SO_2 packed bed scrubber. During changeover, the SO_3 is vented to the SO_3 absorber, and exhaust gas is vented through the SO_2 scrubber. A byproduct produced during changeover periods is sulfuric acid (H_2SO_4).

The surfactant processes are anticipated to emit the following criteria pollutants: SO_2, VOC, PM_{10}, and $PM_{2.5}$. Additionally, a small amount of NO_X, CO, SO_2 are anticipated to be emitted through the preheating of the sulfur reactor using a natural gas preheater and/or the oxidation of sulfur involved in making the surfactant paste. All surfactant potential emissions, with the exception of the natural gas preheaters, are vented through a SO_2 packed bed scrubber. Additionally, VOC emissions are anticipated from raw material and product tanks, inline mixing tanks, and rail and truck loading.

Emissions are calculated for the surfactant manufacturing can be found in Attachment N.

Proposed emission sources in the surfactant processes include the following:

- Raw material, intermediate, and product tanks;
- Natural gas preheaters and sulfur reactors;
- In-line mixing and/or mixing tanks; and
- Product truck loading.

The proposed surfactant process will be controlled with the following equipment to control SO_2 and PM emissions:

- Packed bed scrubber

Additional information related to control devices can be found in Attachment M.

2.1.2. Emissions Calculations

2.1.2.1. Scrubber for Surfactant Manufacturing

The Tabler Station facility will emit NO_x, SO_2, VOC, H_2SO_4, and PM through a packed bed SO_2 scrubber as a result of surfactant manufacturing. The potential to emit for VOC is derived from the stack test data recorded by similar P&G sites. The NO_x, SO_2, PM_{10}, and $PM_{2.5}$ emission rates are calculated using emission factors supplied by the manufacturer. During limited startup periods, natural gas preheaters are run to preheat the process from a cold start; emissions are calculated using AP-42 emission factors.

A majority of the sulfur burned is transformed into SO_3, absorbed and converted into finished product in the surfactant making process. However, a fraction of the SO_2 is not converted to SO_3 and not all of the SO_3 is consumed in the reaction. The excess SO_2 is not emitted; it is controlled by the SO_2 scrubbers. In the presence of water vapor, SO_3 becomes droplets of H_2SO_4 (i.e. sulfuric acid mist). H_2SO_4 droplets contribute to the condensable fraction of PM_{10} and $PM_{2.5}$ emissions. For purposes of this application it was assumed that the PM_{10} and $PM_{2.5}$ emissions from the scrubber during normal operations were equal to the residual SO_3 from the scrubber (which, in the presence of water vapor is H_2SO_4).

2.1.2.2. Vertical Fixed Roof Tank Emission Calculation Methodology

The proposed Tabler Station project includes tanks in each of the proposed process areas. Monthly VOC emissions from fixed roof tanks are calculated using procedures in AP-42 Section 7.1.

Fixed roof tanks typically have two major types of emissions: working losses and breathing losses. Working losses occur during the day-to-day operations of the tank from the release of the vapor space as the tank is filled and emptied. Breathing losses occur at outdoor ambient tanks that are subject to daily temperature changes with the weather. A majority of the tanks at the Tabler Station facility are temperature controlled and, as such, do not have breathing losses. Breathing losses were calculated for ambient outdoor tanks.

The tanks at the Tabler Station facility contain a variety of organic materials used in the manufacture of surfactants, liquid soap, and dry consumer laundry and cleaning products. Emissions from tanks containing raw materials were calculated using the specific properties of that material. Emissions from tanks containing intermediate materials or mixtures were calculated using Raoult's law[1] and the properties of the most volatile component of the mixture. Minor components of raw material HAP have been included in individual material usage tank calculations, as applicable. HAP amounts in raw materials based on review of Material Safety Data Sheets.

2.1.2.3. Liquid Material Handling

As discussed in Section 2.1.2.2, several of the products and processes at the Tabler Station facility contain organic liquids with a range of volatility. Fugitive emissions of VOC that occur during the mixing of raw materials, intermediates and products; or transfer and packaging of products, are calculated through the use of a working loss equation; this equation calculates the emissions that result from lost vapors due to liquid movement when tanks are being filled or emptied and can be found in AP-42 Section 7.1 as Equation 1-29. This working loss due to liquid movement is similar to what occurs when mixing or packaging liquid raw materials, intermediates, and products and therefore is used for estimating the associated emission rate.

2.1.2.4. Truck Loading and Unloading

The transfer of organic chemicals into and out of trucks will occur as a part of the operations at the Tabler Station facility. Intermediates and final products that are loaded into trucks produce vapors containing VOC, HAP and H_2SO_4. The emissions from unloading of trucks is accounted for in the working losses of the tanks. The emissions from the loading of trucks are calculated using Equation 1 in AP-42 Section 5.2.

A saturation factor of 0.6 is selected based on Table 5.2-1 of AP-42 Section 5.1 for bottom/submerged loading of a truck during normal loadout. VOC concentration is assumed to be 100% whereas HAP and H_2SO_4 vary by stream.

2.2. LIQUID SOAP MAKING A AND B

2.2.1. Process Description

P&G also proposes to install Liquid Soap A and B manufacturing processes. Both Soap A and Soap B manufacturing processes involve primarily mixing operations with no chemical transformations. The raw materials primarily consist of but are not limited to dyes, perfumes, surfactants essential for soap manufacturing, and minor component additives intended to deliver product performance attributes. Liquid raw materials will either be piped from elsewhere on-site or be transported to the site in totes/drums which will be unloaded into the building for placement in to the mixing tanks. Dry raw materials will be weighed on a scale before being manually added to the mixing tanks.

Liquid Soap A is a variation of the product that may contain a higher volatility processing aid, depending on product formulation. The higher volatility processing aid may be processed hot or at ambient temperature. When Liquid Soap A is being manufactured hot and the higher volatility processing aid is used, volatile emissions from the mixing tanks will be routed through a regenerative thermal oxidizer (RTO). When Liquid Soap A is being manufactured at ambient temperature and the higher volatility processing aid is used, volatile emissions from the mixing tanks are not controlled. Liquid Soap B does not contain the higher volatility processing aid and will not have emissions routed through the RTO.

[1] The partial vapor pressure of each component of an ideal mixture of liquids is equal to the vapor pressure of the pure component multiplied by its mole fraction in the mixture.

The resultant mixture represents the final product. Variations of the mixture are dependent upon the soap product to be manufactured. The product, once made, is piped into a packing line for filling containers. After filling, the product will proceed to final packaging for off-site transport.

As part of quality assurance, process tanks and liquid filling equipment is periodically cleaned and sanitized using hot water. Residual raw material related emissions that may occur during cleaning and sanitization are accounted for in storage and process tank emissions calculations.

The emission sources for the liquid soap manufacturing process includes:

- Storing raw materials in tanks, totes, or drums
- Weighing and mixing raw materials
- Product packaging

Emission calculations for Liquid Soap A and B manufacturing can be found in Attachment N.

The proposed liquid soap processes will be controlled with the following equipment to control VOC and PM emissions:

- Regenerative Thermal Oxidizer (RTO) (Liquid Soap A only); and
- Rotoclones, liquid (water) scrubbers.

Additional information related to these control devices can be found in Attachment M.

As discussed in the next section, perfume may be used in the Liquid Soap A &B making process. A small quantity of perfume may be emitted, among other volatile organic compounds, as a fugitive. Additional information can be found in Attachment N. 7

2.2.2. Emissions Calculations

Emissions calculation methodology for tanks and packaging has already been discussed in Sections 2.1.2.2 and 2.1.2.3, respectively. This section will discuss the emissions calculations for the process tanks.

2.2.2.1. Process Tanks

The process tanks for Liquid Soap A and B manufacturing are equipped with rotoclones for dust control. In addition, some of the process tanks for Liquid Soap A are equipped with an RTO. PM, PM_{10}, and $PM_{2.5}$ emissions from the rotoclones are calculated based on grain loading based on P&G process knowledge. It is conservatively assumed that PM_{10} and $PM_{2.5}$ emissions are equal to PM emissions. The VOC emissions from the process tanks for Liquid Soap A and B are calculated based on P&G process knowledge. The RTO emission factors are based on a mass balance of VOC, vendor guarantees (NO_X, CO), and AP-42 factors (PM_{10}, $PM_{2.5}$, SO_2).

2.3. DRY CONSUMER LAUNDRY AND CLEANING PRODUCTS A

2.3.1. Process Description

Additionally, P&G proposes to install manufacturing lines to manufacture Dry Consumer Laundry and Cleaning Products. The process includes delivery of raw materials and transfer of material to day and mixing tanks. The mixture is then applied onto a substrate to produce the final product. The final product is trimmed to size, packaged, and sent to a warehouse for distribution.

Various processing lines are involved with manufacturing cleaning articles into the different consumer cleaning products. The sources of emissions include the following equipment:

- Raw material tanks
- Intermediate mixing
- Addition of liquid raw materials
- Finished product packaging

Emissions estimates are based on the raw materials with the highest vapor pressure to account for the potential VOC emissions to represent the multiple formulations in the cleaning article manufacturing process. Emissions estimates can be found in Attachment N.

The proposed Dry Consumer Laundry and Cleaning Products process will be controlled with the following equipment to control particulate emissions:

- Baghouses and bin vent filters

Additional information related to these control devices can be found in Attachment M.

As discussed in the next section, a small amount of perfume may be included in the product formulation. Emission points with the potential to emit odor, such as the area were liquid raw materials are added, are controlled with activated carbon. The activated carbon serves as a control for employee comfort and to prevent nuisance odors, rather than for criteria pollutants, such as VOC. As such, it will not be considered a control device in this application.

2.3.2. Emissions Calculations

Emissions calculation methodology for tanks and intermediate mixing tanks has already been discussed in Sections 2.1.2.2 and 2.1.2.3, respectively. This section will discuss the emissions calculations for the addition of liquid raw materials and particulate emissions control for finished product packaging.

2.3.2.1. Addition of Liquid Raw Materials

The Dry Consumer Laundry and Cleaning Products A process produces a variety of consumer goods, all of which begin with a substrate. This substrate may receive a variety of liquid raw materials intended to enhance the performance and functionality of the consumer product. The raw materials typically consist of low-volatile, high molecular weight organic materials paired with a small amount of perfume. After the raw materials are applied, the substrate is cut to size, and packaged. A small amount of VOC emissions will result from the application process and subsequent exposed substrate surface. Regardless of the type of material applied or substrate used, emissions evaporating from the substrate will disperse similar to emissions evaporating from a residual "puddle", which provides a conservative estimate of potential emissions. The area over which emissions could potentially discharge into the atmosphere is the same as the area over which raw materials would be applied and therefore varies based on the application process.

The evaporation and emissions of VOC can be estimated using the following equation found in EPA's 2007 Emission Inventory Improvement Program's Technical Report Series Volume II Section 16, pages 49-50.

$$E_n = \frac{M_n K_n A P_n^{sat}}{R T_L}$$

Where:

E_n	=	Evaporation rate of the volatile component	$\left(\frac{lb}{hr}\right)$
M_n	=	Molecular weight of the volatile component	$\left(\frac{lb}{lbmol}\right)$
K_n	=	Mass transfer coefficient	$\left(\frac{ft}{hr}\right)$
A	=	Surface area of substrate exposed	(ft^2)
P_n^{sat}	=	Saturated solvent vapor pressure	(psia)
R	=	Universal gas constant	$10.73\ \left(\frac{psi\ ft^3}{lbmol\ °R}\right)$
T_L	=	Absolute temperature of the liquid	(°R)

The mass transfer coefficient for the VOC mixture is related to a reference compound, in this case water, through the following equation.

$$\frac{K_n}{K_0} = \left(\frac{M_0}{M_n}\right)^{\frac{1}{3}}$$

Where:

K_n	=	Mass transfer coefficient of VOC mixture	$\left(\frac{ft}{hr}\right)$
K_0	=	Mass transfer coefficient of water	$98.03\ \left(\frac{ft}{hr}\right)$
M_n	=	Molecular weight of the volatile compound	$\left(\frac{lb}{lbmol}\right)$
M_0	=	Molecular weight of water	$18\ \left(\frac{lb}{lbmol}\right)$

The area over which VOC have the potential to evaporate is related to the application process of the volatile material. Therefore, the spill area is equal to the surface area of the line from the point of application of the volatile material until the substrate is wound for storage.

$$A = L_l * W_l$$

Where:

A	=	Area of the representative "puddle"	(ft^2)
L_l	=	Length of the line	(ft)
W_l	=	Width of the line	(ft)

2.3.2.2. Particulate Emission Control for Raw Material Addition

Baghouses and fabric filters are proposed to control particulate emissions for Tabler Station in the Dry Consumer Laundry and Cleaning Products. PM, PM_{10}, and $PM_{2.5}$ emissions from the baghouses are calculated based on fabric filter grain loading and baghouse flow rates based on P&G process knowledge. It is conservatively assumed that PM_{10} and $PM_{2.5}$ emissions are equal to PM emissions.

2.4. UTILITIES

2.4.1. Process Description

To support the heating, cooling, ventilation, and steam needs for the processes that are being proposed with this project, P&G is proposing to install the following equipment:[2]

- Two (2) 50,267 pound per hour (pph) steam boilers
- One (1) 25,134 pound per hour (pph) steam boiler
- One (1) 8,918 pound per hour (pph) steam temporary boiler
- Six (6) natural gas fired building heaters
- Three (3) cooling towers

The boilers will be fueled primarily by natural gas. The purpose of the boilers is to supply heat or steam. The temporary boiler will be a mobile unit that will provide support to plant processes as the main facility boilers are installed. The temporary boiler will not be run at the same time as the main facility boilers. Emissions from the temporary boiler will be less than emissions from the main facility boilers.

The purpose of the building heaters is to provide comfort heating for the warehouse and other buildings. The cooling towers are for both comfort and process cooling water supply to buildings and manufacturing equipment associated with the various processes.

To be prepared for power outages and to be equipped to quickly respond to fires, the following equipment is also proposed be installed:

- Three (3) 350 KW standby/backup electric generators with diesel engines
- Two (2) 311 horsepower (HP) fire pumps with diesel engines

The standby/backup generator and fire pump engines will be fueled with ULSD and meet U.S. EPA's Tier 3 specifications.

Additionally, the plant intends to install five diesel tanks, less than 500 gallons, to supply the standby/backup generators and fire pump engines. Also, a diesel refueling station to supply on-site mobile equipment is proposed to be installed. The following fuel tanks will be installed at the site:

- 5,000 gallon ULSD tank for vehicle refueling

The Tabler Station facility intends to install a water pretreatment system as well as a wastewater pretreatment system. The water pretreatment system will purify and soften the water before use to maintain product quality. The wastewater system will use chlorination and other process to clean the wastewater before discharge to the sanitary sewer.

Emissions calculations for the above listed equipment are enclosed in Attachment N of the application. Emissions have been estimated using either vendor supplied specifications, applicable AP-42 factors, and/or mass balance equations associated to the type of emissions source listed above.

[2] Final sizes and numbers of equipment in the utilities area subject to change.

2.4.2. Emissions Calculations

2.4.2.1. Boilers

CO, VOC, PM_{10}, $PM_{2.5}$, SO_2 and lead emissions from the proposed boilers are calculated using the emission factors found in AP-42 Section 1.4 (natural gas), except where a manufacturer's guarantee applies. The H_2SO_4 emission factor was calculated by assuming one percent of the sulfur contained within the natural gas is emitted as sulfuric acid.[3]

2.4.2.2. Standby/Backup Generators and Fire Pump

The three generator engines and two fire pump engines proposed for the Tabler Station facility will be subject to the emission limitations in NSPS Subpart IIII (the generator will only be subject to the notification requirements of NESHAP ZZZZ). To verify compliance with these standards, emissions from the engines are calculated based on emissions factors provided by the manufacturers. Since this equipment will only operate during emergency situations and routine maintenance and testing, annual emissions are calculated based on 500 hours of operations.

2.4.2.3. Heater Emissions

The proposed process heaters will be fired on natural gas. Emission factors for NO_x, CO, PM, $PM_{2.5}$, PM_{10}, SO_2, lead, and VOC from AP-42 Section 1.4 were used.

The H_2SO_4 emission factor was calculated by assuming one percent of the sulfur contained within the natural gas is emitted as sulfuric acid in the same manner as for the boilers.

2.4.2.4. Cooling Towers

The Tabler Station facility includes three cooling towers. The anticipated pollutants are PM, PM_{10}, and $PM_{2.5}$. Potential hourly emissions from the cooling tower are calculated using the methodology in AP-42 Section 13.4-1.

2.4.2.5. Water and Wastewater Pretreatment

The Tabler Station facility will have water pretreatment onsite to maintain the quality of the cooling tower and boiler feed water. In addition, the facility will have pretreatment processes for the wastewater. The equipment in these areas may include tanks for wastewater collection and treatment and totes of treatment chemicals. Processes may include a dissolved air flotation unit, physical and chemical pretreatment, biological treatment, and settling tanks. Emissions were calculated using an engineering estimate of the amount of each treatment chemical used and its volatile and/or hazardous content.

2.5. PLASTICS MOLDING

2.5.1. Process Description

The Tablers Station facility will incorporate third party suppliers who will provide a plastics molding process for the manufacture of bottles, caps, and other formed plastic parts.

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[3] Emergency Planning and Community Right-To-Know Act, EPCRA - Section 313: Guidance for Reporting Sulfuric Acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size). (March 1998) EPA-745-R-97-007.

The plastic bottle and cap making process involves injection molding, blow molding, and extrusion blow molding. The process starts with the unloading of plastic pellets from railcars into storage silos. From the silos, the pellets are piped to presses and molding machines which make bottles, caps and other formed plastic parts depending on product needs. The presses and molding machines heat the plastic with electrical heaters and via friction heating. Scrap plastic is reground and reused directly in the making process.

Emissions calculations for the above listed equipment are enclosed in Attachment N of the application. Emissions have been estimated using either vendor supplied specifications or applicable AP-42 factors.

2.5.2. Emissions Calculations

2.5.2.1. Dry Material Handling

Plastic pellets are stored, conveyed and ground. Particulate emissions for these areas are estimated by the supplier based on the average of published factors available for other types of pellet storage, including grain and wood pellets.

2.5.2.2. Fugitive VOC

When the plastic pellets are heated to be pressed or molded they emit a small quantity of VOC. The VOC emitted is calculated using a factor from a fact sheet from the Michigan Department of Environmental Quality entitled "Plastics Production and Products Manufacturing" (#9847, revised November 2005).

The other fugitive VOCs are from cleaning products and are calculated assuming 100% loss rate of volatile components of cleaning products.

2.6. PLASTICS MOLDING UTILITIES

2.6.1. Process Description

To support the heating, cooling, and ventilation needs for the plastics molding suppliers, P&G is proposing to install the following equipment:[4]

- Six (6) natural gas fired building heaters;
- One (1) cooling tower; and
- One (1) 70kW standby/backup electric generator with natural gas engine.

The purpose of the building heaters is to provide comfort heating for the warehouse and other buildings. The cooling tower is for both comfort and process cooling water supply to buildings and manufacturing equipment associated with the various processes. The backup electric generator is to be prepared for power outages.

Emissions calculations for the above listed equipment are enclosed in Attachment N of the application. Emissions have been estimated using either vendor supplied specifications, applicable AP-42 factors, and/or mass balance equations associated to the type of emissions source listed above.

[4] Final sizes and numbers of equipment in the utilities area subject to change.

2.6.2. Emissions Calculations

Emissions calculation methodology for natural gas heaters, and cooling towers has already been discussed in Section 2.4.2. This section will discuss the emissions calculations for the natural gas engine that powers the standby/backup electric generator.

2.6.2.1. Standby/Backup Generator and Fire Pump

The generator engine proposed for the Tabler Station facility will be subject to the emission limitations in NSPS Subpart JJJJ. To verify compliance with these standards, emissions from the engines are calculated based on emissions factors provided by the manufacturers. Since this equipment will only operate during emergency situations and routine maintenance and testing, annual emissions are calculated based on 500 hours of operations.

2.7. SOURCES OF MINOR SIGNIFICANCE

Each of the process areas (surfactants, liquid soap A and B, dry consumer laundry and cleaning products A, utilities, and plastics molding) contain emissions units that Procter and Gamble defines as "sources of minor significance". Some of these sources are already defined as de minimis sources by DEP in 45 CSR 13, Table 45-13b, such as haul road emissions, lab vents, and welding. Additional sources, with emissions less than 0.5 tpy of any pollutant, such as tanks storing materials with a low volatility, have been added to a list of "sources of minor significance". A list of these sources can be found in page 2 of Attachment I.

3. R13 APPLICATION FORM

The DEP permit application forms contained in this application include all applicable R-13 application forms including the required attachments.

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☒ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office)*:
Procter and Gamble Manufacturing Company

2. Federal Employer ID No. ***(FEIN)***:
31-0411982

3. Name of facility *(if different from above)*:
Tabler Station

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
The Procter & Gamble Company
Sharon Woods Innovation Center
A2M11-3
11510 Reed Hartman Highway
Cincinnati, OH 45241

5B. Facility's present physical address:
Procter & Gamble
396 Development Drive
Inwood, WV 25428

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**
- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: **N/A**

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
- If **YES,** please explain: **Procter and Gamble owns the site.**
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.):
Facility will produce liquid consumer products and dry consumer laundry and cleaning products.

10. North American Industry Classification System **(NAICS)** code for the facility:
325612, 325613, 325620

11A. DAQ Plant ID No. (for existing facilities only):
–

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. **Include a MAP as Attachment B.**

Exit US Route 81 at exit 8 for Tabler Station Road. Proceed East on Tabler Station Road for 1.1 miles to Development Drive. Turn left on Development Drive and proceed approximately 0.2 miles to site entrance

12.B. New site address (if applicable):	12C. Nearest city or town: **Inwood, WV**	12D. County: **Berkeley County, WV**
12.E. UTM Northing (KM): **4,366**	12F. UTM Easting (KM): **757**	12G. UTM Zone: **17S**

13. Briefly describe the proposed change(s) at the facility:
New Facility

14A. Provide the date of anticipated installation or change: **11/01/2016** – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: **04/01/2017**

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day **24** Days Per Week **7** Weeks Per Year **52**

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☒ Bulk Liquid Transfer Operations	☒ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	
☐ Grey Iron and Steel Foundry	☒ Indirect Heat Exchanger	☒ Storage Tanks

☒ General Emission Unit, specify **Surfactant Making, Liquid Soap A and B Packing and Filling, Dry Consumer Laundry and Cleaning Products Coating, Plastics Molding Supplier**

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☒ Baghouse	☒ Flare (RTO)
☐ Adsorption Systems	☐ Condenser	☒ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☒ Wet Collecting System

☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** **X NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ *(Please use blue ink)* DATE: Oct 4 2016 *(Please use blue ink)*

35B. Printed name of signee: **Francisco Lanza**		35C. Title: Manufacturing Platform Associate Director
35D. E-mail: Lanza.fs@pg.com	36E. Phone: 513-626-6440	36F. FAX:
36A. Printed name of contact person (if different from above): **Drew Hadley**		36B. Title: **Environmental Health and Safety Manager NA Supply Network Design**
36C. E-mail: **hadley.ja@pg.com**	36D. Phone: **513-765-0497**	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☒ **Attachment B: Map(s)**
- ☒ **Attachment C: Installation and Start Up Schedule**
- ☒ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☒ **Attachment N: Supporting Emissions Calculations**
- ☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☐ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☐ **Attachment S: Title V Permit Revision Information**
- ☐ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ *Forward 1 copy of the application to the Title V Permitting Group and:*
- ☐ *For Title V Administrative Amendments:*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit,*
- ☐ *For Title V Minor Modifications:*
  - ☐ *Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,*
  - ☐ *NSR permit writer should notify Title V permit writer of draft permit.*
- ☐ *For Title V Significant Modifications processed in parallel with NSR Permit revision:*
  - ☐ *NSR permit writer should notify a Title V permit writer of draft permit,*
  - ☐ *Public notice should reference both 45CSR13 and Title V permits,*
  - ☐ *EPA has 45 day review period of a draft permit.*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

Current Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
THE PROCTER AND GAMBLE MANUFACTURING COMPANY
1 PROCTER AND GAMBLE PLZ
CINCINNATI, OH 45202-3315

BUSINESS REGISTRATION ACCOUNT NUMBER: **2310-7855**

This certificate is issued on: **02/27/2015**

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1208926528

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State,
of the State of West Virginia, hereby certify that

The Procter and Gamble Manufacturing Company

has filed the appropriate registration documents in my office according to the provisions of the West Virginia Code and hereby declare the organization listed above as duly registered with the Secretary of State's Office.

Given under my hand and
the Great Seal of West Virginia
on this day of
February 23, 2015

Natalie E Tennant

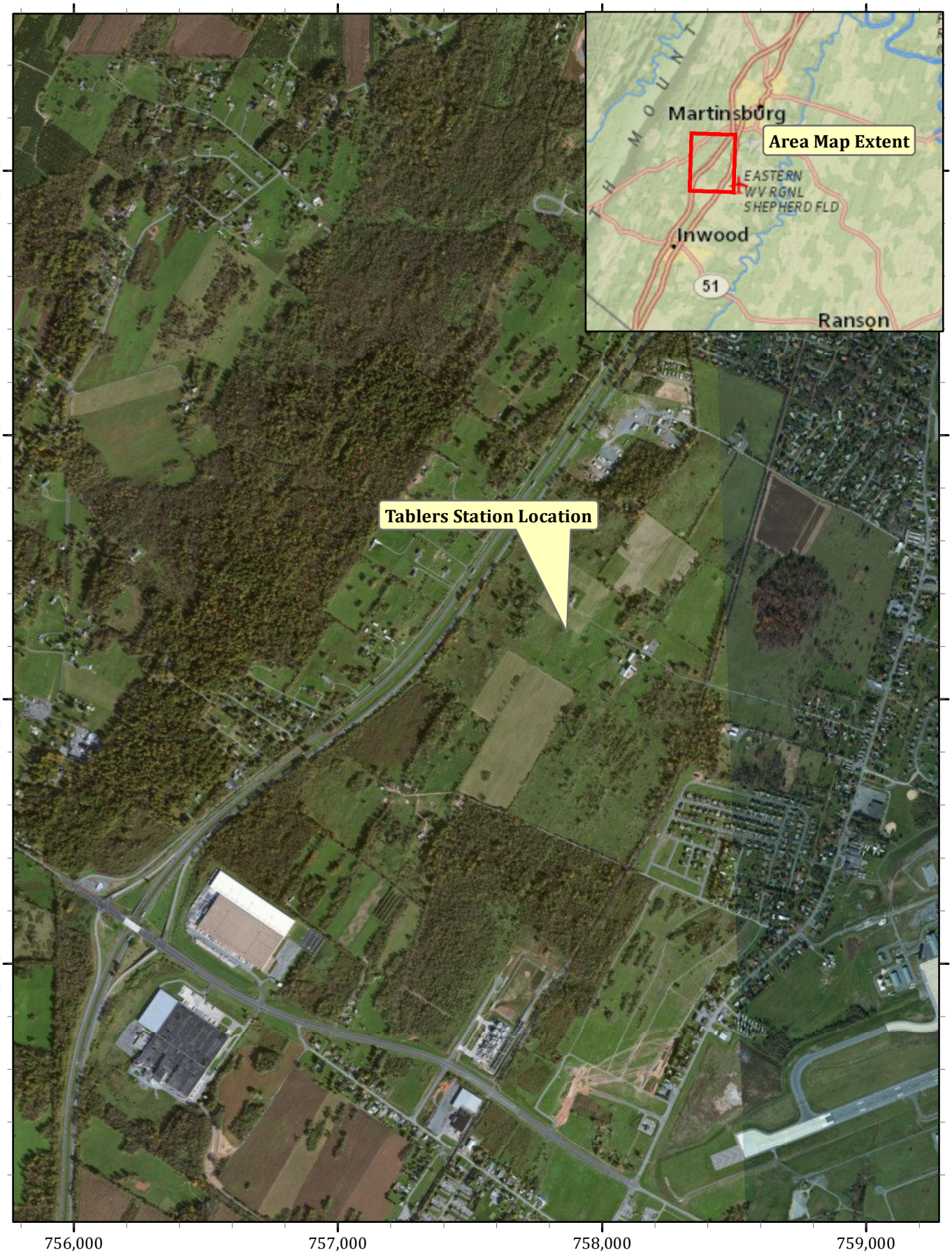
Secretary of State

ATTACHMENT B

Aerial Map

Attachment B - Aerial Map

Procter and Gamble



All coordinates shown in UTM projection, Zone 17, NAD 83

Trinity Consultants

ATTACHMENT C

Startup and Installation Schedule

Attachment C		
Schedule of Planned Installation and Start-Up		
Unit	**Installation Schedule**	**Startup Schedule**
Surfactant Making Liquid Soap A and B Dry Consumer Products A Utilities	December 2016	April 2017
Plastics Molding Area Plastics Molding Utilities	December 2016	August 2017

ATTACHMENT D

Regulatory Applicability Discussion

ATTACHMENT D – REGULATORY APPLICABILITY

This section documents the applicability determinations made for Federal and State air quality regulations. The monitoring, recordkeeping, reporting, and testing plan is presented in Attachment O. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD) permitting;
- Minor New Source Review;
- Title V of the 1990 Clean Air Act Amendments;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- West Virginia State Implementation Plan (SIP) regulations.

This review is presented to supplement and/or add clarification to the information provided in the West Virginia Department of Environmental Protection (DEP) Rule 13 (R-13) permit application forms. In addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations, allowing the DEP to confirm that identified regulations are not applicable to the proposed project. Note that explanations of non-applicability are limited to those regulations for which there may be some question of applicability specific to the operations at the Tabler Station facility. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

Prevention of Significant Deterioration (PSD) Source Classification

Federal construction permitting programs regulate new and modified sources of attainment pollutants under PSD and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NNSR). The Tabler Station facility will be located in Berkeley County, West Virginia, which is designated as in attainment/unclassifiable for all pollutants. Therefore, PSD permitting is potentially applicable to the facility. PSD permitting in West Virginia is regulated under Title 45, Series 14, West Virginia Code of State Regulations (45 CSR 14).

PSD permitting applies to construction of new major stationary sources or any physical change in, or change in the method of operation of an existing major stationary source that results in a significant emissions increase. A major stationary source for PSD is defined as:

- Any source in one of the listed source categories in the definition of "major stationary source" per 45 CSR 14-2.43 with the potential-to-emit (PTE) of 100 tons per year (tpy) or more of traditionally regulated pollutants, or
- Any source not in one of the listed source categories with a PTE of 250 tpy or more of any traditionally regulated pollutant.

A review of the legislative background and PSD regulations does not clearly indicate SIC as the defining factor for categorization of a facility as a chemical process plant. However, EPA has historically interpreted the category "chemical process plants" as including any activity listed under SIC major grouping 28 (with a recent specific exception for ethanol production facilities). SIC 28 has a broader scope than sites where chemical processes are occurring, as SIC 28 is defined as Chemicals and Allied Products, and not simply chemicals. The Allied Products portion of SIC 28 includes multiple activities where there is no chemical processing at all, such as physical blending of ingredients to make finished chemical products to be used for ultimate consumption such as drugs, cosmetics, and soaps [cited from SIC 28 definition]. Most of the proposed site would be classified under SIC 284,

SOAP, DETERGENTS, AND CLEANING PREPARATIONS, PERFUMES, COSMETICS, AND OTHER TOILET PREPARATIONS

Following EPA's historic determination, these non-chemical process areas would be considered to be chemical process plants, and thus the facility falls into the group of source categories subject to a 100 tpy major source threshold. Because the facility-wide PTE for each pollutant is less than 100 tpy, the Tabler Station facility will be a new minor source under PSD. As such, PSD permitting is not triggered by this construction activity.

The Tabler Station facility is anticipated to include additional process areas as part of the overall scope of the Tabler Station project. Any additional process areas related to the project which are currently undergoing detailed design will be permitted at a later date. It is anticipated that all phases of this project will be permitted, installed, and operational within 5 years of beginning construction. A thorough analysis of the current scope of the entire facility and planned operations indicates that all phases together do not trigger PSD permitting.

Minor New Source Review Source Classification

The minor (or state) NSR program is codified in 45 CSR 13, and is typically known as an R-13 permit. The proposed Tabler Station facility does not qualify for any categorical exemptions, and thus the potential emission rate for the facility is compared against the emission threshold in 45 CSR 13-2.24(b) and 45 CSR 13-2.24(b). As calculated in Attachment N, the proposed project triggers minor NSR for PM, PM_{10}, $PM_{2.5}$, VOC, NO_X, CO, and HAP. In compliance with R-13, P&G is submitting the attached permit application for the installation of a consumer products facility at Tabler Station, West Virginia.

Title V Operating Permit Program

Title 40 of the Code of Federal Regulations Part 70 (40 CFR 70) establishes the federal Title V operating permit program. West Virginia has incorporated the provisions of this federal program in its Title V operating permit program in 45 CSR 30. The major source thresholds with respect to the West Virginia Title V operating permit program regulations are 10 tons per year (tpy) of a single HAP, 25 tpy of any combination of HAPs, and 100 tpy of all other regulated pollutants.[1] The potential emissions of VOC are below the 100 tpy threshold at this facility. Therefore, the Tabler Station facility is not a major source for Title V purposes.

New Source Performance Standards

NSPS require new, reconfigured, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of NSPS Subpart A, unless specifically excluded. Following is a discussion of potentially applicable subparts for the proposed emission sources at the Tabler Station facility.

NSPS Subpart A – General Provisions

Any source subject to a NSPS is also subject to the general provisions of NSPS Subpart A, unless specifically excluded.

NSPS Subpart H – Sulfuric Acid Plants

NSPS Subpart H applies to sulfuric acid production units, which are defined as (**emphasis** added):

[1] EPA's Tailoring Rule had established a Title V major source threshold of 100,000 tpy of greenhouse gas pollutants or GHGs (on a carbon dioxide equivalent [CO_2e] basis). However, on June 23, 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA*, whereby the Court said that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. Case No. 12-1146, decided June 23, 2014. http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf .

*(a) Sulfuric acid production unit means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but **does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere** of sulfur dioxide or other sulfur compounds.*[2]

Procter and Gamble intends to use the reactors primarily to produce surfactant for use in their products. The surfactant making process at Tabler Station produces sulfuric acid to prevent sulfur dioxide emissions to the atmosphere. Sulfuric acid is typically produced during transition periods such as startup, shutdown, or when a reactor is changing over to produce a different type of surfactant. However, because of the phased startup of the facility as a whole, Procter and Gamble anticipates that there may be periods when, in order to fully utilize the equipment, a reactor may be dedicated to sulfuric acid production. Though Procter and Gamble hopes to find an interested buyer for the sulfuric acid, the sulfuric acid will not be produced as the primary product of the surfactant making system. Sulfuric acid sales are not the financial objective of the reactor installation.

Though the Tabler Station facility will produce sulfuric acid, it is not the primary purpose of the surfactant making operation. The sulfuric acid making is used primarily as a means of preventing sulfur dioxide emissions from entering the atmosphere, and will not generally be produced as a stand-alone product. Therefore, the Tabler Station facility is exempt from Subpart H.

NSPS Subpart Dc – Steam Generating Units

The NSPS Subpart Dc applicability definition provides:

(a) …the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.6 MW (10 million Btu/hr)[3]

The three main boilers at the site have a rated heat input capacity of 62 MMBtu/hr, 62 MMBtu/hr, and 31 MMBtu/hr and are subject to this rule. In addition, the 11 MMBtu/hr temporary boiler is also subject to this rule. The boilers will only combust natural gas. The requirements that apply for natural gas boilers are to record and maintain records of the amount of fuel combusted during each calendar month and maintain certifications from the natural gas supplier guaranteeing sulfur content of the fuel.

NSPS Subpart Kb – Storage Tanks

NSPS Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels*, regulates storage vessels with a design capacity greater than or equal to 75 cubic meters (m^3) that store volatile organic liquids. The standards are effective for all facilities for which construction, reconstruction, or modification commenced after July 23, 1984. Storage vessels with a capacity greater than or equal to 151 cubic meters (m^3) storing a liquid with a maximum true vapor pressure, excluding water, less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from the requirements of this rule.

The tanks at the Tabler Station facility meet the exemption requirements of this rule. Therefore, the Tabler Station facility is exempt from NSPS Kb.

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[2] 40 CFR 60.81
[3] 40 CFR §60.40c(a)

NSPS VVa – SOCMI Equipment Leaks

Per 40 CFR 60.480a (b), NSPS VVa applies to any affected facility that commences construction, reconstruction, or modification after November 7, 2006, where an affected facility is the group of all equipment within a process. The definition of "process unit" and "equipment" are as follows per 40 CFR 60.480a (f)(2):

> *Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.*
>
> *Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.*

The only chemical produced either as a final product or as an intermediate from the list given in §60.489 of this part at the Tabler Station facility is dioxane (CAS #123-91-1), an unintended byproduct produced during the surfactant making process at a very low concentration. Therefore, P&G has a potential "process unit" as defined under NSPS VVa. For purposes of compliance with NSPS VVa, the "affected facility" is the group of all equipment within the surfactants process unit. This process unit will be constructed after November 7, 2006. As such, the group of all equipment in the surfactants process unit is subject to the requirements codified in NSPS VVa. Per 40 CFR 60.480a (d), the following exemptions are available under NSPS VVa:

- Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 is exempt from §§60.482–1a through 60.482–11a.
- If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§60.482–1a through 60.482–11a.
- Any affected facility that produces beverage alcohol is exempt from §§60.482–1a through 60.482–11a.
- Any affected facility that has no equipment in VOC service is exempt from §§60.482–1a through 60.482–11a.

The P&G surfactant making process produces dioxane in extremely small quantities as an unintended byproduct. Less than 1,000 Mg/year of dioxane is produced; therefore the Tabler Station facility qualifies for the first exemption. As such, P&G does not operate an "affected facility" under NSPS VVa and, as such, P&G is not subject to the requirements listed in §§60.482–1a through 60.482–11a. However, P&G is required to keep records onsite to document the exemption.

NSPS III – SOCMI Air Oxidation Reactor

Per 40 CFR 60.610(a), NSPS III applies to each affected facility that is part of a process unit that produces any of the chemicals listed in 40 CFR 60.617 as a product, co-product, by-product, or intermediate. An affected facility is any of the following for which construction, modification, or reconstruction commenced after October 21, 1983:[4]

- Each air oxidation reactor not discharging its vent stream into a recovery stream;
- Each combination of an air oxidation reactor and the recovery system into which its vent stream is discharged; or
- Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

"Air oxidation reactor" and "process unit" are defined in 40 CFR 60.611 as follows:

[4] 40 CFR 60.610(b)

Air Oxidation Reactor means any device or process vessel in which one or more organic reactants are combined with air, or a combination of air and oxygen, to produce one or more organic compounds. Ammoxidation and oxychlorination reactions are included in this definition.

Process Unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in §60.617. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Tabler Station operations do not include an air oxidation reactor as defined above, nor do they produce a chemical listed in 40 CFR 60.610. Therefore, P&G does not operate an "affected facility" under NSPS III and, as such, Tabler Station is not subject to the requirements therein.

NSPS RRR – SOCMI Reactors

Per 40 CFR 60.700(a), NSPS RRR applies to each affected facility that is part of a process unit that produces any of the chemicals listed in 40 CFR 60.707 as a product, co-product, by-product, or intermediate. An affected facility is any of the following for which construction, modification, or reconstruction commenced after June 29, 1990:[5]

- Each reactor process not discharging its vent stream into a recovery stream;
- Each combination of a reactor process and the recovery system into which its vent stream is discharged; or
- Each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged.

"Reactor processes" and "process unit" are defined in 40 CFR 60.701 as follows:

Reactor processes are unit operations in which one or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

Process unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in §60.707. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

The Tabler Station facility will contain a reactor process constructed after June 29, 1990. Therefore, the reactor process meets the definition of "affected facility" under NSPS RRR. However, this reactor process does not produce any of the affected chemicals listed in 40 CFR 60.707. As such, the P&G reactor process is not subject NSPS RRR.

NSPS IIII – Stationary Compression Ignition Internal Combustion Engines

This subpart is applicable to owners and operators of stationary compression ignition internal combustion engines (CI ICE). There will be five CI ICE onsite, three for backup/standby use only (350 kilowatt [kW]) and two fire pump engines (311 horsepower [hp]). The backup/standby generator engines are subject to the emission standards in Table 1 of the subpart, while the fire pump engines are subject to emission standards in Table 4 of the subpart. Both kinds of engines are required to use low-sulfur diesel. The backup/standby generator engines will only be used under maintenance conditions or during a loss of power to the site; they will have a limit of 100 hours per year (each) for operation in non-emergency situations. The hours the backup/standby generator engines are operated will be tracked with a non-resettable hour meter. Recordkeeping and monitoring requirements may apply to the backup/standby generator engines and the fire pump engine.

[5] 40 CFR 60.700(b)

NSPS JJJJ – Stationary Spark Ignition Internal Combustion Engines

This subpart is applicable to owners and operators of stationary spark ignition internal combustion engines (SI ICE). There will be one SI ICE onsite for backup/standby use only which powers a 70 kilowatt [kW] generator. The backup/standby generator engine is subject to the emission standards in 40 CFR 1054. The backup/standby generator engine will only be used under maintenance conditions or during a loss of power to the site; it will have a limit of 100 hours per year for operation in non-emergency situations. The hours the backup/standby generator engine is operated will be tracked with a non-resettable hour meter. Recordkeeping and monitoring requirements may apply to the backup/standby generator engine.

Non-Applicability of All Other NSPS

NSPS are developed for particular industrial source categories. All other NSPS are categorically not applicable to the proposed change.

National Emission Standards for Hazardous Air Pollutants (NEHSAP)

National Emissions Standards for Hazardous Air Pollutants (NESHAP), federal regulations found in Title 40 Part 61 and 63 of the CFR, are emission standards for HAP. NESHAP are applicable to both major sources of HAP (facilities that exceed the major source thresholds of 10 tpy of a single HAP and 25 tpy of any combination of HAP from stationary sources) as well as non-major sources (termed "area sources"). NESHAP apply to sources in specifically regulated industrial source classifications (Clean Air Act Section 112(d)) or on a case-by-case basis (Clean Air Act Section 112(g)) for facilities not regulated as a specific industrial source type. The Tabler Station facility is an area source of HAP. As such, this document only addresses regulatory applicability for area sources and does not include MACT standards for major sources (e.g., 40 CFR Part 63 Subpart FFFF, or the MON).

NESHAP 4Z – Reciprocating Internal Combustion Engines

NESHAP 4Z establishes emission limitations and operating limitations for HAP emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP.

Per 40 CFR 6590 (c)(1), new stationary RICE located at an area source may show compliance with NESHAP 4Z by being in compliance with NSPS 4I or NSPS 4J. All stationary RICE P&G are new and located at an area source of HAP emissions. Therefore, by maintaining compliance with NSPS 4I or NSPS 4J, P&G can demonstrate compliance with NESHAP 4Z.

NESHAP 6J – Area Source Boilers

The area source boiler NESHAP regulates industrial, commercial, and institutional boilers that burn solid fossil fuel, biomass, or liquid fuel. The four boilers at the Tabler Station facility will burn natural gas. Per 40 CFR 63.11237, all of the boilers at the Tabler Station facility qualify as gas-fired boilers.

> *Gaseous fuels includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas.*
>
> *Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.*

Gas-fired boilers are exempt from requirements contained in this regulation, per 40 CFR 63.11195(e). Therefore, the facility is not subject to NESHAP 6J.

NESHAP 6V – Chemical Manufacturing Area Sources (CMAS)

Per 40 CFR 63.11494(a), the CMAS applies a chemical manufacturing process unit (CMPU) that meets the following criteria:

- The CMPU is located at an area source of HAP emissions; and
- HAP listed in Table 1 of the CMAS are present in the CMPU as follows:
  - The CMPU uses as feedstock, any material that contains quinoline, manganese, and/or trivalent chromium at an individual concentration greater than 1.0 percent by weight, or any other Table 1 HAP at an individual concentration greater than 0.1 percent by weight. To determine the Table 1 HAP content of feedstocks, you may rely on formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet (MSDS) for the material. If the concentration in an MSDS is presented as a range, use the upper bound of the range.
  - Quinoline is generated as by-product and is present in the CMPU in any liquid stream (process or waste) at a concentration greater than 1.0 percent by weight.
  - Hydrazine and/or Table 1 organic HAP other than quinoline are generated as by-product and are present in the CMPU in any liquid stream (process or waste), continuous process vent, or batch process vent at an individual concentration greater than 0.1 percent by weight.
  - Hydrazine or any Table 1 HAP is produced as a product of the CMPU.

The Tabler Station facility is an area source of HAP emissions. However, there are no Table 1 HAPs present in any of the Tabler Station facility operations. Therefore, the facility is not subject to the CMAS.

NESHAP 7B – Chemical Preparations Area Sources

Per 40 CFR 63.11579(a), NESHAP 7B applies if all of the following conditions are met:

- Operate a chemical preparations facility;
- The chemical preparations facility is a stationary area source of HAP; and
- The chemical preparations facility has at least one chemical preparations operation in target HAP service.

"In target HAP service" is defined under 40 CFR 63.11588 as follows:

> *In target HAP service means that equipment in the chemical preparation operation either contains, contacts, or is processing target HAP-containing materials.*

Additionally, "target HAP" are defined as metal compounds for chromium, lead, manganese, and nickel. The Tabler Station facility does not have a chemical preparation operation that contains, contacts, or processes any metal compounds for chromium, lead, manganese, and/or nickel. Therefore, the Tabler Station facility is not subject to NESHAP 7B.

Non-Applicability of All Other NESHAP

Similar to NSPS, NESHAP are developed for particular industrial source categories. All other NESHAP are categorically not applicable to the proposed change.

West Virginia SIP Regulations

The proposed project at the Tabler Station facility is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (Code of State Regulations). West Virginia regulations potentially applicable to the proposed project are discussed below.

45 CSR 2: Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

45 CSR 2 applies to fuel burning units, defined as equipment burning fuel "for the primary purpose of producing heat or power by indirect heat transfer". The boilers at the Tabler Station facility meets this definition and are therefore subject to 45 CSR 2. Per 45 CSR 2-3, opacity of emissions from the boilers shall not exceed 10 percent are based on a six minute block average. Per 45 CSR 2-4, the particulate emissions limit for Type 'b' fuel burning units[6] is the product of 0.09 and the total design heat input (62 MMBtu/hr and 31 MMBtu/hr), which is 5.58 pounds per hour (lb/hr) and 2.79 lb/hr, respectively.

45 CSR 4: To Prevent Objectionable Odors

45 CSR 4-2.01 specifies that:

> *No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.*

P&G takes precautions to assure compliance with this rule. Accidental or other infrequent emissions of odor are not provisions of this rule. This regulation is not federally enforceable.

45 CSR 6: To Prevent and Control Air Pollution from Combustion of Refuse

45 CSR 6 sets forth requirements for limiting emissions from incineration which is defined as "the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of this rule, the destruction of any combustible liquid or gaseous material by burning in a flare or flare stack, thermal oxidizer, or thermal catalytic oxidizer stack shall be considered incineration." The proposed regenerative thermal oxidizer meets this definition and is therefore subject to this regulation.

The regenerative thermal oxidizer will be subject to the PM emission limits in 45 CSR 6-4.1. In addition, opacity from the regenerative thermal oxidizer will be limited to 20% per 45 CSR 6-4.3 except as provided in 45 CFR 6-4.4.

45 CSR 7: To Prevent and Control Particulate Matter from Manufacturing Processes

45 CSR 7 regulates PM emissions from manufacturing processes and associated operations. 45 CSR 7-3, requires a 20% opacity limit from all process source operations. Section 45 CSR 7-4 and Table 45-7A set particulate emissions limits based on the total weight of all materials used by the facility, also known as the process weight. The different process areas at the Tabler Station facility qualify under different classifications as part of the rule. The surfactants area is a mineral acid producing area,[7] subject to limits in Table 45-7B. The liquid soap, dry consumer laundry and cleaning products, and plastics molding areas qualify as Type 'a' facilities.[8] The utilities area is covered under 45 CSR 2, and is exempt from this rule, according to 45 CSR 5-10.1. The maximum allowable total stack emission rate for each area are shown in Table D-1.

---

[6] Per 40 CSR 2-10 (b): "Type 'b' means any fuel burning unit not classified as a Type 'a' or Type 'c' unit such as industrial pulverized-fuel-fired furnaces, cyclone furnaces, gas-fired and liquid-fuel-fired units."
[7] The mineral acid, sulfuric acid, is an incidental byproduct of surfactant manufacturing.
[8] Per 45 CSR 7-2.39(a), "Type 'a' means any manufacturing process source operation involving glass melting, calcination, or **physical change** except as noted in type 'c' below." (**emphasis** added)

Table D-1. Process Weight Rule Limits

Process Area	Process Weight Rate	Max Stack Emission Rate
Surfactants	"Mineral Acid" – Table 45-7B	35 mg/m3
Liquid Soap A and B	>600,000 lb/hr	50 lb/hr
Dry Consumer Laundry and Cleaning Products	>600,000 lb/hr	50 lb/hr
Plastics Making	>20,000 lb/hr	16 mg/m^3
Utilities	Exempt - Covered Under 45 CSR 2	
Plastics Making Utilities	Exempt - Covered Under 45 CSR 2	

45 CSR 10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

45 CSR 10 applies to fuel burning units, defined as equipment burning fuel "for the primary purpose of producing heat or power by indirect heat transfer". The boilers at the Tabler Station facility meets this definition and is therefore subject to 45 CSR 10. Since Berkeley County is in a Priority III region, per 45 CSR 10-3.1(e), the sulfur dioxide weight emissions standard is the product of 3.2 and the total design heat input (166 MMBtu/hr), or 531 lb/hr.

45 CSR 16: Standards of Performance for New Stationary Sources

This rule adopts the standards of performance for new stationary sources set forth in 40 CFR Part 60 by reference. Potentially applicable NSPS are discussed above.

45 CSR 21: To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds

45 CSR 21 is intended to require reasonably available control technology for VOC sources in Putnam, Kanawha, Cabell, Wayne, and Wood Counties. As such, these requirements do not apply to VOC sources in Berkeley County.

45 CSR 27: To Prevent and Control the Emissions of Toxic Air Pollutants

West Virginia regulates the emissions of toxic air pollutant emissions through 45 CSR 27. A facility that discharges, or may discharge, a toxic pollutant into the open atmosphere in quantities greater than those delineated in Table A of this rule is required to employ Best Available Technology (BAT) on all chemical processing equipment emitting the pollutant.

The equipment at the Tabler Station facility discharges trace amounts of benzene and formaldehyde during natural gas combustion. However, the Tabler Station facility does not discharge benzene and formaldehyde in a quantity greater than listed in Table A, as shown in Table D-2. As such, this regulation does not apply to the project at the Tabler Station facility.

Table D-2. Evaluation of Toxic Air Pollutants

Pollutant[1]	45 CSR 27 Emission Rate Threshold[1] (lb/yr)	Tabler Station Emission Rate (lb/yr)	Is 45 CSR 27 Applicable?
Acrylonitrile	500	0	No
Allyl Chloride	10,000	0	No
Benzene	1,000	<1	No
1, 3 Butadiene	500	0	No
Carbon Tetrachloride	1,000	0	No
Chloroform	1,000	0	No
Ethylene Dichloride	1,000	0	No
Ethylene Oxide	500	0	No
Formaldehyde	1,000	<1	No
Methylene Chloride	5,000	0	No
Propylene Oxide	5,000	0	No
Trichloroethylene	10,000	0	No
Vinyl Chloride	1,000	0	No
Vinylidene Chloride	2,000	0	No

[1] From 40 CSR 27, Table A

45 CSR 31 Confidential Information

45 CSR 31 describes the requirements for claiming confidential information, and the procedures for determinations of confidentiality. Confidentiality may be claimed if the Director determines that the facility meets the criteria detailed in 45 CSR 31-4.1 (a-e). P&G has determined that the Tabler Station R-13 application does not meet the criteria for confidential submittal.

45 CSR 34: Emission Standards for Hazardous Air Pollutants

This rule adopts the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) by reference. Potentially applicable NESHAP are discussed above.

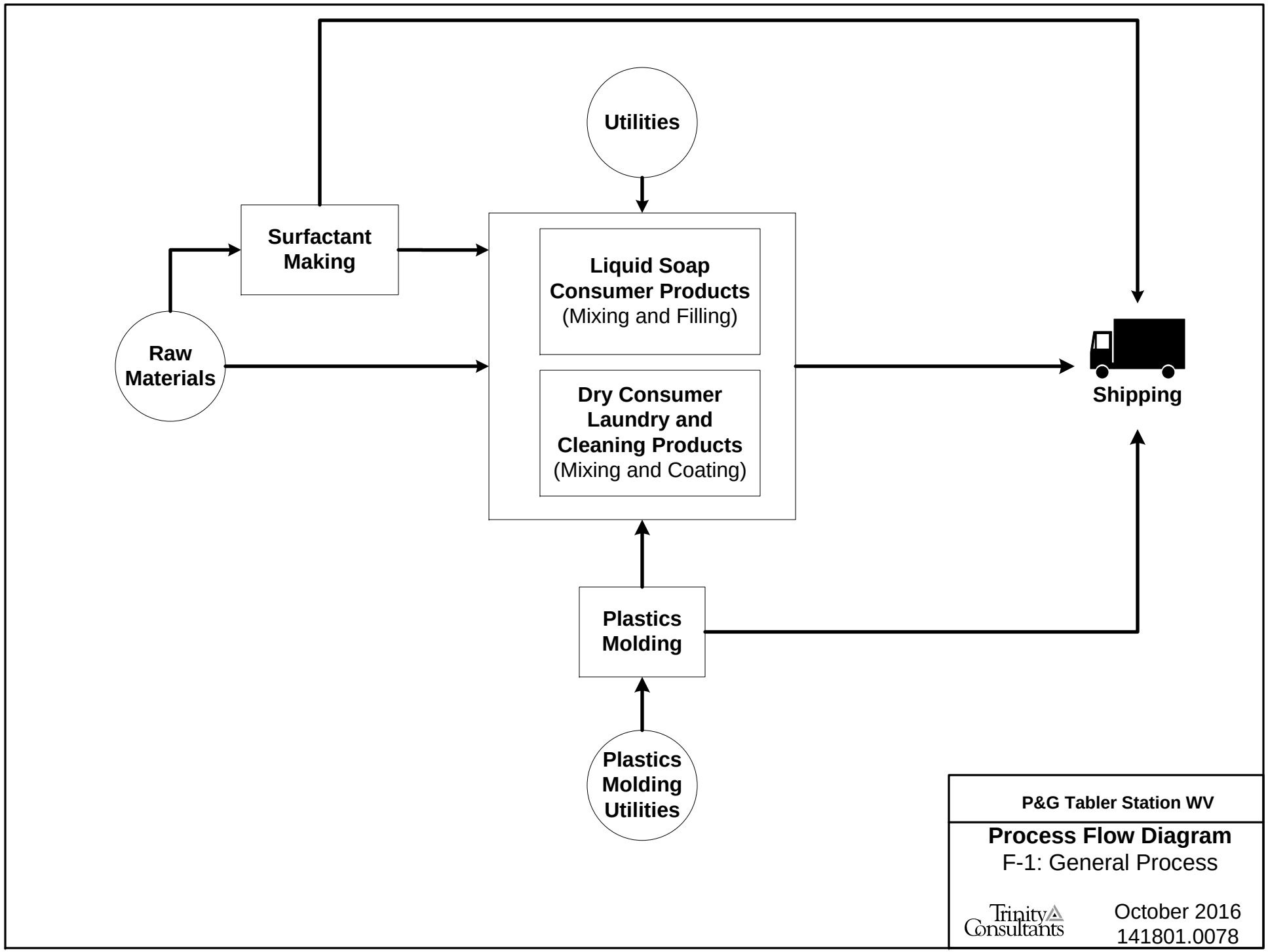
ATTACHMENT E

Plot Plan


75' BUFFER YARD
25' BUFFER YARD
75' BUFFER YARD
25' BUFFER YARD
100' BUFFER YARD
FUTURE
FUTURE
FUTURE
25' BUFFER YARD
75' BUFFER YARD
50' SETBACK FROM WWRR
WINCHESTER & WESTERN RAILROAD (DB. 409 PG. 125)
50' SETBACK FROM WWRR

ATTACHMENT F

Detailed Process Flow Diagram



P&G Tabler Station WV

Process Flow Diagram

F-1: General Process

Trinity Consultants

October 2016

141801.0078

Raw Material Unloading

Raw Materials Handling, Storage and Transfer

Fugitive

Surfactant Making Process

During Startup/Shutdown Changeover

Sulfur Dioxide Scrubber

Sulfur Trioxide Absorber

Incidental By Product: Sulfuric Acid Handling, Storage, and Transfer

Fugitive

Sulfuric Acid and PAM Loading

Incidental By Product: Precipitated Acid Mix Handling, Storage, and Transfer

Neutralization Process

Fugitive

Finished Product Handling, Storage and Transfer

For Onsite and Offsite Use

Legend

Process Flow

Emissions

P&G Tabler Station WV

Process Flow Diagram

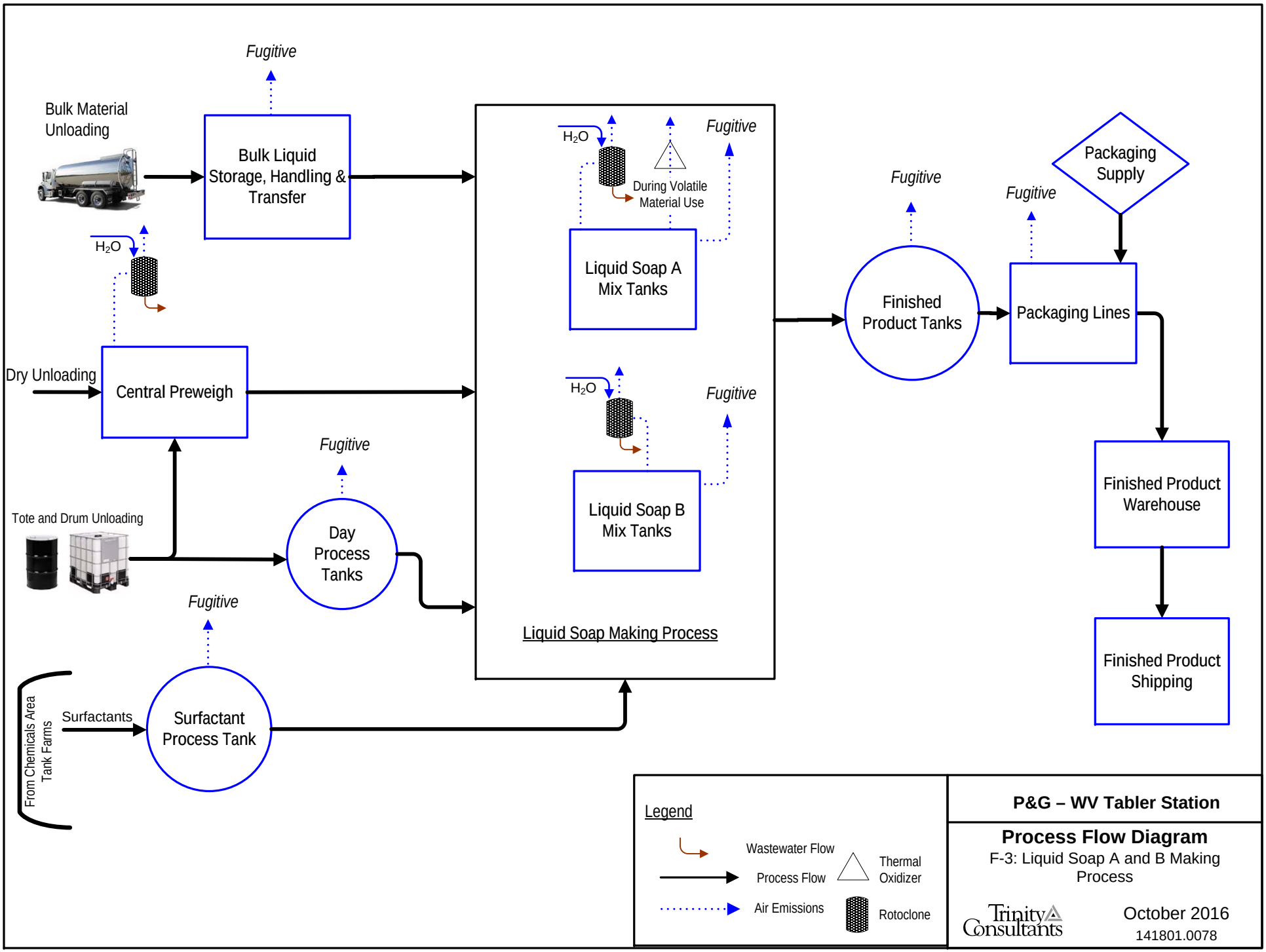
F-2: Surfactants Process

Project: 141801.0078

October 2016

Prepared by:

Trinity Consultants


Fugitive
Bulk Material Unloading
Bulk Liquid Storage, Handling & Transfer
H2O
Fugitive
During Volatile Material Use
Liquid Soap A Mix Tanks
Fugitive
Packaging Supply
Fugitive
Finished Product Tanks
Packaging Lines
Dry Unloading
Central Preweigh
H2O
Fugitive
Liquid Soap B Mix Tanks
Finished Product Warehouse
Fugitive
Tote and Drum Unloading
Day Process Tanks
Liquid Soap Making Process
Fugitive
From Chemicals Area Tank Farms
Surfactants
Surfactant Process Tank
Finished Product Shipping
Legend
Wastewater Flow
Process Flow
Air Emissions
Thermal Oxidizer
Rotoclone
P&G – WV Tabler Station
Process Flow Diagram
F-3: Liquid Soap A and B Making Process
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October 2016
141801.0078

Solid Material Unloading

Solid Material Storage, Handling & Transfer

Intermediate Mixing

Fugitive

Liquids Unloading

Liquids Storage, Handling & Transfer

Fugitive

Raw Material Addition and Preparation for Packaging

Tote and Drum Unloading

Day Process Tanks

Substrate

Fugitive

Packaging Supply

Packaging

Finished Product to Warehouse and Shipping

P&G – Tabler Station WV

Process Flow Diagram

F-4: Simple Dry Consumer Products A

Legend

Process Flow

Emissions

Filter

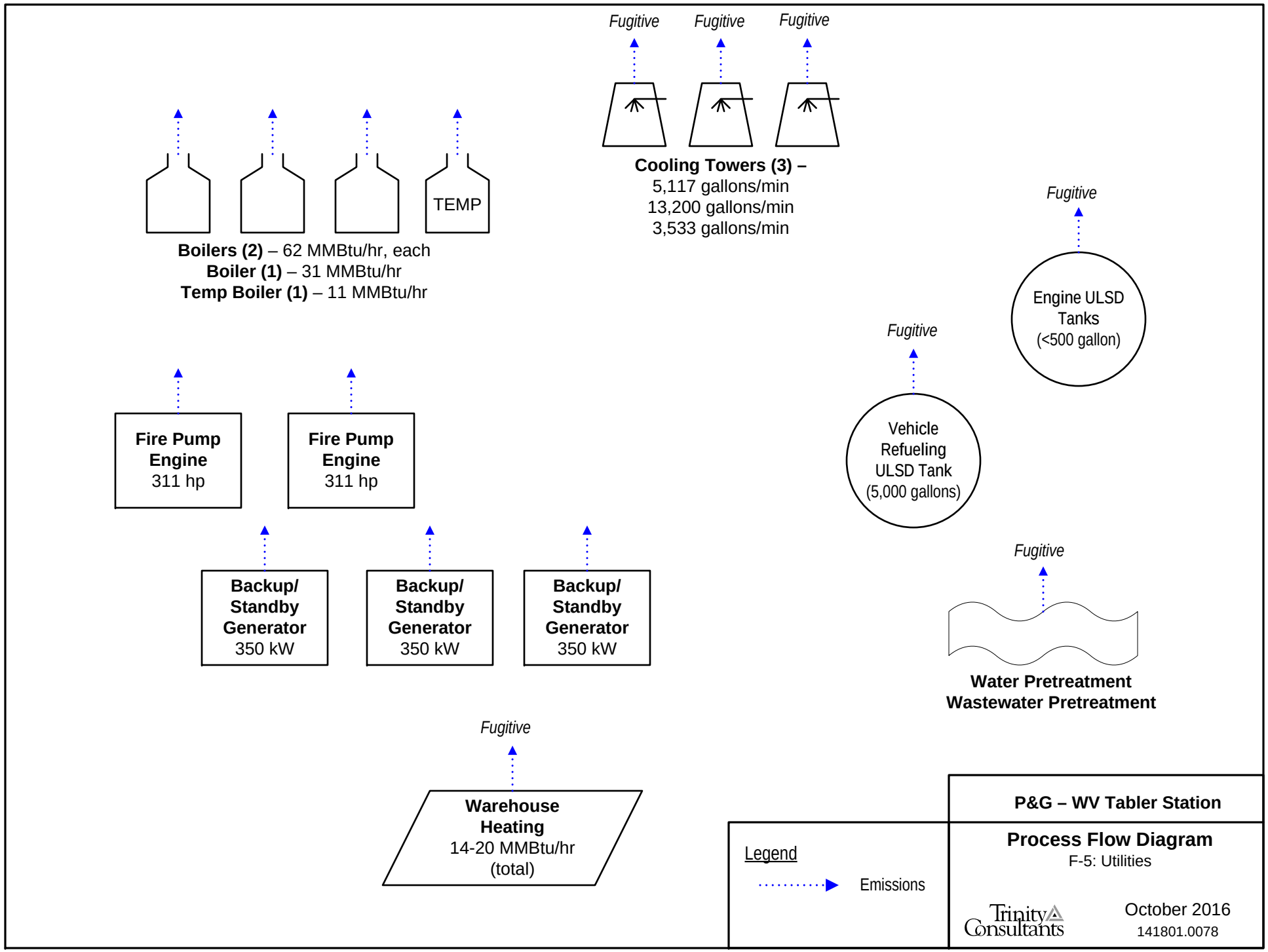
Baghouse

Project: 141801.0078

October 2016

Prepared by:

Trinity Consultants


Fugitive
Fugitive
Fugitive
TEMP
Cooling Towers (3) –
5,117 gallons/min
13,200 gallons/min
3,533 gallons/min
Boilers (2) – 62 MMBtu/hr, each
Boiler (1) – 31 MMBtu/hr
Temp Boiler (1) – 11 MMBtu/hr
Fugitive
Engine ULSD Tanks (<500 gallon)
Fugitive
Vehicle Refueling ULSD Tank (5,000 gallons)
Fire Pump Engine 311 hp
Fire Pump Engine 311 hp
Backup/ Standby Generator 350 kW
Backup/ Standby Generator 350 kW
Backup/ Standby Generator 350 kW
Fugitive
Water Pretreatment
Wastewater Pretreatment
Fugitive
Warehouse Heating 14-20 MMBtu/hr (total)
Legend
Emissions
P&G – WV Tabler Station
Process Flow Diagram
F-5: Utilities
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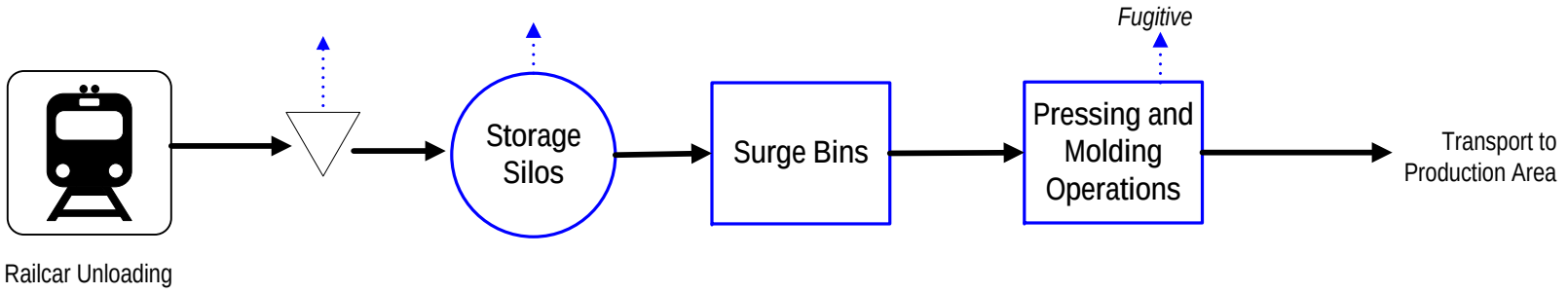
October 2016
141801.0078



Parts Washing

Plastic Regrind

General Process Cleaning

Backup/ Standby Generator

Cooling Tower

Space Heating

Legend

Process Flow

Emissions

Cyclone

P&G – WV Tabler Station

Process Flow Diagram

F-6: Plastics Molding Supplier

Trinity Consultants

October 2016

141801.0078

ATTACHMENT G

Process Description

ATTACHMENT G – PROCESS DESCRIPTION

As part of this project, P&G proposes to install equipment in the following different business areas:

- Surfactant Manufacturing;
- Liquid Soap Making A and B;
- Dry Consumer Products A;
- Plastics Molding; and
- Utilities.

Each of these business areas are discussed in greater detail in the report.

ATTACHMENT H

Materials Safety Data Sheets

Tabler Station Site Material Listing

Material Name
Process Areas
18MM Silicone
ALS
AM Triquat
Amodimethicone (10TAS)
AXS
Beauty Care (Hair Care, Body Wash) Perfumes (multiple)
Beauty Care Finished Products (multiple)
Bentonite Clay
Benzyl Alcohol
Betaine
Betzdearborn IEC2
C24 AE1 Alcohol Ethoxylate
C24 AE3 Alcohol Ethoxylate
Caustic, 50%
Cetyl Alcohol
CO1214
Corrshield MD4103
Cutting Oil Thread Cutting Lubricant
DADMAC
DC-1865
DC-1872
DCMC
Diethylene glycol (heat transfer fluid)
Dimethicone (10,000 cSt)
Dimethicone (15-85)
DM5500 Polydimethyl Siloxane Emulsion
EDDS
Ejector Pin
Ethanol, denatured
Fatty Acid
Flogard POT6183
Food Grade Silicone
Formolene HB5502F
Formolene High Density Polyethylene-Hexane Copolymer
Gengard GN7112
Glycerin
Glydant
Hydrochloric Acid
HydroForce Foaming Citrus All Purpose Cleaner
IMS Paintable Mist
Inhibitor AZ8101
Kathon
KRA
Laureth-4
L-Glutamic Acid
Linole
Marlex KN226 Polyethylene
Marlex KN226 Polyethylene
Miramod - Bulk Perfume
Nalco 1720
Nalco 1820
Nalco 3DT 265

Tabler Station Site Material Listing

Material Name
Nalco 7320
Nalco 7330
Nalco Nexguard 22310
Neolone
Panthenol
Pantyl
Perfume Micro Capsules
Perfumes (multiple)
Petrolatum
Phenoxyethanol
Polyethylene Resin
Polypropylene Homopolymer
Polyquaterium - 10
PQAS
Precipated Acid Mix (PAM)
Propylene Glycol (heat transfer fluid)
S2TS Steol TD 402-65
SAPDMA
Simple Green All-Purpose Cleaner
Slide Mold Cleaner Plus Degreaser 4
Slide Mold Shield Cylinder
Slide Resin Remover Aerosol
Slide Super Grease
Sodium Hypochlorite Solution
Sodium Laureth Sulfate SLE1S
Sodium Laureth Sulfate SLE3S
Sodium Lauryl Sulfate SLS
Spectrus NX 1100
Stearyl Alcohol
Step Two Rust Stopper
Sulfuric Acid
Super Grease Aerosol
SXS
TDA-3
Ultimate UV 390-1
Ultra Low Sulfur Diesel Fuel
White Silver-3
Lab Chemicals (Deminimis)
0.01N Hydrochloric Acid
0.01N Iodine Solution
0.01N Sodium Hydroxide
0.01N Sodium Thiosulfate
0.025M Sodium Sulfate
0.04N Iodine Solution
0.04N Iodine Solution
0.05N Sodium Hydroxide
0.1N EDTA Disodium Salt
0.1N Hydrochloric Acid
0.1N Hydrochloric Acid in IPA
0.1N Iodine Solution
0.1N Perchloric Acid in Acetic Acid
0.1N Silver Nitrate

Tabler Station Site Material Listing

Material Name
0.1N Sodium Hydroxide
0.1N Sodium Thiosulfate
0.1N Sulfuric Acid
0.25N Sodium Hydroxide
0.2M Hydrochloric Acid
0.5N Hydrochloric Acid
0.5N Potassium Hydroxide
1% Hydrochloric Acid
1,3 -dioxane
1,3-Butanediol (butylene glycol)
1,4-dioxane
10% Sodium Hydroxide
1000mg/L Fe standard
1000ppm Iron in dilute acid
1-Chlorodocosane (C22-Cl)
1-Chloroeicosane (C20-Cl)
1-Chlorohexadecane
1-Chlorooctadecane
1-Docosanol
1-Dodecanol
1-Eicosanol
1-Hexadecanol
1N Hydrochloric Acid
1N Sodium Hydroxide
1N Sulfuric Acid
1-Nonadecanol
1-Octadecanol
1-Pentadecanol
1-Tetracosanol
1-Tetradecanol
25% Active AE3S
28-30% Strong Ammonia Solution
2-Phenoxyethanol
37% Formaldehyde Solution
50% Sodium Hydroxide
6mL x 1000mg SAX SPE cartridge
7.5% Hydrogen Peroxide
90% LA-7 AE
Absolute Ethanol
Acc-Fluor Reagent Kit
Acetic Acid
Acetic Acid (HPLC Grade)
Acetone
Acetonitrile (HPLC Grade)
Acetylacetone
Acetylene Gas
AE3S
Amberlite MB-1 Ion Exchange Resin
Ammonium Acetate
Ammonium Chloride
Ammonium Hydroxide
Ammonium Xylene Sulphonate
Aquamerck Formaldyde Test Kit (0.1ppm)

Tabler Station Site Material Listing

Material Name
Benzoic Acid
Benzyl Alcohol
Benzylaldehyde
BF3/Methanol
Bromocresol Green Indicator
Bromothymol Blue Indicator
Butan-2-ol
Butyl Alcohol
Butyl Paraben
Caffeine, anhydrous
Calcium Chloride Dihydate
Calibration Std
Canon Oil Standard N140
Canon Oil Standard N250
Chloroform
Chromotropic Acid
Citric Acid Monohydrate
Composite 5 Volumetric
Coulomat AG
D6 Cylcomethicone
Decamethylpentasiloxane (D5 Cyclomethicone)
Decanoic Acid
Diethylene Glycol
Diethylene Glycol
Dimidium Bromide
Diphenyloxide
Dipropylene Glycol
Dishwashing Detergent
Disodium Dihydrogen Ethylene Diamine Tetra Acetate Dihydrate
Disodium Hydrogen Phosphate Anhydrous
Disodium Hydrogen Phosphate Heptahydrate
Disperse Red 17 Reference Std
Disulfine Blue VN
DNPH
Dodecanol
D-Panthenol
D-Panthenyl Ethyl Ether
Dry Methanol
Eicosanoic Acid
Elaidic Acid
Electrode Reference Solution
Eriochrome Black
Erythorbic Acid
Ethoxylated Alcohol
Ethylene Glycol
Ethylene Glycol
Ethylene Glycol Distearate
Ferric Ammonium Sulfate
Ferric Chloride Hexahydrate
FerroVer Iron Reagent Powder Pillows
FID Check Sample
Filter Paper
Finished Perfume Oil

Tabler Station Site Material Listing

Material Name
Flavor Standard
Fluorenone
Formic Acid
Glycerin
Glycine
Heptadecanoic Acid
Hexadecanol
Hexadecyl Hexadecanoate
Hexamethyltrisiloxane (D3 Cyclomethicone)
Hexane
Hyamine 1622
Hydrochloric Acid
Hydrogen Peroxide (30%)
Hydroxylamine Hydrochloride
Iodine
IPBC Standard
Isooctane
Isopropyl Alcohol
Kathon CG/ICP II® (CG/ICP II) Standard
Lauric Acid
Laurinaldehyde
Lead Nitrate
Linoleic Acid
Merckoquant Formaldehyde Test Kit (10ppm)
Methanol
Methanol (HPLC Grade)
Methyl Isobutyl Ketone
Methyl Orange Indicator Solution
Methyl Paraben
Methyl Red Indicator
Methylene Chloride
Methylene Chloride (HPLC Grade)
Mineral Oil, Nujol
Myristic Acid
N,N-Dimethyl-n-hexadecylamine (C16 DMA)
N,N-Dimethyl-n-octadecylamine (C18 DMA)
Neolone RM
n-Heptane
Nicotinamide
Nitric Acid
Nitrous Oxide Gas
n-Pentacosane
n-Tricosane
Octamethyltetrasiloxane (D4 Cyclomethicone)
Octanoic Acid
Oleic Acid
o-Phenanthroline
Palmitic Acid
Palmitoleic Acid
Paper sample cups with lids
Pentadecanol
Perfume Blotters
Perfume Material Standard

Tabler Station Site Material Listing

Material Name
Perfume Raw Materials
Petrolatum
Petroleum Ether
pH 10 Buffer
pH 4 Buffer
pH 7 Buffer
Phenolphthalein Solution
Phosphate Spectroquant Kit
Phosphoric Acid
Phosphoric Acid (HPLC Grade)
Plastic sample cups with lids
p-Nitrophenol, indicator
Potassium Biphthalate
Potassium Bromide Powder
Potassium Chlorate
Potassium Chromate Indicator
Potassium Dihydrogen Phosphate
Potassium hexacyanoferrate (II)
Potassium hexacyanoferrate (III)
Potassium Hydrogen Phthalate
Potassium Hydroxide (pellets)
Potassium Iodide
Propyl Paraben
Salicyl Alcohol
silicone anti-foam
Sodium Chloride
Sodium Dihydrogen Phosphate Monohydrate
Sodium Lauryl Sulfate
Sodium Sulfate
Sodium Thiosulfate
SP Brand MICRO
Squalane
Starch Indicator
Stearic Acid
Sulfuric Acid
Sulfuric Acid (<0.1ppm Chloride)
Sylon BFT
Target Appearance Std
Target Odor Standards
Tetradecanol
Tetrahydrofuran
Toluene
Tridecanoic Acid
Tridecanol
Trisodium Citrate Dihydrate
Triton X-100
Trizma Base
Water Standard

ATTACHMENT I

Emission Units Table

Attachment I
Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and date of Change	Control Device[4]
1S	1E	Surfactant Making Process	2017	3,000 gal/hr	New	1C
2S	2E	Surfactant Making Process	2017	3,000 gal/hr	New	2C
3S	3E	Surfactant Tanks	2017	120,762 gal	New	--
4S	4E	Surfactant Tanks	2017	48,345 gal	New	--
5S	5E	Surfactant Tanks	2017	40,109 gal	New	--
6S	6E	Surfactant Tanks	2017	40,109 gal	New	--
7S	7E	Surfactant Tanks	2017	15,125 gal	New	--
8S	8E	Surfactant Tanks	2017	15,125 gal	New	--
9S	9E	Surfactant Tanks	2017	15,125 gal	New	--
10S	10E	Surfactant Tanks	2017	72,475 gal	New	--
11S	11E	Surfactant Tanks	2017	72,475 gal	New	--
12S	12E	Surfactant Tanks	2017	72,475 gal	New	--
13S	13E	Surfactant Tanks	2017	72,475 gal	New	--
14S	14E	Surfactant Tanks	2017	72,475 gal	New	--
15S	15E	Surfactant Tanks	2017	72,475 gal	New	--
16S	16E	Surfactant Tanks	2017	26,083 gal	New	--
17S	17E	Surfactant Tanks	2017	15,125 gal	New	--
18S	18E	Surfactant Tanks	2017	15,125 gal	New	--
19S	19E	Surfactant Bulk Liquid Transfer	2017	17,150,000 gal/yr	New	--
20S	20E	Liquid Soap A and B Tanks	2017	39,626 gal	New	--
21S	21E	Liquid Soap A and B Tanks	2017	39,626 gal	New	--
22S	22E	Liquid Soap A and B Tanks	2017	39,626 gal	New	--
23S	23E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
24S	24E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
25S	25E	Liquid Soap A and B Tanks	2017	39,626 gal	New	--
26S	26E	Liquid Soap A and B Tanks	2017	15,850 gal	New	--
27S	27E	Liquid Soap A and B Tanks	2017	39,626 gal	New	--
28S	28E	Liquid Soap A and B Tanks	2017	26,417 gal	New	--
29S	29E	Liquid Soap A and B Tanks	2017	15,850 gal	New	--
30S	30E	Liquid Soap A and B Tanks	2017	26,417 gal	New	--
31S	31E	Liquid Soap A and B Tanks	2017	15,850 gal	New	--
32S	32E	Liquid Soap A and B Tanks	2017	15,850 gal	New	--
33S	33E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
34S	34E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
35S	35E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
36S	36E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
37S	37E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
50S	50E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
56S	56E	Liquid Soap A and B Tanks	2017	7,275 gal	New	--
53S	53E	Liquid Soap A and B Tanks	2017	7,925 gal	New	--
38S	38E	Liquid Soap A and B Tanks	2017	396 gal	New	--
40S	40E	Liquid Soap A and B Tanks	2017	396 gal	New	--
41S	41E	Liquid Soap A and B Tanks	2017	396 gal	New	--
42S	42E	Liquid Soap A and B Tanks	2017	396 gal	New	--
43S	43E	Liquid Soap A and B Tanks	2017	396 gal	New	--
44S	44E	Liquid Soap A and B Tanks	2017	396 gal	New	--
45S	45E	Liquid Soap A and B Tanks	2017	396 gal	New	--
46S	46E	Liquid Soap A and B Tanks	2017	396 gal	New	--
47S	47E	Liquid Soap A and B Tanks	2017	396 gal	New	--
51S	51E	Liquid Soap A and B Tanks	2017	396 gal	New	--
52S	52E	Liquid Soap A and B Tanks	2017	396 gal	New	--
54S	54E	Liquid Soap A and B Tanks	2017	660 gal	New	--
55S	55E	Liquid Soap A and B Tanks	2017	396 gal	New	--
57S	57E	Liquid Soap A and B Tanks	2017	1,057 gal	New	--
59S	59E	Liquid Soap A and B Tanks	2017	396 gal	New	--
60S	60E	Liquid Soap A and B Tanks	2017	132 gal	New	--
61S	61E	Liquid Soap A and B Tanks	2017	396 gal	New	--
63S	63E	Liquid Soap A and B Tanks	2017	396 gal	New	--
64S	64E	Liquid Soap A and B Tanks	2017	396 gal	New	--
65S	65E	Liquid Soap A and B Tanks	2017	396 gal	New	--
66S	66E	Liquid Soap A and B Tanks	2017	396 gal	New	--
67S	67E	Liquid Soap A and B Tanks	2017	396 gal	New	--
68S	68E	Liquid Soap A and B Tanks	2017	396 gal	New	--
69S	69E	Liquid Soap A and B Tanks	2017	396 gal	New	--
70S	70E	Liquid Soap A and B Tanks	2017	396 gal	New	--
71S	71E	Liquid Soap A and B Tanks	2017	396 gal	New	--
72S	72E	Liquid Soap A and B Tanks	2017	396 gal	New	--
73S	73E	Liquid Soap A and B Tanks	2017	396 gal	New	--
74S	74E	Liquid Soap A and B Tanks	2017	396 gal	New	--
75S	75E	Liquid Soap A and B Tanks	2017	396 gal	New	--
76S	76E	Liquid Soap A and B Tanks	2017	396 gal	New	--
77S	77E	Liquid Soap A and B Tanks	2017	396 gal	New	--
87S	87E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
88S	88E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
89S	89E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
90S	90E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
91S	91E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
92S	92E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
93S	93E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
94S	94E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
94bS	94bE	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
94cS	94cE	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
94dS	94dE	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
94eS	94eE	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
95S	95E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
96S	96E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
97S	97E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
98S	98E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
99S	99E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
100S	100E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
101S	101E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
102S	102E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
103S	103E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
104S	104E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
105S	105E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
106S	106E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--

Attachment I
Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and date of Change	Control Device[4]
107S	107E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
108S	108E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
109S	109E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
110S	110E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
111S	111E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
112S	112E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
113S	113E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
114S	114E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
115S	115E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
116S	116E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
117S	117E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
118S	118E	Liquid Soap A and B Tanks	2017	1,585 gal	New	--
119S	119E	Liquid Soap A and B Packing/Filling	2017	139,798,617 gal/yr	New	--
120S	120E	Mixer 1 for Premix Process 1	2017	1,182,600,000 scf/yr	New	3C
121S		Mixer 2 for Premix Process 1	2017		New	
122S		Premix Tank 1 for Premix Process 1	2017		New	
123S		Premix Tank 2 for Premix Process 1	2017		New	
124S	121E	Mixer 1 for Liquid Soap B Process 1	2017	2,496,600,000 scf/yr	New	4C
125S		Process Tank 1 for Liquid Soap B Process 1	2017		New	
126S		Process Tank 2 for Liquid Soap B Process 1	2017		New	
127S		Process Tank 3 for Liquid Soap B Process 1	2017		New	
128S	122E	Mixer 1 for Liquid Soap B Process 2	2017	2,496,600,000 scf/yr	New	5C
129S		Process Tank 1 for Liquid Soap B Process 2	2017		New	
130S		Process Tank 2 for Liquid Soap B Process 2	2017		New	
131S		Process Tank 3 for Liquid Soap B Process 2	2017		New	
132S	123E	Mixer 1 for Liquid Soap B Process 3	2017	1,655,640,000 scf/yr	New	6C
133S		Process Tank 1 for Liquid Soap B Process 3	2017		New	
134S		Process Tank 2 for Liquid Soap B Process 3	2017		New	
135S		Process Tank 3 for Liquid Soap B Process 3	2017		New	
136S	124E	Preweigh Station 1	2017	525,600,000 scf/yr	New	7C
137S		Preweigh Station 2	2017		New	
138S		Preweigh Station 3	2017		New	
139S		Preweigh Station 4	2017		New	
140S	125E	Preweigh Station 5	2017	525,600,000 scf/yr	New	8C
141S		Preweigh Station 6	2017		New	
142S		Preweigh Station 7	2017		New	
143S		Preweigh Station 8	2017		New	
144S		Sampling Station	2017		New	
145S	126E	Hot Mix Tank for Liquid Soap A Process 1	2017	20,611,765 cf/year	New	14C
146S	127E	Mixer 1 for Liquid Soap A Process 1	2017	919,800,000 scf/yr	New	9C
147S		Process Tank 1 for Liquid Soap A Process 1	2017		New	
148S		Process Tank 2 for Liquid Soap A Process 1	2017		New	
149S	126E	Hot Mix Tank for Liquid Soap A Process 2	2017	20,611,765 cf/year	New	14C
150S	128E	Mixer 1 for Liquid Soap A Process 2	2017	919,800,000 scf/yr	New	10C
151S		Process Tank 1 for Liquid Soap A Process 2	2017		New	
152S		Process Tank 2 for Liquid Soap A Process 2	2017		New	
153S	126E	Hot Mix Tank for Liquid Soap A Process 3	2017	20,611,765 cf/year	New	14C
154S	129E	Mixer 1 for Liquid Soap A Process 3	2017	919,800,000 scf/yr	New	11C
155S		Process Tank 1 for Liquid Soap A Process 3	2017		New	
156S		Process Tank 2 for Liquid Soap A Process 3	2017		New	
157S	126E	Hot Mix Tank for Liquid Soap A Process 4	2017	20,611,765 cf/year	New	14C
158S	130E	Mixer 1 for Liquid Soap A Process 4	2017	1,603,080,000 scf/yr	New	12C
159S		Process Tank 1 for Liquid Soap A Process 4	2017		New	
160S		Process Tank 2 for Liquid Soap A Process 4	2017		New	
161S	131E	Process Tank 1 for Liquid Soap B Process 4	2017	735,840,000 scf/yr	New	13C
162S		Process Tank 2 for Liquid Soap B Process 4	2017		New	
163S	132E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	42,879 gal	New	--
164S	133E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	37,641 gal	New	--
165S	134E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	6,809 gal	New	--
166S	135E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	396 gal	New	--
167S	136E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	396 gal	New	--
168S	137E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	396 gal	New	--
169S	138E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
170S	139E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
171S	140E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
172S	141E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
173S	142E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
174S	143E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
175S	144E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
176S	145E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
177S	146E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
178S	147E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
179S	148E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
180S	149E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
181S	150E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
182S	151E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
183S	152E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
184S	153E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
185S	154E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
186S	155E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
187S	156E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
188S	157E	Dry Consumer Laundry and Cleaning Products A Tanks	2017	181 gal	New	--
189S	158E	Dry Consumer Laundry and Cleaning Products A Particulate Control 1	2017	17,450 scfm	New	15C
190S	159E	Dry Consumer Laundry and Cleaning Products A Particulate Control 2	2017	17,450 scfm	New	16C
191S	160E	Dry Consumer Laundry and Cleaning Products A Particulate Control 3	2017	17,450 scfm	New	17C
192S	161E	Dry Consumer Laundry and Cleaning Products A Particulate Control 4	2017	17,450 scfm	New	18C
193S	162E	Dry Consumer Laundry and Cleaning Products A Particulate Control 5	2017	17,450 scfm	New	19C
194S	163E	Dry Consumer Laundry and Cleaning Products A Particulate Control 6	2017	8,000 scfm	New	20C
195S	164E	Dry Consumer Laundry and Cleaning Products A Additive 1	2017	109 ft/s	New	--
196S	165E	Boiler 1	2017	62 MMBtu/hr	New	--
197S	166E	Boiler 2	2017	62 MMBtu/hr	New	--
198S	167E	Boiler 3	2017	31 MMBtu/hr	New	--
199S	168E	Temporary Boiler	2017	11 MMBtu/hr	New	--
200S	169E	Cooling Tower	2017	331 Mgal/hr	New	--
201S	170E	Cooling Tower	2017	792 Mgal/hr	New	--
202S	171E	Cooling Tower	2017	212 Mgal/hr	New	--

Attachment I
Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and date of Change	Control Device[4]
203S	172E	Fire Pump Engine	2017	311 hp	New	--
204S	173E	Fire Pump Engine	2017	311 hp	New	--
205S	174E	Backup/Standby Power Generator	2017	350 kW	New	--
206S	175E	Backup/Standby Power Generator	2017	350 kW	New	--
207S	176E	Backup/Standby Power Generator	2017	350 kW	New	--
208S	177E	Fuel Tanks	2017	5,000 gal	New	--
210S	179E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
211S	180E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
212S	181E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
213S	182E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
214S	183E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
215S	184E	Warehouse Heater	2017	3.05 MMBtu/hr	New	--
216S	185E	Water Pretreatment Chemicals	2017	174,928 kg/yr	New	--
217S	186E	Railcar Unloading 1	2017	100,000 tons/year	New	21C
218S	187E	Railcar Unloading 2	2017		New	22C
219S	188E	Railcar Unloading 3	2017		New	23C
220S	189E	Railcar Unloading 4	2017		New	24C
221S	190E	Railcar Unloading 5	2017		New	25C
222S	191E	Storage Silo 1	2017	100,000 tons/year	New	--
223S	192E	Storage Silo 2	2017		New	--
224S	193E	Storage Silo 3	2017		New	--
225S	194E	Storage Silo 4	2017		New	--
226S	195E	Storage Silo 5	2017		New	--
227S	196E	Storage Silo 6	2017		New	--
228S	197E	Storage Silo 7	2017		New	--
229S	198E	Storage Silo 8	2017		New	--
230S	199E	Storage Silo 9	2017		New	--
231S	200E	Storage Silo 10	2017		New	--
232S	201E	Storage Silo 11	2017		New	--
233S	202E	Storage Silo 12	2017		New	--
234S	203E	Storage Silo 13	2017		New	--
235S	204E	Storage Silo 14	2017		New	--
236S	205E	Storage Silo 15	2017		New	--
237S	206E	Storage Silo 16	2017		New	--
238S	207E	Storage Silo 17	2017		New	--
239S	208E	Storage Silo 18	2017		New	--
240S	209E	Storage Silo 19	2017		New	--
241S	210E	Storage Silo 20	2017		New	--
242S	211E	Storage Silo 21	2017		New	--
243S	212E	Storage Silo 22	2017		New	--
244S	213E	Storage Silo 23	2017		New	--
245S	214E	Storage Silo 24	2017		New	--
246S	215E	Plastic Regrind	2017	32,000 tons/year	New	26C
247S	216E	Forming VOC	2017	100,000 tons/year	New	--
248S	217E	Parts Washing/Process Cleaning	2017	6 tons/year	New	--
249S	218E	Space Heater 1	2017	5 MMBtu/hr	New	--
250S	219E	Space Heater 2	2017	5 MMBtu/hr	New	--
251S	220E	Space Heater 3	2017	2.5 MMBtu/hr	New	--
252S	221E	Space Heater 4	2017	2.5 MMBtu/hr	New	--
253S	222E	Space Heater 5	2017	1 MMBtu/hr	New	--
254S	223E	Space Heater 6	2017	1 MMBtu/hr	New	--
255S	224E	Cooling Tower	2017	7,000 gpm	New	--
256S	225E	Backup Generator	2017	0.2 MMBtu/hr	New	--
257S	226E	Printing Ink	2017	3,430 lb/year	New	
258S	227E	Case Packing Glue	2017	690,080 lb/year	New	

1) For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation
2) For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
3) New, modification, removal
4) For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

Attachment I
Sources of Minor Significance Emission Units Table (<0.5 tpy)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description
3S-5S	3E-5E	Surfactant Tanks
7S-18S	7E-18E	Surfactant Tanks
19S	19E	Surfactant Bulk Liquid Transfer
20S-31S	20E-31E	Liquid Soap A and B Tanks
33S-37S	33E-37E	Liquid Soap A and B Tanks
38S-118S	38E-118E	Liquid Soap A and B Tanks
119S	119E	Liquid Soap A and B Packing/Filling
161S	131E	Process Tank 1 for Liquid Soap B Process 4
162S	131E	Process Tank 2 for Liquid Soap B Process 4
163S-188S	163E-188E	Dry Consumer Laundry and Cleaning Products A Tanks
189S	189E	Dry Consumer Laundry and Cleaning Products A Particulate Control 1
190S	190E	Dry Consumer Laundry and Cleaning Products A Particulate Control 2
191S	191E	Dry Consumer Laundry and Cleaning Products A Particulate Control 3
208S	177E	Fuel Tanks
n/a	n/a	Haul Roads
n/a	n/a	Steam Venting System for Sanitization of Equipment for Liquid Soap A and B
n/a	n/a	PM emissions from forming operations - occur inside building, no access to open air (45 CSR 7)
n/a	n/a	PM emissions from transportation operations - occur inside building, no access to open air (45 CSR 7)
n/a	n/a	Printing Ink
n/a	n/a	Case Packing Glue
n/a	n/a	Additional de minimis sources from 45 CSR 13, Table 45-13b

ATTACHMENT J

Emission Points Data Summary Sheet

Attachment J

EMISSION POINTS SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type[1]	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (Chemical Processes only)		All Regulated Pollutants - Chemical Name/CAS3 (Speciate VOCs and HAPS)	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used [6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
1E	Upward Vertical Stack	1C	Surfactant Making Process	N/A	N/A	N/A	N/A	NO_X			1.6	2.3	Gas	O - Vendor and AP-42	
								CO			6.6E-01	2.4E-02			
								SO_2			2.1	8.2E-01			
								VOC			1.8	2.1			
								PM			2.7	1.4E+01			
								$PM_{10}/PM_{2.5}$			2.7	13.8			
								H_2SO_4			8.5	11.7			
								HAP			5.3E-04	5.3E-04			
2E	Upward Vertical Stack	2C	Surfactant Making Process	N/A	N/A	N/A	N/A	NO_X			1.6	2.3	Gas	O - Vendor and AP-42	
								CO			6.6E-01	2.4E-02			
								SO_2			2.1	8.2E-01			
								VOC			1.8	2.0			
								PM			2.7	9.8			
								$PM_{10}/PM_{2.5}$			2.7	9.8			
								H_2SO_4			8.5	7.8			
								HAP			5.3E-04	5.3E-04			
3E-18E	Upward Vertical Stack	N/A	Surfactant Tanks	N/A	N/A	N/A	N/A	VOC	2.8E-01	1.2	2.8E-01	1.2	Gas	O - EPA Tanks	
								H_2SO_4	3.5E-04	1.5E-03	3.5E-04	1.5E-03	Gas	O - EPA Tanks	
								HAP	2.1E-02	9.1E-02	2.1E-02	9.1E-02	Gas	EE	
19E	Upward Vertical Stack	N/A	Surfactant Bulk Liquid Transfer	N/A	N/A	N/A	N/A	VOC	1.2E-02	5.2E-02	1.2E-02	5.2E-02	Gas	O - AP-42	
								H_2SO_4	5.5E-04	2.4E-03	5.5E-04	2.4E-03	Gas	O - AP-42	
20E-118E	Upward Vertical Stack	N/A	Liquid Soap A and B Tanks	N/A	N/A	N/A	N/A	VOC	4.26E-01	2.6	4.26E-01	2.6	Gas	O - EPA Tanks	
119E	Upward Vertical Stack	N/A	Liquid Soap A and B Packing/Filling	N/A	N/A	N/A	N/A	VOC	2.5E-04	1.1E-03	2.5E-04	1.1E-03	Gas	O - AP-42	
120E	Upward Vertical Stack	3C	Premix Process 1	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			3.9E-01	1.69	Gas	EE	
								VOC			2.0E-01	8.59E-01	Gas	EE	
121E	Upward Vertical Stack	4C	Liquid Soap B Process 1	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			8.1E-01	3.6	Gas	EE	
								VOC			3.64E-01	1.6	Gas	EE	
122E	Upward Vertical Stack	5C	Liquid Soap B Process 2	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			8.1E-01	3.6	Gas	EE	
								VOC			4.40E-01	1.9	Gas	EE	
123E	Upward Vertical Stack	6C	Liquid Soap B Process 3	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			5.4E-01	2.4	Gas	EE	
								VOC			3.64E-01	1.6	Gas	EE	
124E	Upward Vertical Stack	7C	Preweigh Group 1	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			1.7E-01	7.51E-01	Gas	EE	
								VOC			--	--	Gas	EE	
125E	Upward Vertical Stack	8C	Preweigh Group 2	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			1.7E-01	7.51E-01	Gas	EE	
								VOC			--	--	Gas	EE	
127E - 130E	Upward Vertical Stack	9C - 12C	Liquid Soap A Process 1-4	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			1.42	6.2	Gas	EE	
								VOC			6.26	27.4	Gas	MB	

Attachment J

EMISSION POINTS SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type[1]	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (Chemical Processes only)		All Regulated Pollutants - Chemical Name/CAS3 (Speciate VOCs and HAPS)	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used [6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
131E	Upward Vertical Stack	13C	Liquid Soap B Process 4	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			2.4E-01	1.05	Gas	EE	
								VOC			9.9E-03	4.3E-02	Gas	EE	
126E	Upward Vertical Stack	14C	Hot Mix Tanks for Liquid Soap A, Process 1-4	N/A	N/A	N/A	N/A	$PM_{10}/PM_{2.5}$			1.5E-02	6.5E-02	Gas	O - AP-42	
								SO_2			1.4E-03	6.2E-03	Gas	O - AP-42	
								NO_X			2.4E-01	1.1	Gas	O - Vendor	
								VOC			1.24	5.4	Gas	MB	
								CO			1.33	5.8	Gas	O - Vendor	
								Lead			1.2E-06	5.2E-06	Gas	O - AP-42	
132E-157E	Upward Vertical Stack	N/A	Dry Consumer Laundry and Cleaning Products A Tanks	N/A	N/A	N/A	N/A	VOC	1.51E-01	6.63E-01	1.5E-01	6.6E-01	Gas	EE	
158E	Upward Vertical Stack	15C	Dry Consumer Laundry and Cleaning Products A Particulate Control 1	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			6.9E-02	3.0E-01	Gas	EE	
159E	Upward Vertical Stack	16C	Dry Consumer Laundry and Cleaning Products A Particulate Control 2	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			4.7E-02	2.1E-01	Gas	EE	
160E	Upward Vertical Stack	17C	Dry Consumer Laundry and Cleaning Products A Particulate Control 3	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.6}$			4.5E-02	2.0E-01	Gas	EE	
161E	Upward Vertical Stack	18C	Dry Consumer Laundry and Cleaning Products A Particulate Control 4	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.7}$			1.54E+00	6.8	Gas	EE	
162E	Upward Vertical Stack	19C	Dry Consumer Laundry and Cleaning Products A Particulate Control 5	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			1.54E+00	6.8	Gas	EE	
163E	Upward Vertical Stack	20C	Dry Consumer Laundry and Cleaning Products A Particulate Control 6	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$			5.57E-01	2.4	Gas	EE	
164E	Upward Vertical Stack	N/A	Dry Consumer Laundry and Cleaning Products A Additive 1	N/A	N/A	N/A	N/A	VOC	3.6E-01	1.6	2.0	8.7	Gas	EE	

Attachment J

EMISSION POINTS SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type[1]	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (Chemical Processes only)		All Regulated Pollutants - Chemical Name/CAS3 (Speciate VOCs and HAPS)	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used [6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
165E	Upward Vertical Stack	N/A	Boiler 1	N/A	N/A	N/A	N/A	NO_X	4.5	19.8	4.5	19.8	Gas	O - AP-42	
								CO	2.3	10.0	2.3	10.0			
								SO_2	3.7E-02	0.2	3.7E-02	1.6E-01			
								VOC	2.2E-01	1.0	2.2E-01	9.8E-01			
								PM	2.4E-01	1.0	2.4E-01	1.03			
								PM_{10}	4.7E-01	2.0	4.7E-01	2.04			
								$PM_{2.5}$	4.7E-01	2.0	4.7E-01	2.04			
								H_2SO_4	4.0E-04	0.0	4.0E-04	1.8E-03			
								HAP	1.1E-01	0.5	1.1E-01	5.0E-01			
166E	Upward Vertical Stack	N/A	Boiler 2	N/A	N/A	N/A	N/A	NO_X	4.5	19.8	4.5	19.8	Gas	O - AP-42	
								CO	2.3	10.0	2.3	10.0			
								SO_2	3.7E-02	1.6E-01	3.7E-02	1.6E-01			
								VOC	2.2E-01	1.0	2.2E-01	1.0			
								PM	2.4E-01	1.0	2.4E-01	1.0			
								PM_{10}	4.7E-01	2.0	4.7E-01	2.0			
								$PM_{2.5}$	4.7E-01	2.0	4.7E-01	2.0			
								H_2SO_4	4.0E-04	1.8E-03	4.0E-04	1.8E-03			
								HAP	1.1E-01	5.0E-01	1.1E-01	5.0E-01			
167E	Upward Vertical Stack	N/A	Boiler 3	N/A	N/A	N/A	N/A	NO_X	2.3	9.9	2.3	9.9	Gas	O - AP-42	
								CO	1.1	5.0	1.1	5.0			
								SO_2	1.9E-02	8.1E-02	1.9E-02	8.1E-02			
								VOC	1.1E-01	4.9E-01	1.1E-01	4.9E-01			
								PM	1.2E-01	0.5	1.2E-01	0.5			
								PM_{10}	2.3E-01	1.0	2.3E-01	1.0			
								$PM_{2.5}$	2.3E-01	1.0	2.3E-01	1.0			
								H_2SO_4	2.0E-04	8.8E-04	2.0E-04	8.8E-04			
								HAP	5.7E-02	2.5E-01	5.7E-02	2.5E-01			
168E	Upward Vertical Stack	N/A	Temporary Boiler	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gas	N/A	
169E-171E	Upward Vertical Stack	N/A	Cooling Tower	N/A	N/A	N/A	N/A	$PM/PM_{10}/PM_{2.5}$	8.91E-01	3.9	8.91E-01	3.9	Gas	O - AP-42	
172E-173E	Upward Vertical Stack	N/A	Fire Pump Engine	N/A	N/A	N/A	N/A	NO_X	3.6	8.9E-01	3.6	8.9E-01	Gas	O - Vendor	
								CO	1.1	2.7E-01	1.1	2.7E-01			
								SO_2	1.9E-03	4.8E-04	1.9E-03	4.8E-04			
								VOC	1.4E-01	3.4E-02	1.4E-01	3.4E-02			
								PM	1.4E-01	3.4E-02	1.4E-01	3.4E-02			
								PM_{10}	1.4E-01	3.4E-02	1.4E-01	3.4E-02			
								$PM_{2.5}$	1.4E-01	3.4E-02	1.4E-01	3.4E-02			
								HAP	2.8E-02	7.0E-03	2.8E-02	7.0E-03			
174E-176E	Upward Vertical Stack	N/A	Backup/Standby Power Generator	N/A	N/A	N/A	N/A	NO_X	10.5	2.6	10.5	2.6	Gas	O - Vendor	
								CO	1.7	4.2E-01	1.7	4.2E-01			
								SO_2	4.4E-03	1.1E-03	4.37E-03	1.1E-03			
								VOC	1.3E-01	3.3E-02	1.31E-01	3.3E-02			
								PM	1.4E-01	3.6E-02	1.44E-01	3.6E-02			
								PM_{10}	1.4E-01	3.5E-02	1.38E-01	3.5E-02			
								$PM_{2.5}$	1.4E-01	3.5E-02	1.38E-01	3.5E-02			
								HAP	6.4E-02	1.6E-02	6.38E-02	1.6E-02			
177E	Upward Vertical Stack	N/A	Fuel Tanks	N/A	N/A	N/A	N/A	VOC	5.2E-04	2.3E-03	5.2E-04	2.3E-03	Gas	O - EPA Tanks	

Attachment J

EMISSION POINTS SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type[1]	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (Chemical Processes only)		All Regulated Pollutants - Chemical Name/CAS3 (Speciate VOCs and HAPS)	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used [6]	Emission Concentration[7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
179E-184E	Upward Vertical Stack	N/A	Warehouse Heater	N/A	N/A	N/A	N/A	NO_X	9.0E-01	3.93	9.0E-01	3.9	Gas	O - AP-42	
								CO	1.51	6.60	1.51	6.60			
								SO_2	1.1E-02	4.7E-02	1.1E-02	4.7E-02			
								VOC	9.9E-02	4.3E-01	9.9E-02	4.3E-01			
								PM	1.4E-01	6.0E-01	1.4E-01	6.0E-01			
								PM_{10}	1.4E-01	6.0E-01	1.4E-01	6.0E-01			
								$PM_{2.5}$	1.4E-01	6.0E-01	1.4E-01	6.0E-01			
								H_2SO_4	1.2E-04	5.1E-04	1.2E-04	5.1E-04			
								HAP	3.4E-02	1.5E-01	3.4E-02	1.5E-01			
185E	Fugitive	N/A	Water Pretreatment Chemicals	N/A	N/A	N/A	N/A	VOC	3.0	13.0	3.0	13.0	Gas	EE	
								HAP	9.1E-04	4.0E-03	9.1E-04	4.0E-03			
186E-190E	Upward Vertical Stack	21C-25C	Railcar Unloading	N/A	N/A	N/A	N/A	PM	7.99E-01	3.50	7.99E-02	3.50E-01	Gas	O - Vendor	
								PM_{10}	7.99E-01	3.50	7.99E-02	3.50E-01			
								$PM_{2.5}$	7.99E-01	3.50	7.99E-02	3.50E-01			
191E-214E	Upward Vertical Stack	N/A	Storage Silo	N/A	N/A	N/A	N/A	PM	7.99E-01	3.50	7.99E-01	3.5	Gas	O - Vendor	
								PM_{10}	7.99E-01	3.50	7.99E-01	3.5			
								$PM_{2.5}$	7.99E-01	3.50	7.99E-01	3.5			
215E	Upward Vertical Stack	N/A	Plastic Regrind	N/A	N/A	N/A	N/A	PM	7.67E-01	3.36	3.84E-02	1.68E-01	Gas	O - Vendor	
								PM_{10}	7.67E-01	3.36	3.84E-02	1.68E-01			
								$PM_{2.5}$	7.67E-01	3.36	3.84E-02	1.68E-01			
216E	Upward Vertical Stack	N/A	Forming VOC	N/A	N/A	N/A	N/A	VOC	7.01E-01	3.07	7.01E-01	3.1	Gas	O - Vendor	
217E	Upward Vertical Stack	N/A	Parts Washing/Process Cleaning	N/A	N/A	N/A	N/A	VOC	1.4E+00	6.00	1.4	6.0	Gas	O - Vendor	
218E-223E	Upward Vertical Stack	N/A	Space Heater	N/A	N/A	N/A	N/A	NO_X	8.33E-01	3.7	8.33E-01	3.7	Gas	O - AP-42	
								CO	1.4	6.1	1.4	6.1			
								SO_2	1.0E-02	4.4E-02	1.00E-02	4.38E-02			
								VOC	9.2E-02	4.0E-01	9.17E-02	4.02E-01			
								PM	1.3E-01	5.5E-01	1.27E-01	5.55E-01			
								PM_{10}	1.3E-01	5.5E-01	1.27E-01	5.55E-01			
								$PM_{2.5}$	1.3E-01	5.5E-01	1.27E-01	5.55E-01			
								H_2SO_4	1.1E-04	4.7E-04	1.08E-04	4.75E-04			
								HAP	3.1E-02	1.3E-01	3.15E-02	1.30E-01			
224E	Upward Vertical Stack	N/A	Cooling Tower	N/A	N/A	N/A	N/A	PM	2.8E-01	1.2	2.80E-01	1.2	Gas	O-AP-42	
								PM_{10}	2.8E-01	1.2	2.80E-01	1.2			
								$PM_{2.5}$	2.8E-01	1.2	2.80E-01	1.2			
225E	Upward Vertical Stack	N/A	Backup Generator	N/A	N/A	N/A	N/A	NO_X	4.17E-01	1.04E-01	4.17E-01	1.04E-01	Gas	O - AP-42	
								CO	8.33E-01	2.08E-01	8.33E-01	2.08E-01			
								SO_2	1.18E-04	2.94E-05	1.18E-04	2.94E-05			
								VOC	2.01E-01	5.02E-02	2.01E-01	5.02E-02			
								PM	1.90E-03	4.75E-04	1.90E-03	4.75E-04			
								PM_{10}	3.88E-03	9.71E-04	3.88E-03	9.71E-04			
								$PM_{2.5}$	3.88E-03	9.71E-04	3.88E-03	9.71E-04			
								HAP	6.48E-03	1.62E-03	6.48E-03	1.62E-03			
226E	Fugitive	N/A	Printing Ink	N/A	N/A	N/A	N/A	VOC	8.65E-02	3.79E-01	8.7E-02	3.79E-01	Gas	EE	
								HAP	3.65E-02	1.60E-01	3.7E-02	1.60E-01	Gas	EE	
227E	Fugitive	N/A	Case Packing Glue	N/A	N/A	N/A	N/A	VOC	4.73E-02	2.07E-01	4.7E-02	2.07E-01	Gas	EE	
								HAP	1.58E-03	6.90E-03	1.6E-03	6.90E-03	Gas	EE	

Attachment J

EMISSION POINTS SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. (Must match Emission Units Table)	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (^{o}f)	Volumetric Flow[1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height[2] *(Release height of emissions above ground level)*	Northing	Easting
1E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
2E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
3E-18E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20E-118E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
119E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
120E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
121E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
122E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
123E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
124E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
125E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
127E - 130E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
131E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
126E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
132E-157E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
158E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
159E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
160E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
161E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
162E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
163E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
164E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
165E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
166E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
167E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
168E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
169E-171E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
172E-173E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
174E-176E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
177E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
179E-184E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
185E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
186E-190E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
191E-214E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
215E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
216E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
217E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
218E-223E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
224E	TBD	TBD	TBD	TBD	TBD	TBD	4,366	757
225E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
226E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
227E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ATTACHMENT K

Fugitive Emissions Data Summary Sheet

Attachment K			
FUGITIVE EMISSIONS DATA SUMMARY SHEET			
Question		**YES/NO**	**if YES:**
1	Will there be haul road activities?	Yes	Complete **haul road emissions unit data sheet**
2	Will there be storage piles?	No	Complete **Table 1 of nonmetallic minerals processing emissions unit data sheet**
3	Will there be liquid loading/unloading operations?	Yes	Complete **bulk liquid transfer operations emissions unit data sheet**
4	Will there be emissions of air pollutants from wastewater treatment evaporation?	Yes	Complete **general emissions unit data sheet**
5	Will there be equipment leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?	No	Complete **leak source data sheet** section of the **chemical processes emissions unit data sheet**
6	Will there be General Clean-up VOC Operations?	Yes	Complete the **general emissions unit data sheet**
7	Will there be any other activities that generate fugitive emissions?	Yes	Complete the **general emissions unit data sheet** or most appropriate form

Attachment K						
FUGITIVE EMISSIONS DATA SUMMARY SHEET						
FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions		Est. Method Used
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions	NA	NA	NA	NA	NA	NA
Paved Haul Roads	PM	5.0E-04	2.2E-03	N/A	N/A	O - AP-42
Unpaved Haul Roads	NA	NA	NA	NA	NA	NA
Storage Pile Emissions	NA	NA	NA	NA	NA	NA
Loading/Unloading Operations	VOC	1.2E-02	5.2E-02	1.2E-02	5.2E-02	O - AP-42
	H_2SO_4	5.5E-04	2.4E-03	5.5E-04	2.4E-03	
Wastewater Treatment Evaporation & Operations	VOC	3.0	13.0	3.0	13.0	EE - Engineering Estimate
	HAP	9.1E-04	4.0E-03	9.1E-04	4.0E-03	EE - Engineering Estimate
Equipment Leaks	NA	NA	NA	NA	NA	NA
General Clean-up VOC Emissions	67-63-0, and others	1.37	6.00	1.37	6.00	EE - Engineering Estimate
Ink Printers	VOC	8.7E-02	3.79E-01	8.65E-02	3.79E-01	EE - Engineering Estimate
	Glycol Ether	3.7E-02	1.60E-01	3.65E-02	1.60E-01	
Case Packing Glue	VOC	4.7E-02	2.07E-01	4.73E-02	2.07E-01	EE - Engineering Estimate
	108-05-4	1.6E-03	6.90E-03	1.58E-03	6.90E-03	
Other	NA - Fugitive emissions from tanks are calculated in Attachment L					

ATTACHMENT L

Emission Unit Data Sheet

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Surfactant Tanks	3S	3E	New Const.	120,762	21.3	45.5	41.6	20,327,735	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90.5	Steam or Hot Water	Dulles Airport, Washington DC	3.50E-03	6.84	197	Does not apply	VOC	109.6	HAP	n/a	EPA
Surfactant Tanks	4S	4E	New Const.	48,345	13.5	45.5	41.6	8,805,475	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	89.6	Steam or Hot Water	Dulles Airport, Washington DC	3.42E-03	7.18	197	Does not apply	VOC	44.6	HAP	44.6	EPA
Surfactant Tanks	5S	5E	New Const.	40,109	13.5	37.7	37.3	9,481,192	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	3.92E-03	7.68	197	Does not apply	VOC	48.3	HAP	48.3	EPA
Surfactant Tanks	6S	6E	New Const.	40,109	13.5	37.7	37.3	1,917,922	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	Ambient	N/A	Dulles Airport, Washington DC	8.62E-01	6.58	46.07	Does not apply	VOC	1722.7	HAP	n/a	EPA
Surfactant Tanks	7S	7E	New Const.	15,125	9.8	26.6	26.5	7,823,046	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	99.5	Steam or Hot Water	Dulles Airport, Washington DC	1.50E-03	8.69	323	Does not apply	VOC	19.0	HAP	4.0	EPA
Surfactant Tanks	8S	8E	New Const.	15,125	9.8	26.6	26.5	7,823,046	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.50E-03	8.69	323	Does not apply	VOC	19.1	HAP	4.0	EPA
Surfactant Tanks	9S	9E	New Const.	15,125	9.8	26.6	26.5	6,841,173	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.50E-03	8.69	323	Does not apply	VOC	17.3	HAP	n/a	EPA
Surfactant Tanks	10S	10E	New Const.	72,475	16.5	45.5	41.6	39,115,231	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	99.5	Steam or Hot Water	Dulles Airport, Washington DC	1.32E-03	8.35	323	Does not apply	VOC	82.6	HAP	20.2	EPA
Surfactant Tanks	11S	11E	New Const.	72,475	16.5	45.5	41.6	39,115,231	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	99.5	Steam or Hot Water	Dulles Airport, Washington DC	1.32E-03	8.35	323	Does not apply	VOC	82.6	HAP	20.2	EPA
Surfactant Tanks	12S	12E	New Const.	72,475	16.5	45.5	41.6	39,115,231	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	78.5	HAP	20.2	EPA
Surfactant Tanks	13S	13E	New Const.	72,475	16.5	45.5	41.6	39,115,231	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	78.5	HAP	20.2	EPA
Surfactant Tanks	14S	14E	New Const.	72,475	16.5	45.5	41.6	34,205,863	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	71.1	HAP	n/a	EPA
Surfactant Tanks	15S	15E	New Const.	72,475	16.5	45.5	41.6	34,205,863	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	71.1	HAP	n/a	EPA
Surfactant Tanks	16S	16E	New Const.	26,083	11.8	31.8	30.6	115,491	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	95	Steam or Hot Water	Dulles Airport, Washington DC	1.50E-03	8.69	323	Does not apply	VOC	1.3	HAP	n/a	EPA
Surfactant Tanks	17S	17E	New Const.	15,125	9.8	26.6	26.5	2,000,000	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.69E-03	15.36	98.09	Does not apply	H2SO4	3.0	HAP	n/a	EPA
Surfactant Tanks	18S	18E	New Const.	15,125	9.8	26.6	26.5	150,000	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.69E-03	15.36	98.09	Does not apply	VOC	0.6	HAP	n/a	EPA
Liquid Soap A and B Tanks	20S	20E	New Const.	39,626	13.5	36.1	23.8	13,431,682	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.32E-03	8.35	323	Does not apply	VOC	31.5	HAP	6.9	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	21S	21E	New Const.	39,626	13.5	36.1	23.8	24,833,180	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	46.3	HAP	12.8	EPA
Liquid Soap A and B Tanks	22S	22E	New Const.	39,626	13.5	36.1	23.8	18,189,304	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	36.6	HAP	n/a	EPA
Liquid Soap A and B Tanks	23S	23E	New Const.	7,925	7.9	21.0	13.9	291,058	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	2.4	HAP	2.4	EPA
Liquid Soap A and B Tanks	24S	24E	New Const.	7,925	7.9	21.0	13.9	229,500	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	2.03E-01	9.16	36	Does not apply	VOC	n/a	HAP	37.0	EPA
Liquid Soap A and B Tanks	25S	25E	New Const.	39,626	13.5	36.1	23.8	46,050,900	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	9.28E-17	0.88	343	Does not apply	VOC	6.10E-12	HAP	n/a	EPA
Liquid Soap A and B Tanks	26S	26E	New Const.	15,850	9.8	26.6	17.5	685,694	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	n/a	7.51	503	Does not apply	VOC	0.00E+00	HAP	n/a	EPA
Liquid Soap A and B Tanks	27S	27E	New Const.	39,626	13.5	36.1	23.8	2,317,226	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.60E-03	8.97	388	Does not apply	VOC	20.7	HAP	n/a	EPA
Liquid Soap A and B Tanks	28S	28E	New Const.	26,417	11.8	31.8	21.0	2,012,364	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.93E-04	6.78	270	Does not apply	VOC	1.3	HAP	n/a	EPA
Liquid Soap A and B Tanks	29S	29E	New Const.	15,850	9.8	26.6	17.5	1,039,693	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	1.16E-07	6.77	242	Does not apply	VOC	3.84E-04	HAP	n/a	EPA
Liquid Soap A and B Tanks	30S	30E	New Const.	26,417	11.8	31.8	21.0	1,646,085	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	7.25E-05	8.35	503	Does not apply	VOC	8.39E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	31S	31E	New Const.	15,850	9.8	26.6	17.5	1,691,510	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	3.30E-02	8.35	503	Does not apply	VOC	265.6	HAP	n/a	EPA
Liquid Soap A and B Tanks	32S	32E	New Const.	15,850	9.8	26.6	17.5	240,216	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	113	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	7.93	368	Does not apply	VOC	1563.9	HAP	n/a	EPA
Liquid Soap A and B Tanks	33S	33E	New Const.	7,925	7.9	21.0	13.9	282,057	Vertical Fixed Roof Aboveground	Grey/Grey	No	77	Steam or Hot Water	Dulles Airport, Washington DC	4.83E-05	10.52	92	Does not apply	VOC	2.85E-02	HAP	n/a	EPA
Liquid Soap A and B Tanks	34S	34E	New Const.	7,925	9.0	23.4	15.4	146,204	Vertical Fixed Roof Aboveground	Grey/Grey	No	Ambient	N/A	Dulles Airport, Washington DC	5.00E-01	8.71	200	Does not apply	VOC	634.5	HAP	3.2	EPA
Liquid Soap A and B Tanks	35S	35E	New Const.	7,925	9.0	23.4	15.4	47,372	Vertical Fixed Roof Aboveground	Grey/Grey	No	Ambient	N/A	Dulles Airport, Washington DC	5.00E-01	8.71	200	Does not apply	VOC	394.5	HAP	2.0	EPA
Liquid Soap A and B Tanks	36S	36E	New Const.	7,925	9.0	23.4	15.4	38,244	Vertical Fixed Roof Aboveground	Grey/Grey	No	Ambient	N/A	Dulles Airport, Washington DC	5.00E-01	8.71	200	Does not apply	VOC	372.4	HAP	1.9	EPA
Liquid Soap A and B Tanks	37S	37E	New Const.	7,925	9.0	23.4	15.4	7,552	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	Ambient	N/A	Dulles Airport, Washington DC	5.00E-01	8.71	200	Does not apply	VOC	297.8	HAP	1.5	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	50S	50E	New Const.	7,925	9.0	23.4	15.4	696,309	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	4.2	HAP	n/a	EPA
Liquid Soap A and B Tanks	56S	56E	New Const.	7,275	9.0	23.4	15.4	287,453	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.59E-03	9.09	76	Does not apply	VOC	8.04E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	53S	53E	New Const.	7,925	9.0	23.4	15.4	112,722	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	1.05E+00	HAP	n/a	EPA
Liquid Soap A and B Tanks	38S	38E	New Const.	396	3.3	8.58	5.6628	37,808	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.50	503	Does not apply	VOC	216.2	HAP	n/a	EPA
Liquid Soap A and B Tanks	40S	40E	New Const.	396	3.3	8.58	5.6628	16,874	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	5.61E-02	12.02	292	Does not apply	VOC	6.4	HAP	n/a	EPA
Liquid Soap A and B Tanks	41S	41E	New Const.	396	3.3	8.58	5.6628	12,883	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	2.90E-10	10.01	205	Does not apply	VOC	1.78E-08	HAP	n/a	EPA
Liquid Soap A and B Tanks	42S	42E	New Const.	396	3.3	8.58	5.6628	8,007	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.96	233	Does not apply	VOC	35.2	HAP	n/a	EPA
Liquid Soap A and B Tanks	43S	43E	New Const.	396	3.3	8.58	5.6628	147,994	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	7.93	503	Does not apply	VOC	390.6	HAP	n/a	EPA
Liquid Soap A and B Tanks	44S	44E	New Const.	396	3.3	8.58	5.6628	11,983	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.68	503	Does not apply	VOC	113.8	HAP	n/a	EPA
Liquid Soap A and B Tanks	45S	45E	New Const.	396	3.3	8.58	5.6628	121,569	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.82E-03	8.71	108	Does not apply	VOC	1.68E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	46S	46E	New Const.	396	3.3	8.58	5.6628	14,581	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	4.50E-01	8.31	503	Does not apply	VOC	76.6	HAP	n/a	EPA
Liquid Soap A and B Tanks	47S	47E	New Const.	396	3.3	8.58	5.6628	8,418	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.35	503	Does not apply	VOC	79.9	HAP	n/a	EPA
Liquid Soap A and B Tanks	51S	51E	New Const.	396	3.3	8.58	5.6628	n/a	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	n/a	n/a	n/a	Does not apply	VOC	n/a	HAP	n/a	EPA
Liquid Soap A and B Tanks	52S	52E	New Const.	396	3.3	8.58	5.6628	990	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	9.24E-03	HAP	n/a	EPA
Liquid Soap A and B Tanks	54S	54E	New Const.	660	3.3	8.58	5.6628	267,217	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.24E-03	8.35	323	Does not apply	VOC	5.69E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	55S	55E	New Const.	396	3.3	8.58	5.6628	75	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.50	503	Does not apply	VOC	7.09E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	57S	57E	New Const.	1,057	3.3	8.58	5.6628	24,591	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.59E-03	9.09	76	Does not apply	VOC	5.75E-02	HAP	n/a	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	59S	59E	New Const.	396	3.3	8.58	5.6628	2,260	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	1.59E-03	9.09	76	Does not apply	VOC	6.32E-03	HAP	n/a	EPA
Liquid Soap A and B Tanks	60S	60E	New Const.	132	2.3	5.98	3.9468	1,953	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	5.80E-04	8.41	138	Does not apply	VOC	3.63E-03	HAP	0.0	EPA
Liquid Soap A and B Tanks	61S	61E	New Const.	396	3.3	8.58	5.6628	175,632	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	8.13E-01	8.31	503	Does not apply	VOC	434.4	HAP	n/a	EPA
Liquid Soap A and B Tanks	63S	63E	New Const.	396	3.3	8.58	5.6628	38,430	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	3.40E-01	7.59	503	Does not apply	VOC	90.8	HAP	n/a	EPA
Liquid Soap A and B Tanks	64S	64E	New Const.	396	3.3	8.58	5.6628	15,482	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	8.7	HAP	4.34E-02	EPA
Liquid Soap A and B Tanks	65S	65E	New Const.	396	3.3	8.58	5.6628	14,619	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	8.2	HAP	4.09E-02	EPA
Liquid Soap A and B Tanks	66S	66E	New Const.	396	3.3	8.58	5.6628	24,900	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	11.6	HAP	5.78E-02	EPA
Liquid Soap A and B Tanks	67S	67E	New Const.	396	3.3	8.58	5.6628	48,605	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	13.8	HAP	6.88E-02	EPA
Liquid Soap A and B Tanks	68S	68E	New Const.	396	3.3	8.58	5.6628	26,366	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	11.7	HAP	5.84E-02	EPA
Liquid Soap A and B Tanks	69S	69E	New Const.	396	3.3	8.58	5.6628	13,652	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	7.6	HAP	3.82E-02	EPA
Liquid Soap A and B Tanks	70S	70E	New Const.	396	3.3	8.58	5.6628	6,427	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	3.6	HAP	1.80E-02	EPA
Liquid Soap A and B Tanks	71S	71E	New Const.	396	3.3	8.58	5.6628	12,577	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	7.0	HAP	3.52E-02	EPA
Liquid Soap A and B Tanks	72S	72E	New Const.	396	3.3	8.58	5.6628	31,508	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	12.2	HAP	6.08E-02	EPA
Liquid Soap A and B Tanks	73S	73E	New Const.	396	3.3	8.58	5.6628	15,126	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	8.5	HAP	4.24E-02	EPA
Liquid Soap A and B Tanks	74S	74E	New Const.	396	3.3	8.58	5.6628	64,637	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	15.3	HAP	7.63E-02	EPA
Liquid Soap A and B Tanks	75S	75E	New Const.	396	3.3	8.58	5.6628	18,314	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	10.3	HAP	5.13E-02	EPA
Liquid Soap A and B Tanks	76S	76E	New Const.	396	3.3	8.58	5.6628	29,347	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	12.0	HAP	5.98E-02	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	77S	77E	New Const.	396	3.3	8.58	5.6628	43,353	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	74	Steam or Hot Water	Dulles Airport, Washington DC	1.20E-01	8.71	200	Does not apply	VOC	13.3	HAP	6.64E-02	EPA
Liquid Soap A and B Tanks	87S	87E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.5	HAP	n/a	EPA
Liquid Soap A and B Tanks	88S	88E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	89S	89E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	90S	90E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	91S	91E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	92S	92E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	93S	93E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	94S	94E	New Const.	1,585	5.3	13.78	9.0948	3,799,073	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	3.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	94bS	94bE	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	2.0	HAP	n/a	EPA
Liquid Soap A and B Tanks	94cS	94cE	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	1.8	HAP	n/a	EPA
Liquid Soap A and B Tanks	94dS	94dE	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	1.8	HAP	n/a	EPA
Liquid Soap A and B Tanks	94eS	94eE	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.10E-03	8.71	200	Does not apply	VOC	1.8	HAP	n/a	EPA
Liquid Soap A and B Tanks	95S	95E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	5.67E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	96S	96E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	97S	97E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	98S	98E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	99S	99E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	100S	100E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	101S	101E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	102S	102E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	103S	103E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	104S	104E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	105S	105E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	106S	106E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	107S	107E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	108S	108E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	109S	109E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	110S	110E	New Const.	1,585	5.3	13.78	9.0948	3,973,279	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	4.82E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	111S	111E	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	3.18E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	112S	112E	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	2.74E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	113S	113E	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	2.74E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	114S	114E	New Const.	1,585	5.3	13.78	9.0948	2,048,433	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	2.74E-01	HAP	n/a	EPA
Liquid Soap A and B Tanks	115S	115E	New Const.	1,585	5.3	13.78	9.0948	7,786	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	6.05E-03	HAP	n/a	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Liquid Soap A and B Tanks	116S	116E	New Const.	1,585	5.3	13.78	9.0948	7,786	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	5.04E-03	HAP	n/a	EPA
Liquid Soap A and B Tanks	117S	117E	New Const.	1,585	5.3	13.78	9.0948	7,786	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	5.04E-03	HAP	n/a	EPA
Liquid Soap A and B Tanks	118S	118E	New Const.	1,585	5.3	13.78	9.0948	7,786	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	90	Steam or Hot Water	Dulles Airport, Washington DC	1.71E-04	8.71	200	Does not apply	VOC	5.04E-03	HAP	n/a	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	163S	132E	New Const.	42,879	13.5	36.1	23.8	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	n/a	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	164S	133E	New Const.	37,641	13.5	36.1	23.8	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	n/a	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	165S	134E	New Const.	6,809	7.9	18.4	12.1	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	3.1	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	166S	135E	New Const.	396	2.5	6.5	4.29	78,893	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	47.1	HAP	2.36E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	167S	136E	New Const.	396	2.5	6.5	4.29	78,893	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	47.1	HAP	2.36E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	168S	137E	New Const.	396	2.5	6.5	4.29	78,893	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	47.1	HAP	2.36E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	169S	138E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	170S	139E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	171S	140E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	172S	141E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	173S	142E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	174S	143E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	175S	144E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA

Attachment L

EMISSIONS UNIT DATA SHEET - STORAGE TANKS

1	3	4	6	8	9A	9B	10A	13A	18	20	22A	22B	22C	27	38B	39C	39D	40	41				
Bulk Storage Area Name	**Tank Equipment Identification Number**	**Emission Point Identification Number**	**Type of Change**	**Capacity (gallons)**	**Internal Diameter (ft)**	**Internal Height (ft)**	**Max Liquid Height**	**Max Annual Throughput (gal/yr)**	**Type of Tank**	**Shell Color/Roof Color**	**Are the Tanks Heated?**	**Provide the operating temperature (F)**	**Describe how heat is provided to the tank**	**City/State for TANKS calculations**	**Max Vapor Pressure (psi)**	**Liquid Density (lb/gal)**	**Liquid Molecular Weight (lb/lb-mol)**	**Emission Control Devices**	**Material Classification**	**Annual Loss (lb/year)**	**Material Classification**	**Annual Loss (lb/year)**	**Estimation Method**
Dry Consumer Laundry and Cleaning Products A Tanks	176S	145E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	177S	146E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	178S	147E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	179S	148E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	180S	149E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	181S	150E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	182S	151E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	183S	152E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	184S	153E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	185S	154E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	186S	155E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	187S	156E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Dry Consumer Laundry and Cleaning Products A Tanks	188S	157E	New Const.	181	2.3	6.0	3.96	39,447	Vertical Fixed Roof Aboveground	Grey/Grey	Yes	77	Steam or Hot Water	Dulles Airport, Washington DC	0.50	8.81	200	Does not apply	VOC	28.6	HAP	1.43E-01	EPA
Fuel Tanks	208S	177E	New Const.	5,162	8.0	20.8	13.73	70,000	Vertical Fixed Roof Aboveground	Grey/Grey	No	Ambient	N/A	Dulles Airport, Washington DC	2.20E-02	7.1	130	Does not apply	VOC	4.6	HAP	n/a	EPA

Attachment L					
EMISSIONS UNIT DATA SHEET - BULK LIQUID TRANSFER OPERATIONS					
Number:	**Question:**	**Response:**			**Notes:**
	Sheet version:	Bulk Liquid Transfer			
0	Identification Number	19S			
1	Loading Area Name	Surfactant Bulk Liquid Transfer			
2	Type of Cargo Vessels Accommodated at this Transfer Point	Rail Tank Cars and Tank Trucks			Choose: Drums, Marine Vessels, Rail Tank Cars, and Tank Trucks
7	Projected Maximum Operating Schedule	24/7/365			
8	Bulk Liquid Data				
	Liquid Name	PAM	Surfactant	Sulfuric Acid	
	Annual throughput (Mgal/yr)	150	15,000	2,000	
	Max. Bulk Liquid Temp (F)	69	69	69	
	True vapor pressure (psia)	1.69E-03	1.50E-03	1.69E-03	
	Fill type	Submerged	Submerged	Submerged	
	VOC Emission Rate (lb/yr)	3.5E-01	60.1	--	
	H_2SO_4 Emission Rate (lb/yr)	1.1E-01	--	4.7	
	Control Equipment	N/A	N/A	N/A	

Attachment L
EMISSIONS UNIT DATA SHEET - PAVED HAUL ROADS

Utilities - Road - Constants

Parameter	Value	Unit
Industrial augmentation factor	1	dimensionless
Number of traffic lanes	2	
Surface material silt content[1]	3.3%	%
Surface dust loading	125	lb/mile

Utilities - Road - Parameters

Description	Average Weight[2] (tons)	Miles per Trip[2]	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID	Control Efficiency %
Delivery Trucks	40	0.04167	30.8	365	--	--
Employee Vehicles	2	0.04167	0.5	365	--	--

Utilities - Road - Emissions

Pollutant	Uncontrolled TSP Emissions[3]		Controlled TSP Emissions	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Delivery Trucks	5.0E-04	2.2E-03	--	--
Employee Vehicles	1.0E-06	4.4E-06	--	--
TOTAL	5.0E-04	2.2E-03	--	--

1. Conservatively assumed to be equal to average factor for Asphalt Batching, AP-42 Section 13.2.1 *Paved Roads* , Table 13.2.1-3

2. Conservative assumption based on Procter and Gamble design data.

3. From Emission Factor Documentation for AP-42 Section 13.2.1, *Paved Roads,* Equation 2-2, as sited in WV DEP R-13 Permit Form Attachment L for Haul Roads

Attachment L			
EMISSIONS UNIT DATA SHEET - INDIRECT HEAT EXCHANGER			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Indirect Heat Exchanger	
0	Control Device ID No.	165E and 166E	
1	Manufacturer	Cleaver - Brooks	
2	Model Number: Serial Number:	TBD	
3	Number of Units	2	
4	Use	Plant steam	
7	Date Constructed	November 2016	
9	Maximum design heat input per unit	62	MMBtu/hr
10	Peak heat input per unit		
11	Steam produced at maximum design output	50,267 each	pph
12	Projected Operating Schedule	24/7/365	
13	Type of Firing Equipment to be Used	Natural Gas Burners	Choose from pulverized coal, spreader stoker, oil burners, natural gas burners, or other.
25	Fuel	Natural Gas	
	Quantity of Fuel Used (ft3/hr)	62,000 each	
	Quantity of Fuel Used Annually ($MMft^3/hr$)	4,757,731 each	
	BTU Content (BTU/ft^3)	1,000	
38	Emissions after control (lb/hr)		
	CO	4.6	
	NO_X	9.0	
	Pb	1.2E-04	
	PM_{10}	9.3E-01	
	SO_2	7.4E-02	
	VOC	4.5E-01	

Attachment L			
EMISSIONS UNIT DATA SHEET - INDIRECT HEAT EXCHANGER			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Indirect Heat Exchanger	
0	Control Device ID No.	167E	
1	Manufacturer	Cleaver - Brooks	
2	Model Number: Serial Number:	TBD	
3	Number of Units	1	
4	Use	Plant steam	
7	Date Constructed	November 2016	
9	Maximum design heat input per unit	31	MMBtu/hr
10	Peak heat input per unit		
11	Steam produced at maximum design output	25,134	pph
12	Projected Operating Schedule	24/7/365	
13	Type of Firing Equipment to be Used	Natural Gas Burners	Choose from pulverized coal, spreader stoker, oil burners, natural gas burners, or other.
25	Fuel	Natural Gas	
	Quantity of Fuel Used (ft3/hr)	31,000	
	Quantity of Fuel Used Annually ($MMft^3/hr$)	2,378,866	
	BTU Content (BTU/ft^3)	1,000	
38	Emissions after control (lb/hr)		
	CO	1.1	
	NO_X	2.3	
	Pb	1.5E-05	
	PM_{10}	2.3E-01	
	SO_2	1.9E-02	
	VOC	1.1E-01	

Attachment L			
EMISSIONS UNIT DATA SHEET - INDIRECT HEAT EXCHANGER			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Indirect Heat Exchanger	
0	Control Device ID No.	168E	
1	Manufacturer	Cleaver - Brooks	
2	Model Number: Serial Number:	TBD	
3	Number of Units	1	
4	Use	Plant steam	
7	Date Constructed	November 2016	
9	Maximum design heat input per unit	11	MMBtu/hr
10	Peak heat input per unit		
11	Steam produced at maximum design output	8,918	pph
12	Projected Operating Schedule	As Needed	
13	Type of Firing Equipment to be Used	Natural Gas Burners	Choose from pulverized coal, spreader stoker, oil burners, natural gas burners, or other.
25	Fuel	Natural Gas	
	Quantity of Fuel Used (ft3/hr)	11,000	
	Quantity of Fuel Used Annually ($MMft^3/hr$)	844,114	
	BTU Content (BTU/ft^3)	1,000	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	1S and 2S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Surfactant Making Process	
4	Names and maximum amount of proposed process materials produced per hour	6,000 gal/hr	gal/hr of finished product
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	1. Combustion of liquid S to SO_2' 2. Oxidation of SO_2 to SO_3 2. SO_3 reacted with organic fatty alcohol	
6	Combustion data	Sulfur will be burned. Natural gas burned during startup	
7	Projected operating schedule	24/7/365	
8	Pollutant	NO_X	
	Emission Rate (lb/hr)	1.8	
	Pollutant	CO	
	Emission Rate (lb/hr)	0.1	
	Pollutant	SO_2	
	Emission Rate (lb/hr)	2.1	
	Pollutant	VOC	
	Emission Rate (lb/hr)	1.9	
	Pollutant	PM_{10}	
	Emission Rate (lb/hr)	7.0	
	Pollutant	CO	
	Emission Rate (lb/hr)	1.3	
	Pollutant	H_2SO_4	
	Emission Rate (lb/hr)	5.1	
	Emission Rate (lb/hr)	Lead	
	Pollutant	7.8E-06	
	Pollutant	HAP	
	Emission Rate (lb/hr)	3.0E-02	
9	Recordkeeping	NSPS VVa: Recordkeeping to show that facility is exempt.	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	119S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Liquid Soap A and B Packing/Filling	
4	Names and maximum amount of proposed process materials produced per hour	15,959	gal/hour of finished product
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	2.5E-04	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	195S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Dry Consumer Laundry and Cleaning Products A Additive 1	
4	Names and maximum amount of proposed process materials produced per hour	393,701	ft/hr of finished product
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	2.0	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	216S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Water Pretreatment Chemicals	
4	Names and maximum amount of proposed process materials produced per hour	44	lb/hr (of materials that contain VOC and/or HAP)
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	3.0	
	Pollutant	HAP	
	Emission Rate (lb/hr)	9.1E-04	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	247S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Forming	
4	Names and maximum amount of proposed process materials produced per hour	100,000	tons/year
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	7.0E-01	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	248S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Parts Washing/Process Cleaning	
4	Names and maximum amount of proposed process materials produced per hour	6	tons/year
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	1.4	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	257S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Printing Ink	
4	Names and maximum amount of proposed process materials produced per hour	0.39 lb/hr	lb/hr (of materials that contain VOC and/or HAP)
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	8.65E-02	
	Pollutant	HAP	
	Emission Rate (lb/hr)	3.7E-02	

Attachment L			
EMISSIONS UNIT DATA SHEET - GENERAL			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	General	
0	Identification Number	258S	as assigned on Equipment List Form
1	Name or type and model of proposed affected source	Case Packing Glue	
4	Names and maximum amount of proposed process materials produced per hour	79 lb/hr	lb/hr (of materials that contain VOC and/or HAP)
5	Give chemical reactions, if applicable, that will be involved in the generation of air pollutants	N/A	
7	Projected operating schedule	24/7/365	
8	Pollutant	VOC	
	Emission Rate (lb/hr)	4.73E-02	
	Pollutant	HAP	
	Emission Rate (lb/hr)	1.6E-03	

ATTACHMENT M

Air Pollution Control Device Sheet

Attachment M			
AIR POLLUTION CONTROL DEVICE SHEET			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Wet Collecting System - Scrubber	
	Equipment Description	Surfactant Making Process	
0	Control Device ID No.:	1C	Must match Emission Units Table
2	Method:	Packed Bed	Choices: *Packed bed, spray tower, mechanical, venturi, cycle, orifice, other (specify)*
10	Scrubbing Liquor:	Water	Composition and weight %
13	Pressure drop through scrubber:	~6	inches H_2O
15	Liquor flow rates to scrubber:	~572	Design maximum, gal/min
23	Gas flow rate:	~14,000 scfm	Design maximum, acfm
26	Type of pollutant(s) Controlled	SOx	Choose SOx, Odor, Particulate, Other

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Wet Collecting System - Scrubber	
	Equipment Description	Surfactant Making Process	
0	Control Device ID No.:	2C	Must match Emission Units Table
2	Method:	Packed Bed	Choices: *Packed bed, spray tower, mechanical, venturi, cycle, orifice, other (specify)*
10	Scrubbing Liquor:	Water	Composition and weight %
13	Pressure drop through scrubber:	~6	inches H_2O
15	Liquor flow rates to scrubber:	~572	Design maximum, gal/min
23	Gas flow rate:	~14,000 scfm	Design maximum, acfm
26	Type of pollutant(s) Controlled	SOx	Choose SOx, Odor, Particulate, Other

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	3C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~3000 acfm	
15	Gas Flow Rate into Collector	~2250 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	4C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~3000 acfm	
15	Gas Flow Rate into Collector	~4750 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	5C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~10.4	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~3000 acfm	
15	Gas Flow Rate into Collector	~4750 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	6C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~3000 acfm	
15	Gas Flow Rate into Collector	~3150 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	7C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~9600 acfm	
15	Gas Flow Rate into Collector	~1000 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	8C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~9600 acfm	
15	Gas Flow Rate into Collector	~1000 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	9C	Must match Emission Units Table
5	Pressure Drop (in H2O)	~11.2	
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	98%	Also include minimum %
13	Total flow rate	~5500 acfm	
15	Gas Flow Rate into Collector	~1750 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	10C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	98%	Also include minimum %
13	Total flow rate	~5500 acfm	
15	Gas Flow Rate into Collector	~1750 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	11C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~11.2	
9	Guaranteed collection efficiency:	98%	Also include minimum %
13	Total flow rate	~5500 acfm	
15	Gas Flow Rate into Collector	~1750 scfm	

Attachment M			
AIR POLLUTION CONTROL DEVICE SHEET			
Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclones	
0	Control Device ID No.:	12C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~5.2	
9	Guaranteed collection efficiency:	98%	Also include minimum %
13	Total flow rate	~5500 acfm	
15	Gas Flow Rate into Collector	~3050 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Rotoclone	
0	Control Device ID No.:	13C	Must match Emission Units Table
2	Method:	Wet	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
5	Pressure Drop (in H2O)	~9.2	
9	Guaranteed collection efficiency:	96%	Also include minimum %
13	Total flow rate	~5900 acfm	
15	Gas Flow Rate into Collector	~1400 scfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Flare system	
	Equipment Description	Regenerative Thermal Oxidizer	
0	Control Device ID No.:	14C	Must match Emission Units Table
5	Max capacity of flare:	75	scf/min
7	Estimated combustion efficiency:	97%	Estimated %
8	Fuel Used	Natural Gas	
9	Burner Rating	~2 MMBtu/hr	
30	Maximum mass flow rate of waste gas:	~6146	scf. Estimated total combustible to flare.
31	Estimated total flow rate to flare including material to be burned, carrier gases, auxiliary fuel, etc.:	~158.6	lb/hr
33	Temperature of emission stream (inlet)	~104-184	Degrees F
	Temperature of emission stream (outlet)	~1500	Degrees F

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Bin Vent Filter	
0	Control device ID No.:	15C	Must match Emission Units Table
16	Gas flow rate into collector:	~400 scfm	ACFM
21	Particulate Loading (outlet):	~0.02	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Baghouse	
0	Control device ID No.:	16C	Must match Emission Units Table
16	Gas flow rate into collector:	~275 scfm	ACFM
21	Particulate Loading (outlet):	~0.02	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Baghouse	
0	Control device ID No.:	17C	Must match Emission Units Table
16	Gas flow rate into collector:	~260 scfm	ACFM
21	Particulate Loading (outlet):	~0.02	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Baghouse	
0	Control device ID No.:	18C	Must match Emission Units Table
16	Gas flow rate into collector:	~18000 scfm	ACFM
21	Particulate Loading (outlet):	~0.01	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Baghouse	
0	Control device ID No.:	19C	Must match Emission Units Table
16	Gas flow rate into collector:	~18000 scfm	ACFM
21	Particulate Loading (outlet):	~0.01	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Baghouse	
0	Control device ID No.:	20C	Must match Emission Units Table
16	Gas flow rate into collector:	~6500 scfm	ACFM
21	Particulate Loading (outlet):	~0.01	grain/scf

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Cyclone	
0	Control Device ID No.:	21C	Must match Emission Units Table
2	Method:	Dry	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	90%	Also include minimum %
13	Total flow rate	~1298 cfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Cyclone	
0	Control Device ID No.:	22C	Must match Emission Units Table
2	Method:	Dry	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	90%	Also include minimum %
13	Total flow rate	~1298 cfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Cyclone	
0	Control Device ID No.:	23C	Must match Emission Units Table
2	Method:	Dry	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	90%	Also include minimum %
13	Total flow rate	~1298 cfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Cyclone	
0	Control Device ID No.:	24C	Must match Emission Units Table
2	Method:	Dry	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	90%	Also include minimum %
13	Total flow rate	~1298 cfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Mechanical Collector-Cyclone	
	Equipment Description	Cyclone	
0	Control Device ID No.:	25C	Must match Emission Units Table
2	Method:	Dry	Choices: *Wet, Single-stage, dry, multiple (number?), in series (number)*
9	Guaranteed collection efficiency:	90%	Also include minimum %
13	Total flow rate	~1298 cfm	

Number:	**Question:**	**Response:**	**Notes:**
	Sheet version:	Baghouse	
	Equipment Description	Bin Vent Filter	
0	Control device ID No.:	26C	Must match Emission Units Table
16	Gas flow rate into collector:	TBD	ACFM
21	Particulate Loading (outlet):	TBD	grain/scf

ATTACHMENT N

Supporting Emission Calculations

Table N-0a. Emissions Summary

Business Unit/Process	Potential to Emit (tpy)								
	PM	PM_{10}	$PM_{2.5}$	VOC	HAPs	NO_x	CO	SO_2	H_2SO_4
Chemicals	**23.6**	**23.6**	**23.6**	**5.5**	**9.2E-02**	**4.7**	**2.9E-01**	**1.6**	**19.4**
Tanks	--	--	--	1.2	9.1E-02	--	--	--	1.5E-03
Truck Loading	--	--	--	5.2E-02	--	--	--	--	2.4E-03
SO_2 Scrubber	23.6	23.6	23.6	4.2	1.1E-03	4.7	2.9E-01	1.6	19.4
Soap Making A & B	**20.0**	**20.0**	**20.0**	**44.1**	**3.4E-02**	**1.1**	**5.8**	**6.2E-03**	**0.0**
Tanks	--	--	--	2.6	3.4E-02	--	--	--	--
RTO	6.5E-02	6.5E-02	6.5E-02	8.0	5.2E-06	1.1	5.8	6.2E-03	--
Dust Control	20.0	20.0	20.0	33.4	--	--	--	--	--
Packing/Filling	--	--	--	1.11E-03	--	--	--	--	--
Dry Consumer Products A	**16.7**	**16.7**	**16.7**	**9.3**	**3.3E-03**	**0.0**	**0.0**	**0.0**	**0.0**
Tanks	--	--	--	0.7	3.3E-03	--	--	--	--
Converting	16.7	16.7	16.7	--	--	--	--	--	--
Additive	--	--	--	8.7	--	--	--	--	--
Utilities	**7.2**	**9.7**	**9.7**	**16.0**	**1.4**	**56.9**	**32.4**	**4.6E-01**	**4.9E-03**
Boilers	2.6	5.1	5.1	2.4	1.3E+00	49.4	25.1	4.1E-01	4.4E-03
Engines	7.0E-02	6.9E-02	6.9E-02	6.7E-02	2.3E-02	3.5	0.7	1.6E-03	--
Cooling Towers	3.9	3.9	3.9	--	--	--	--	--	--
Heaters	6.0E-01	6.0E-01	6.0E-01	4.3E-01	1.5E-01	3.9	6.6	4.7E-02	5.1E-04
Fuel Tanks	--	--	--	2.3E-03	--	--	--	--	--
Water Treatment Chemicals	--	--	--	13.0	4.0E-03	--	--	--	--
Auxiliary Activities	**5.8E+00**	**5.8E+00**	**5.8E+00**	**10.11**	**2.99E-01**	**3.8E+00**	**6.3E+00**	**4.4E-02**	**4.7E-04**
Glue Usage	--	--	--	2.07E-01	6.90E-03	--	--	--	**--**
Printing	--	--	--	3.79E-01	1.60E-01	--	--	--	--
Paved Roads	2.2E-03	--	--	--	--	--	--	--	--
Plastics Molding	5.80	5.80	5.80	9.52	1.3E-01	3.75	6.34	4.4E-02	4.7E-04
Total	**73.3**	**75.8**	**75.8**	**84.9**	**1.9**	**66.4**	**44.8**	**2.2**	**19.4**

Table N-0b. HAP - Emissions Summary

HAP Emissions	Potential to Emit											
	Hexane	Ethylene Oxide	Formaldehyde	Vinyl Acetate	1,4 Dioxane	Hydrogen Chloride	Acetophenone	Propylene	Chloroform	Lead	Glycol Ether	Other Combustion HAP[1]
Total (tpy)	1.46	4.8E-02	6.0E-02	6.9E-03	5.4E-02	1.8E-02	7.9E-05	9.2E-03	4.0E-03	4.1E-04	1.7E-01	2.1E-02

1. Includes: 2-methylnaphthalene, 3-methylchloranthrene, 7,12-Dimethylbenz(a)anthracene, acetaldehyde, acenaphthene, acenaphthylene, acrolein, anthracene, benz(a)anthracene, benzene, benzo(a)pyrene, bezo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dichlorobenzene, ethylbenzene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, OCDD, PAH, phenanathrene, pyrene, toluene, 1,1,1-Trichloroethane, o-xylene, xylenes, arsenic, antimony, beryllium, cadmium, chloride, chromium, chromium VI, cobalt, fluoride, manganese, mercury, nickel, phosphorus, selenium.

Table N-1. Surfactant Making - Outdoor Tank Emissions

EU ID	Throughput[1] (gal/yr)	Vapor Pressure[1] (psia)	Molecular Weight[1] (lb/lb-mol)	Bulk Liquid Temperature[1, 2] (°F)	Liquid Density[1] (lb/gal)	Tank Capacity[1] (gal)	VOC Potential to Emit[3]		HAP Potential to Emit[4]			H_2SO_4 Potential to Emit[3]	
							(lb/hr)	(tpy)	HAP Name	(lb/hr)	(tpy)	(lb/hr)	(tpy)
3	20,327,735	3.50E-03	197	90.5	6.84	120,762	1.3E-02	5.5E-02	--	--	--	--	--
4	8,805,475	3.42E-03	197	89.6	7.18	48,345	5.1E-03	2.2E-02	Ethylene Oxide	5.1E-03	2.2E-02	--	--
5	9,481,192	3.92E-03	197	95	7.68	40,109	5.5E-03	2.4E-02	Ethylene Oxide	5.5E-03	2.4E-02	--	--
6	1,917,922	8.62E-01	46	Ambient	6.58	40,109	2.0E-01	8.6E-01	--	--	--	--	--
7	7,823,046	1.50E-03	323	99.5	8.69	15,125	2.2E-03	9.5E-03	1, 4 Dioxane	4.6E-04	2.0E-03	--	--
8	7,823,046	1.50E-03	323	95	8.69	15,125	2.2E-03	9.6E-03	1, 4 Dioxane	4.6E-04	2.0E-03	--	--
9	6,841,173	1.50E-03	323	95	8.69	15,125	2.0E-03	8.7E-03	--	--	--	--	--
10	39,115,231	1.32E-03	323	99.5	8.35	72,475	9.4E-03	4.1E-02	1, 4 Dioxane	2.3E-03	1.0E-02	--	--
11	39,115,231	1.32E-03	323	99.5	8.35	72,475	9.4E-03	4.1E-02	1, 4 Dioxane	2.3E-03	1.0E-02	--	--
12	39,115,231	1.24E-03	323	95	8.35	72,475	9.0E-03	3.9E-02	1, 4 Dioxane	2.3E-03	1.0E-02	--	--
13	39,115,231	1.24E-03	323	95	8.35	72,475	9.0E-03	3.9E-02	1, 4 Dioxane	2.3E-03	1.0E-02	--	--
14	34,205,863	1.24E-03	323	95	8.35	72,475	8.1E-03	3.6E-02	--	--	--	--	--
15	34,205,863	1.24E-03	323	95	8.35	72,475	8.1E-03	3.6E-02	--	--	--	--	--
16	115,491	1.50E-03	323	95	8.69	26,083	1.4E-04	6.3E-04	--	--	--	--	--
17	2,000,000	1.69E-03	98	77	15.36	15,125	--	--	--	--	--	3.5E-04	1.5E-03
18	150,000	1.69E-03	98	77	15.36	15,125	6.6E-05	2.9E-04	--	--	--	--	--
Total							***2.8E-01***	***1.2***	***--***	***2.1E-02***	***9.1E-02***	***3.5E-04***	***1.5E-03***

1. Chemical data and tank parameters from Procter and Gamble.
2. All tanks will be temperature controlled (heated and insulated) except for the ambient tank. Unheated tank emissions for cold months (Dec-Feb) conservatively assumed to be equal to max warm month emissions.
3. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.
4. Trace amounts of HAP byproduct in surfactant.

Table N-2. Surfactant Making - Truck Loading Emissions

EU ID	Description	Amount Loaded (gal/truck)	Frequency Loaded (trucks/yr)	Vapor Pressure (psia)	Molecular Weight (lb/lb-mol)	Temp. R	Saturation Factor	VOC[1] (wt%)	H_2SO_4 wt%	Emission Factor (lb/10^3 gal)[2]		Hourly Emissions (lb/hr)		Annual Emissions (tpy)	
										VOC	H_2SO_4	VOC	H_2SO_4	VOC	H_2SO_4
19	PAM Truck Loadout	11,600	13	1.69E-03	98	528	0.6	100%	30%	2.35E-03	7.06E-04	4.0E-05	1.2E-05	1.8E-04	5.3E-05
	Surfactant Final Product Truck Loadout	11,600	1,293	1.50E-03	323	528	0.6	100%	0%	6.86E-03	--	1.2E-02	--	5.1E-02	--
	Sulfuric Acid Truck Loadout	11,600	172	1.69E-03	98	528	0.6	0%	100%	--	2.35E-03	--	5.4E-04	--	2.4E-03
													Total	5.2E-02	2.4E-03

1. Conservatively assumed that VOC content of PAM and surfactant finished product is 100%.
2. Loading loss emission factors calculated per AP-42, Chapter 5.2 (*Transportation and Marketing of Petroleum Liquids*), Equation 1. Assumes submerged filling.

Table N-3. Surfactant Making - Scrubber Stack

Emissions Unit	Operation[1]	Estimated Hours of Operation for System	Flowrate[2] (scfm)	Pollutant Concentration (ppm)[2]	Pollutant Concentration (mg/m^3)	Normal Hourly Emissions (lb/hr)						Annual Emissions (tpy)					
				NO_X	NO_X	NO_x	CO	SO_2	VOC	$PM_{10}/PM_{2.5}$[3]	H_2SO_4	NO_x	CO	SO_2	VOC	$PM_{10}/PM_{2.5}$[3]	H_2SO_4
1C	Normal	8,760	14,000	5	10.13	5.3E-01	--	1.3E-01	4.51E-01	2.1	1.7	2.3	--	5.6E-01	2.0	9.4	7.4
	Change Over	365		--	--	--	--	--	9.02E-01	2.59	1.69	--	--	--	1.65E-01	4.73E-01	3.08E-01
	Sulfuric Acid Production	8,760		--	--	--	--	--	--	8.5E-01	8.5E-01	--	--	--	--	3.7	3.7
	Start-Up	288		--	--	--	--	1.8	--	1.7	1.7	--	--	2.60E-01	--	2.43E-01	2.43E-01
2C	Normal	8,760	14,000	5	10.13	5.3E-01	--	1.3E-01	4.5E-01	2.1	1.7	2.3	--	5.6E-01	2.0	9.4	7.4
	Change Over	156		--	--	--	--	--	9.0E-01	2.6	1.7	--	--	--	7.0E-02	2.0E-01	1.3E-01
	Sulfuric Acid Production	0		--	--	--	--	--	--	8.5E-01	8.5E-01	--	--	--	--	--	--
	Start-Up	288		--	--	--	--	1.8	--	1.7	1.7	--	--	2.6E-01	--	2.4E-01	2.4E-01
Total												**4.7**	**0.2**	**1.6**	**4.2**	**23.6**	**19.4**

Emissions Unit	Operation[1]	Pollutant Concentration (ppm)[2]	Pollutant Concentration (mg/m^3)	Worst-Case Hourly Emissions Per Stack (lb/hr)					
		NO_X	NO_X	NO_x	CO	SO_2	VOC	$PM_{10}/PM_{2.5}$[3]	H_2SO_4
1C or 2C Maximum Hour	Normal	5	10.13	5.3E-01	--	1.3E-01	4.5E-01	2.1	1.7
	Change Over	--	--	5.3E-01	--	--	1.4	4.7	3.4
	Start-Up	--	--	5.3E-01	--	1.9	--	3.4	3.4
Total[4]				**1.1**	**0.1**	**2.1**	**1.80**	**6.9**	**5.1**

1. Assumes process is running normally 8,760 hours per year. Change Over/Start-Up/Sulfuric Acid Production is added as additional emissions beyond the baseline.
2. Per vendor-provided specifications and emissions data.
3. Conservatively assumes $PM_{10} = PM_{2.5}$.
4. Maximum hourly emissions are calculated as the maximum of the start-up and change over emissions added to the normal emissions per stack.

Table N-4. Scrubber Preheaters - Start-up Operations [1]

Number of Heaters	Heater Rated Capacity (MMBtu/hr)	Annual Operating Hours (hr/yr)	Natural Gas Heating Value (HHV) (Btu/scf)	Pollutant	Emission Factor (lb/MMscf)	Reference	Emissions (lb/hr)	Emissions (tpy)
4	4	72	1,020	NO_x	50	2	7.8E-01	2.8E-02
				CO	84	2	1.3E+00	4.7E-02
				PM	7.60	2	1.2E-01	4.3E-03
				PM_{10}	7.60	2	1.2E-01	4.3E-03
				$PM_{2.5}$	7.60	2	1.2E-01	4.3E-03
				SO_2	0.60	2	9.4E-03	3.4E-04
				VOC	5.50	2	8.6E-02	3.1E-03
				H_2SO_4	6.50E-03	3	1.0E-04	3.7E-06
				Lead	5.00E-04	2	7.8E-06	2.8E-07
				2-Methylnaphthalene	2.40E-05	4	3.8E-07	1.4E-08
				3-Methylchloranthrene	1.80E-06	4	2.8E-08	1.0E-09
				7,12-Dimethylbenz(a)anthracene	1.60E-05	4	2.5E-07	9.0E-09
				Acenaphthene	1.80E-06	4	2.8E-08	1.0E-09
				Acenaphthylene	1.80E-06	4	2.8E-08	1.0E-09
				Anthracene	2.40E-06	4	3.8E-08	1.4E-09
				Benz(a)anthracene	1.80E-06	4	2.8E-08	1.0E-09
				Benzene	2.10E-03	4	3.3E-05	1.2E-06
				Benzo(a)pyrene	1.20E-06	4	1.9E-08	6.8E-10
				Benzo(b)fluoranthene	1.80E-06	4	2.8E-08	1.0E-09
				Benzo(g,h,i)perylene	1.20E-06	4	1.9E-08	6.8E-10
				Benzo(k)fluoranthene	1.80E-06	4	2.8E-08	1.0E-09
				Chrysene	1.80E-06	4	2.8E-08	1.0E-09
				Dibenzo(a,h)anthracene	1.20E-06	4	1.9E-08	6.8E-10
				Dichlorobenzene	1.20E-03	4	1.9E-05	6.8E-07
				Fluoranthene	3.00E-06	4	4.7E-08	1.7E-09
				Fluorene	2.80E-06	4	4.4E-08	1.6E-09
				Formaldehyde	7.50E-02	4	1.2E-03	4.2E-05
				Hexane	1.80E+00	4	2.8E-02	1.0E-03
				Indeno(1,2,3-cd)pyrene	1.80E-06	4	2.8E-08	1.0E-09
				Naphthalene	6.10E-04	4	9.6E-06	3.4E-07
				Phenanathrene	1.70E-05	4	2.7E-07	9.6E-09
				Pyrene	5.00E-06	4	7.8E-08	2.8E-09
				Toluene	3.40E-03	4	5.3E-05	1.9E-06
				Arsenic	2.00E-04	4	3.1E-06	1.1E-07
				Beryllium	1.20E-05	4	1.9E-07	6.8E-09
				Cadmium	1.10E-03	4	1.7E-05	6.2E-07
				Chromium	1.40E-03	4	2.2E-05	7.9E-07
				Cobalt	8.40E-05	4	1.3E-06	4.7E-08
				Lead	5.00E-04	4	7.8E-06	2.8E-07
				Manganese	3.80E-04	4	6.0E-06	2.1E-07
				Mercury	2.60E-04	4	4.1E-06	1.5E-07
				Nickel	2.10E-03	4	3.3E-05	1.2E-06
				Selenium	2.40E-05	4	3.8E-07	1.4E-08
				Max HAP			***2.8E-02***	***1.0E-03***
				Total HAPs			***3.0E-02***	***1.1E-03***

1. During startup, combustion emissions from the catalyst bed are exhausted through the SO_2 scrubber.
2. Natural gas emission factors from AP-42 Section 1.4. PM assumed to equal PM_{10}.
3. Natural gas factor calculated assuming 1% of sulfur becomes H_2SO_4.
4. Natural gas emission factors from AP-42, Tables 1.4-3 and 1.4-4.

Table N-5. Liquid Soap A and B Making - Outdoor Tank Emissions

EU ID	Description	Throughput[1] (gal/yr)	Vapor Pressure (psia)	Molecular Weight (lb/lb-mol)	Liquid Density (lb/gal)	Bulk Liquid Temperature[2] (°F)	Tank Capacity[1] (gal)	VOC Potential to Emit[2] (lb/hr)	VOC Potential to Emit[2] (tpy)	HAP Potential to Emit[3] HAP Name	HAP Potential to Emit[3] (lb/hr)	HAP Potential to Emit[3] (tpy)
20	Raw Material	13,431,682	1.32E-03	323	8.35	113	39,626	3.6E-03	1.6E-02	1, 4 Dioxane	7.9E-04	3.5E-03
21	Raw Material	24,833,180	1.24E-03	323	8.35	113	39,626	5.3E-03	2.3E-02	1, 4 Dioxane	1.5E-03	6.4E-03
22	Raw Material	18,189,304	1.24E-03	323	8.35	113	39,626	4.2E-03	1.8E-02	--	--	--
23	Raw Material	291,058	1.24E-03	323	8.35	113	7,925	2.8E-04	1.2E-03	Ethylene Oxide	2.8E-04	1.2E-03
24	Raw Material	229,500	2.03E-01	36	9.16	113	7,925	--	--	Hydrogen Chloride	4.2E-03	1.8E-02
25	Raw Material	46,050,900	9.28E-17	343	0.88	113	39,626	7.0E-16	3.1E-15	--	--	--
26	Raw Material	685,694	n/a	503	7.51	113	15,850	n/a	0.0E+00	--	--	--
27	Raw Material	2,317,226	1.60E-03	388	8.97	113	39,626	2.4E-03	1.0E-02	--	--	--
28	Raw Material	2,012,364	1.93E-04	270	6.78	113	26,417	1.5E-04	6.4E-04	--	--	--
29	Raw Material	1,039,693	1.16E-07	242	6.77	113	15,850	4.4E-08	1.9E-07	--	--	--
30	Raw Material	1,646,085	7.25E-05	503	8.35	113	26,417	9.6E-05	4.2E-04	--	--	--
31	Raw Material	1,691,510	3.30E-02	503	8.35	113	15,850	3.0E-02	1.3E-01	--	--	--
32	Raw Material	240,216	8.13E-01	368	7.93	113	15,850	n/a	7.8E-01	--	--	--
33	Raw Material	282,057	4.83E-05	92	10.52	77	7,925	5.6E-07	1.4E-05	--	--	--
34	Raw Material	146,204	5.00E-01	200	8.71	Ambient	7,925	7.2E-02	3.2E-01	See Note 4	3.6E-04	1.6E-03
35	Raw Material	47,372	5.00E-01	200	8.71	Ambient	7,925	4.5E-02	2.0E-01	See Note 4	2.3E-04	9.9E-04
36	Raw Material	38,244	5.00E-01	200	8.71	Ambient	7,925	4.3E-02	1.9E-01	See Note 4	2.1E-04	9.3E-04
37	Raw Material	7,552	5.00E-01	200	8.71	Ambient	7,925	3.4E-02	1.5E-01	See Note 4	1.7E-04	7.4E-04
50	Raw Material	696,309	1.24E-03	323	8.35	77	7,925	4.8E-04	2.1E-03	--	--	--
56	Raw Material	287,453	1.59E-03	76	9.09	77	7,275	9.2E-05	4.0E-04	--	--	--
53	Raw Material	112,722	1.24E-03	323	8.35	77	7,925	1.2E-04	5.26E-04	--	--	--
							Total	***2.4E-01***	***1.8***	**--**	***7.7E-03***	***3.4E-02***

1. Tank capacities and throughputs per Procter and Gamble design data sheets.
2. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.
3. HAP Emissions from perfumes assumed to be 0.5% of VOC emissions. Trace amount of byproduct HAP in surfactant.
4. Based upon assessment of raw material composition, HAP speciation determined to be 99% glycol ether and 1% acetophenone.

Table N-6. Liquid Soap A and B Making - Indoor Tank Emissions

EU ID	Description	Throughput[1] (gal/yr)	Vapor Pressure[2] (psia)	Molecular Weight[2] (lb/lb-mol)	Liquid Density[2] (lb/gal)	Bulk Liquid Temperature[1] (°F)	Tank Capacity[1] (gal)	VOC Potential to Emit[2,3] (lb/hr)	VOC Potential to Emit[2,3] (tpy)	HAP Potential to Emit[4] (lb/hr)	HAP Potential to Emit[4] (tpy)
38	Raw Material	37,808	8.13E-01	503	8.50	77	396	2.5E-02	1.1E-01	--	--
40	Raw Material	16,874	5.61E-02	292	12.02	77	396	7.3E-04	3.2E-03	--	--
41	Raw Material	12,883	2.90E-10	205	10.01	77	396	2.0E-12	8.9E-12	--	--
42	Raw Material	8,007	8.13E-01	233	8.96	77	396	4.0E-03	1.8E-02	--	--
43	Raw Material	147,994	8.13E-01	503	7.93	77	396	4.5E-02	2.0E-01	--	--
44	Raw Material	11,983	8.13E-01	503	8.68	77	396	1.3E-02	5.7E-02	--	--
45	Raw Material	121,569	1.82E-03	108	8.71	77	396	1.9E-05	8.4E-05	--	--
46	Raw Material	14,581	4.50E-01	503	8.31	77	396	8.7E-03	3.8E-02	--	--
47	Raw Material	8,418	8.13E-01	503	8.35	77	396	9.1E-03	4.0E-02	--	--
51	Raw Material	n/a	n/a	n/a	n/a	77	396	n/a	n/a	--	--
52	Raw Material	990	1.24E-03	323	8.35	77	396	1.1E-06	4.6E-06	--	--
54	Raw Material	267,217	1.24E-03	323	8.35	77	660	6.5E-05	2.8E-04	--	--
55	Raw Material	75	8.13E-01	503	8.50	77	396	8.1E-05	3.5E-04	--	--
57	Raw Material	24,591	1.59E-03	76	9.09	77	1,057	6.6E-06	2.9E-05	--	--
59	Raw Material	2,260	1.59E-03	76	9.09	77	396	7.2E-07	3.2E-06	--	--
60	Raw Material	1,953	5.80E-04	138	8.41	77	132	4.1E-07	1.8E-06	4.1E-07	1.8E-06
61	Raw Material	175,632	8.13E-01	503	8.31	77	396	5.0E-02	2.2E-01	--	--
63	Raw Material	38,430	3.40E-01	503	7.59	77	396	1.0E-02	4.5E-02	--	--
64	Raw Material	15,482	0.12	200	8.71	74	396	9.9E-04	4.3E-03	4.9E-06	2.2E-05
65	Raw Material	14,619	0.12	200	8.71	74	396	9.3E-04	4.1E-03	4.7E-06	2.0E-05
66	Raw Material	24,900	0.12	200	8.71	74	396	1.3E-03	5.8E-03	6.6E-06	2.9E-05
67	Raw Material	48,605	0.12	200	8.71	74	396	1.6E-03	6.9E-03	7.9E-06	3.4E-05
68	Raw Material	26,366	0.12	200	8.71	74	396	1.3E-03	5.8E-03	6.7E-06	2.9E-05
69	Raw Material	13,652	0.12	200	8.71	74	396	8.7E-04	3.8E-03	4.4E-06	1.9E-05
70	Raw Material	6,427	0.12	200	8.71	74	396	4.1E-04	1.8E-03	2.1E-06	9.0E-06
71	Raw Material	12,577	0.12	200	8.71	74	396	8.0E-04	3.5E-03	4.0E-06	1.8E-05
72	Raw Material	31,508	0.12	200	8.71	74	396	1.4E-03	6.1E-03	6.9E-06	3.0E-05
73	Raw Material	15,126	0.12	200	8.71	74	396	9.7E-04	4.2E-03	4.8E-06	2.1E-05
74	Raw Material	64,637	0.12	200	8.71	74	396	1.7E-03	7.6E-03	8.7E-06	3.8E-05
75	Raw Material	18,314	0.12	200	8.71	74	396	1.2E-03	5.1E-03	5.9E-06	2.6E-05
76	Raw Material	29,347	0.12	200	8.71	74	396	1.4E-03	6.0E-03	6.8E-06	3.0E-05
77	Raw Material	43,353	0.12	200	8.71	74	396	1.5E-03	6.6E-03	7.6E-06	3.3E-05

Table N-6. Liquid Soap A and B Making - Indoor Tank Emissions

EU ID	Description	Throughput[1] (gal/yr)	Vapor Pressure[2] (psia)	Molecular Weight[2] (lb/lb-mol)	Liquid Density[2] (lb/gal)	Bulk Liquid Temperature[1] (°F)	Tank Capacity[1] (gal)	VOC Potential to Emit[2,3] (lb/hr)	VOC Potential to Emit[2,3] (tpy)	HAP Potential to Emit[4] (lb/hr)	HAP Potential to Emit[4] (tpy)
87	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	4.0E-04	1.7E-03	--	--
88	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
89	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
90	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
91	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
92	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
93	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
94	Finished Product	3,799,073	0.0011	200	8.71	90	1,585	3.4E-04	1.5E-03	--	--
94b	Finished Product	2,048,433	0.0011	200	8.71	90	1,585	2.3E-04	1.0E-03	--	--
94c	Finished Product	2,048,433	0.0011	200	8.71	90	1,585	2.0E-04	8.8E-04	--	--
94d	Finished Product	2,048,433	0.0011	200	8.71	90	1,585	2.0E-04	8.8E-04	--	--
94e	Finished Product	2,048,433	0.0011	200	8.71	90	1,585	2.0E-04	8.8E-04	--	--
95	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	6.5E-05	2.8E-04	--	--
96	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
97	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
98	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
99	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
100	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
101	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
102	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
103	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
104	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
105	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
106	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
107	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
108	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
109	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
110	Finished Product	3,973,279	0.0002	200	8.71	90	1,585	5.5E-05	2.4E-04	--	--
111	Finished Product	2,048,433	0.0002	200	8.71	90	1,585	3.6E-05	1.6E-04	--	--
112	Finished Product	2,048,433	0.0002	200	8.71	90	1,585	3.1E-05	1.4E-04	--	--
113	Finished Product	2,048,433	0.0002	200	8.71	90	1,585	3.1E-05	1.4E-04	--	--
114	Finished Product	2,048,433	0.0002	200	8.71	90	1,585	3.1E-05	1.4E-04	--	--
115	Finished Product	7,786	0.0002	200	8.71	90	1,585	6.9E-07	3.0E-06	--	--
116	Finished Product	7,786	0.0002	200	8.71	90	1,585	5.8E-07	2.5E-06	--	--
117	Finished Product	7,786	0.0002	200	8.71	90	1,585	5.8E-07	2.5E-06	--	--
118	Finished Product	7,786	0.0002	200	8.71	90	1,585	5.8E-07	2.5E-06	--	--
Total								***0.2***	***0.8***	***8.2E-05***	***3.6E-04***

1. Tank capacities and throughputs per Procter and Gamble design data sheets.
2. Finished product tanks assumed to contain a fractional amount of volatile materials.
3. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.
4. HAP Emissions from perfumes assumed to be 0.5% of VOC emissions. Based upon assessment of raw material composition, HAP speciation determined to be 99% glycol ether and 1% acetophenone.

Table N-7. Soap Making Business A and B - Finished Product Packing and Capping Emissions

EU ID	Description	Temperature (°F)	Vapor Pressure[1] (psia)	Mol. Wt.[1] (lb/lb-mol)	Throughput (gal/yr)	Kn[2]	VOC Potential to Emit[3]	
							(lb/hr)	(tpy)
119	Soap Making Business A and B Packing and Capping Line	90	0.0011	200	139,798,617	0.20	2.5E-04	1.1E-03

1. Conservative estimate of product formulation.
2. K_N calculated assuming infinitely many turnovers, N, per year (i.e., large material throughput and small bottle volume).
3. Emissions calculated per AP-42, Chapter 7.1 (*Organic Liquid Storage Tanks*), Equation 1-29.

Table N-8. Liquid Soap A and B - Rotoclone Particulate Emissions

Process Unit Numbers	Rotoclone Number[1]	Rotoclone Name	$PM/PM_{10}/PM_{2.5}$ Estimated Control Efficiency	Emission Factor[1]	Emission Factor Units	Annual Throughput[2]	Annual Throughput Units	$PM/PM_{10}/PM_{2.5}$ Emissions (tons/yr)
120S-123S	3C	Premix Rotoclone 1	96%	2.00E-02	gr/dscf	1,182,600,000	scf/yr	1.7
124S-127S	4C	Liquid Soap B Rotoclone 1	96%	2.00E-02	gr/dscf	2,496,600,000	scf/yr	3.6
128S-131S	5C	Liquid Soap B Rotoclone 2	96%	2.00E-02	gr/dscf	2,496,600,000	scf/yr	3.6
132S-135S	6C	Liquid Soap B Rotoclone 3	96%	2.00E-02	gr/dscf	1,655,640,000	scf/yr	2.4
136S-139S	7C	Scale and Lab Rotoclone 1[4]	96%	2.00E-02	gr/dscf	525,600,000	scf/yr	0.8
140S-144S	8C	Scale and Lab Rotoclone 2[4]	96%	2.00E-02	gr/dscf	525,600,000	scf/yr	0.8
146S-148S	9C	Liquid Soap A Rotoclone 1	98%	2.00E-02	gr/dscf	919,800,000	scf/yr	1.3
150S-152S	10C	Liquid Soap A Rotoclone 2	98%	2.00E-02	gr/dscf	919,800,000	scf/yr	1.3
154S-156S	11C	Liquid Soap A Rotoclone 3	98%	2.00E-02	gr/dscf	919,800,000	scf/yr	1.3
158S-160S	12C	Liquid Soap A Rotoclone 4	98%	2.00E-02	gr/dscf	1,603,080,000	scf/yr	2.3
161S-162S	13C	Liquid Soap B Rotoclone 4	96%	2.00E-02	gr/dscf	735,840,000	scf/yr	1.1
							Total	***20.0***

1. Control includes dust pick up points associated with identified process units. Control only operates when powders are being added. Other volatile losses from making vent through fugitive and general process vent points are included in overall VOC emissions.

2. Conservative assumptions based on P&G process knowledge for Liquid Soap A and B. Conservatively assumes $PM=PM_{10}=PM_{2.5}$

3. Annual throughputs based on maximum anticipated production volumes.

Table N-9. Liquid Soap A and B - Rotoclone and Fugitive VOC Emissions

Process Unit Numbers	Rotoclone Number[1]	Rotoclone Name	VOC Control Efficiency	Emission Factor[2]	Emission Factor Units	Annual Throughput[3] (lb/yr)	VOC Emissions (ton/yr)
120S-123S	3C	Premix Rotoclone 1	0%	1.61E-02	lb/1000 lbs	106,407,288	0.86
124S-127S	4C	Liquid Soap B Rotoclone 1	0%	1.61E-02	lb/1000 lbs	197,299,946	1.59
128S-131S	5C	Liquid Soap B Rotoclone 2	0%	1.61E-02	lb/1000 lbs	238,595,283	1.93
132S-135S	6C	Liquid Soap B Rotoclone 3	0%	1.61E-02	lb/1000 lbs	197,299,946	1.59
136S-139S	7C	Scale and Lab Rotoclone 1[4]	0%	--	--	--	--
140S-144S	8C	Scale and Lab Rotoclone 2[4]	0%	--	--	--	--
146S-148S, 150S-152S, 154S-156S, 158S-160S	9C, 10C, 11C, 12C	Liquid Soap A Perfume Loss	0%	2.60E-02	lb/1000 lbs	179,183,246	2.33
146S-148S	9C	Liquid Soap A Rotoclone 1	0%	1.00E+00	lb/1000 lbs	50,171,309	25.09
150S-152S	10C	Liquid Soap A Rotoclone 2	0%	1.00E+00	lb/1000 lbs		
154S-156S	11C	Liquid Soap A Rotoclone 3	0%	1.00E+00	lb/1000 lbs		
158S-160S	12C	Liquid Soap A Rotoclone 4	0%	1.00E+00	lb/1000 lbs		
161S-162S	13C	Liquid Soap B Rotoclone 4	0%	1.61E-02	lb/1000 lbs	5,383,423	0.04
						TOTAL	**33.43**

1. Volatile losses from making vent through fugitive and general process vent points are included in overall VOC emissions.

2. Emission factor based on P&G process knowledge.

3. Throughput listed for Liquid Soap A non-perfume VOC is that which contains the volatile processing aid.

4. Scale and Lab Rotoclone is not used for measuring volatile materials.

Table N-10. Liquid Soap A - Regenerative Thermal Oxidizer Emissions

Parameter	Value	Unit
Control Device Number	14C	
Emission Unit Numbers	145S, 149S, 153S, 157S	
Throughput of Liquid Soap A (Total)[1]	71,673	tpy
Total Heat Input	2.4	MMBtu/hr
Potential Throughput	2.35E-03	MMCF/hr

Pollutant	Emission Factor	Units	Source	Uncontrolled Emissions (lb/hr)	Control Efficiency (%)	Controlled Emissions (lb/hr)	PTE (tpy)
$PM_{10}/PM_{2.5}$	7.6	lb/MMCF	AP-42	0.01	0	1.5E-02	6.5E-02
SO_2	6.00E-01	lb/MMCF	AP-42	1.41E-03	0	1.4E-03	6.2E-03
NO_X	1.00E-01	lb/MMBtu	Vendor	2.40E-01	0	2.4E-01	1.1
VOC - controlled[1,2]	5.04	lb/ton	Mass Balance	213.5	97	6.4	5.4
VOC - uncontrolled[3]	5.04	lb/ton	Mass Balance	213.5	0	213.5	2.6
CO	1.33	lb/hr	Vendor	1.33	0	1.3	5.8
Lead	5.00E-04	lb/MMCF	AP-42	1.18E-06	0	1.2E-06	5.2E-06
Ammonia	3.2	lb/MMCF	FIRE	0.01	0	7.5E-03	3.30E-02

1. Based upon maximum throughput of Liquid Soap A containing a volatile processing aid.
2. RTO will operate only when a Hot Mix Tank for Liquid Soap A with volatile processing aid is being used.
3. Assumes 24 hours (12-month rolling) of uncontrolled emissions at maximum short-term system capacity.

Table N-11. Dry Consumer Product A - Outdoor Tank Emissions

EU ID	Throughput[1] (gal/yr)	Vapor Pressure (psia)	Molecular Weight (lb/lb-mol)	Bulk Liquid Temperature (°F)	Liquid Density (lb/gal)	Tank Capacity[1] (gal)	VOC Potential to Emit[2]		HAP Potential to Emit[3]	
							(lb/hr)	(tpy)	(lb/hr)	(tpy)
163	7,751,090	7.35E-09	282	160	7.00	42,879	1.2E-08	5.1E-08	--	--
164	13,608,386	7.35E-09	282	160	7.97	37,641	1.6E-08	7.1E-08	--	--
165	378,689	0.50	200	77	8.81	6,809	7.0E-02	3.1E-01	3.5E-04	1.5E-03
						Total	***7.0E-02***	***3.1E-01***	***3.5E-04***	***1.5E-03***

1. Tank capacities and throughputs per Procter and Gamble design data sheets. Throughputs are time averaged throughputs based on planned production lines for other similar Procter and Gamble facilities and business units, scaled according to ratio of planned production lines for the facility.

2. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.

3. HAP emissions from perfumes assumed to be 0.5% of VOC emissions. Based on knowledge of raw materials, HAPs are 99% glycol ether and 1% acetophenone.

Table N-12. Dry Consumer Product A - Indoor Tank Emissions

EU ID	Throughput[1] (gal/yr)	Vapor Pressure (psia)	Molecular Weight (lb/lb-mol)	Bulk Liquid Temperature (°F)	Liquid Density (lb/gal)	Tank Capacity[1] (gal)	VOC Potential to Emit[2]		HAP Potential to Emit[3]	
							(lb/hr)	(tpy)	(lb/hr)	(tpy)
166	78,893	0.50	200	77	8.81	396	5.4E-03	2.4E-02	2.7E-05	1.2E-04
167	78,893	0.50	200	77	8.81	396	5.4E-03	2.4E-02	2.7E-05	1.2E-04
168	78,893	0.50	200	77	8.81	396	5.4E-03	2.4E-02	2.7E-05	1.2E-04
169	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
170	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
171	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
172	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
173	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
174	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
175	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
176	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
177	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
178	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
179	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
180	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
181	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
182	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
183	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
184	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
185	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
186	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
187	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
188	39,447	0.50	200	77	8.81	181	3.3E-03	1.4E-02	1.6E-05	7.2E-05
						Total	***8.1E-02***	***3.6E-01***	***4.1E-04***	***1.8E-03***

1. Tank capacities and throughputs per Procter and Gamble design data sheets. Throughputs are time averaged throughputs based on planned production lines for other similar Procter and Gamble facilities and business units, scaled according to ratio of planned production lines for the facility.
2. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.
3. HAP emissions from perfumes assumed to be 0.5% of VOC emissions. Based on knowledge of raw materials, HAPs are 99% glycol ether and 1% acetophenone.

Table N-13. Dry Consumer Products A - Particulate Control Device Emissions

EU ID	Control Device ID	Description	Control Type	Hours/Year Utilized	Fabric Filter Efficiency[1] (gr/scf)	Air Flowrate[2] (scfm)	$PM/PM_{10}/PM_{2.5}$ Potential to Emit (lb/hr)	$PM/PM_{10}/PM_{2.5}$ Potential to Emit (tpy)
189	15C	Dry Consumer Products A - Clay Silo - Loading	Bin Vent Filter	8,760	0.02	400	6.9E-02	3.0E-01
190	16C	Dry Consumer Products A - Clay FRL Exhaust	Baghouse	8,760	0.02	275	4.7E-02	2.1E-01
191	17C	Dry Consumer Products A - Feeder/Mixer Vent	Baghouse	8,760	0.02	260	4.5E-02	2.0E-01
192	18C	Dry Consumer Products A - Line 11	Baghouse	8,760	0.010	18,000	1.54E+00	6.8
193	19C	Dry Consumer Products A - Line 13	Baghouse	8,760	0.010	18,000	1.54E+00	6.8
194	20C	CVC	Baghouse	8,760	0.010	6,500	5.6E-01	2.4
						Total	**3.8**	**16.7**

1. Conservative assumptions based on P&G process knowledge for Dry Consumer Products A
2. Per P&G process knowledge for Dry Consumer Products A

Table N-14. Dry Consumer Products A - Additive Emissions

EU ID	Description	Substrate Coated Area[1] (ft^2)	Temperature (°F)	Vapor Pressure (psia)	Molecular Weight (lb/lb-mol)	Mass Transfer Coefficient[2] (ft/hr)	Application Frequency (%)	Number of Lines	Coating Mix (%)	VOC Content (%)	PMC Content (%)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
195	Dry Consumer Products A - Additive	1,050	50	7.35E-09	282	39.18	100	2	95	100	n/a	3.1E-05	1.3E-04
	Dry Consumer Products A - Perfume	1,050	50	1.50E-02	200	43.93	100	2	5	100	25	2.0	8.7
											Total	***2.0***	***8.7***

1. The production lines are designed based on the following Procter and Gamble design specifications.

Substrate line specifications

Substrate length: 2,100 inches

2. Mass Transfer Coefficient (MTC) calculated using water (H_2O) as reference compound.

H_2O MTC: 98.03 ft/hr

H_2O Mol. Wt.: 18 lb/lb-mol

Table N-15. Utilities - Overall Utility Inventory

Equipment Type	Quantity	Design Size	
		Value	Units
Boilers	2	50,267	pph steam
	1	25,134	pph steam
	1	8,918	pph steam
Cooling Towers	1	331	Mgal/hr
	1	792	Mgal/hr
	1	212	Mgal/hr
Fire Pump Engine	2	311	hp
Backup/Standby Power Generator	3	350	kW
Engine ULSD Tanks	5	< 500	gallon
Vehicle Refueling ULSD Tank	1	5,000	gallon
Warehouse Heaters	6	3.05	MMBtu/hr

Equipment Type	Quantity	Design Size		Weighted Heat of Vaporization[1] (Btu/lb)	Boiler Efficiency (HHV)	Calculated Size	
		Value	Units			Value	Units
Boilers	2	50,267	pph steam	1,048.4	85%	62	MMBtu/hr
	1	25,134	pph steam	1,048.4	85%	31	MMBtu/hr
	1	8,918	pph steam	1,048.4	85%	11	MMBtu/hr

1. Steam parameters:

H_2O heat of vaporization (non-condensate return):	1,178	Btu/lb
H_2O heat of vaporization (condensate return):	1,016	Btu/lb
Condensate return:	80%	

Table N-16. Utilities - Boiler Nos. 1 and 2 - Criteria Pollutants

Parameter	Value	Unit
New Boiler Heat Input:	62	MMBtu/hr
Number of New Boilers:	2	
Annual Gas Usage:	543	MMscf/yr
Equivalent Gas Hours:	8,760	Hours at 100% Load
Natural Gas Heating Value (HHV):	1,000	Btu/scf

Pollutant	Natural Gas Emission Factor	Units	Reference	Emissions Per Boiler		Emissions for Boilers 1 and 2 (tpy)
				Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
NO_X	60	ppm	2	4.5	19.8	39.5
CO	50	ppm	2	2.3	10.0	20.1
PM	3.80E-03	lb/MMBtu	2	2.4E-01	1.0	2.1
PM_{10}	7.50E-03	lb/MMBtu	2	4.7E-01	2.0	4.1
$PM_{2.5}$	7.50E-03	lb/MMBtu	2	4.7E-01	2.0	4.1
SO_2	6.00E-04	lb/MMBtu	2	3.7E-02	1.6E-01	3.3E-01
VOC	3.60E-03	lb/MMBtu	2	2.2E-01	1.0	2.0
H_2SO_4	6.50E-03	lb/MMscf	3	4.0E-04	1.8E-03	3.5E-03

1. Natural gas factors based on manufacturer's ppm specifications for units with LNB and converted to lb/MMBtu using an F factor of 8,710 dscf/MMBtu for natural gas.

2. Guarantees from boiler vendor.

3. Natural gas factor calculated assuming 1% of sulfur becomes H_2SO_4.

Table N-17. Utilities - Boiler Nos. 1 and 2 - HAP

Parameter	Value	Unit
New Boiler Heat Input:	62	MMBtu/hr
Number of New Boilers:	2	
Hours of Operation on Natural Gas:	8,760	hr/yr
Natural Gas Heating Value (HHV):	1,020	Btu/scf

Pollutant	Natural Gas Emission Factor[1]	Units	Emissions Per Boiler		Emissions for Boilers 1 and 2	
			lb/hr	tpy	lb/hr	tpy
2-Methylnaphthalene	2.4E-05	lb/MMscf	1.5E-06	6.4E-06	2.9E-06	1.3E-05
3-Methylchloranthrene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
7,12-Dimethylbenz(a)anthracene	1.6E-05	lb/MMscf	9.7E-07	4.3E-06	1.9E-06	8.5E-06
Acenaphthene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Acenaphthylene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Anthracene	2.4E-06	lb/MMscf	1.5E-07	6.4E-07	2.9E-07	1.3E-06
Benz(a)anthracene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Benzene	2.1E-03	lb/MMscf	1.3E-04	5.6E-04	2.6E-04	1.1E-03
Benzo(a)pyrene	1.2E-06	lb/MMscf	7.3E-08	3.2E-07	1.5E-07	6.4E-07
Benzo(b)fluoranthene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Benzo(g,h,i)perylene	1.2E-06	lb/MMscf	7.3E-08	3.2E-07	1.5E-07	6.4E-07
Benzo(k)fluoranthene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Chrysene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Dibenzo(a,h)anthracene	1.2E-06	lb/MMscf	7.3E-08	3.2E-07	1.5E-07	6.4E-07
Dichlorobenzene	1.2E-03	lb/MMscf	7.3E-05	3.2E-04	1.5E-04	6.4E-04
Fluoranthene	3.0E-06	lb/MMscf	1.8E-07	8.0E-07	3.6E-07	1.6E-06
Fluorene	2.8E-06	lb/MMscf	1.7E-07	7.5E-07	3.4E-07	1.5E-06
Formaldehyde	7.5E-02	lb/MMscf	4.6E-03	2.0E-02	9.1E-03	4.0E-02
Hexane	1.8E+00	lb/MMscf	1.1E-01	4.8E-01	2.2E-01	9.6E-01
Indeno(1,2,3-cd)pyrene	1.8E-06	lb/MMscf	1.1E-07	4.8E-07	2.2E-07	9.6E-07
Naphthalene	6.1E-04	lb/MMscf	3.7E-05	1.6E-04	7.4E-05	3.2E-04
Phenanathrene	1.7E-05	lb/MMscf	1.0E-06	4.5E-06	2.1E-06	9.1E-06
Pyrene	5.0E-06	lb/MMscf	3.0E-07	1.3E-06	6.1E-07	2.7E-06
Toulene	3.4E-03	lb/MMscf	2.1E-04	9.1E-04	4.1E-04	1.8E-03
Arsenic	2.0E-04	lb/MMscf	1.2E-05	5.3E-05	2.4E-05	1.1E-04
Beryllium	1.2E-05	lb/MMscf	7.3E-07	3.2E-06	1.5E-06	6.4E-06
Cadmium	1.1E-03	lb/MMscf	6.7E-05	2.9E-04	1.3E-04	5.9E-04
Chromium	1.4E-03	lb/MMscf	8.5E-05	3.7E-04	1.7E-04	7.5E-04
Cobalt	8.4E-05	lb/MMscf	5.1E-06	2.2E-05	1.0E-05	4.5E-05
Lead	5.0E-04	lb/MMscf	3.0E-05	1.3E-04	6.1E-05	2.7E-04
Manganese	3.8E-04	lb/MMscf	2.3E-05	1.0E-04	4.6E-05	2.0E-04
Mercury	2.6E-04	lb/MMscf	1.6E-05	6.9E-05	3.2E-05	1.4E-04
Nickel	2.1E-03	lb/MMscf	1.3E-04	5.6E-04	2.6E-04	1.1E-03
Selenium	2.40E-05	lb/MMscf	1.5E-06	6.4E-06	2.9E-06	1.3E-05
Total HAP					**2.3E-01**	**1.0E+00**

1. Natural gas emission factors from AP-42, Tables 1.4-3 and 1.4-4

Table N-18. Utilities - Boiler Nos. 3 - Parameters

Parameter	Value	Unit
New Boiler Heat Input:	31	MMBtu/hr
Number of New Boilers:	1	
Annual Gas Usage:	272	MMscf/yr
Equivalent Gas Hours:	8,760	Hours at 100% Load
Natural Gas Heating Value (HHV):	1,000	Btu/scf

Pollutant	Natural Gas Emission Factor	Units	Reference	Natural Gas Hourly Emissions (lb/hr)	Natural Gas Annual Emissions (tpy)	Emissions for Boiler 3 (tpy)
NO_X	60	ppm	2	2.3	9.9	9.9
CO	50	ppm	2	1.1	5.0	5.0
PM	3.80E-03	lb/MMBtu	2	1.2E-01	0.5	0.5
PM_{10}	7.50E-03	lb/MMBtu	2	2.3E-01	1.0	1.0
$PM_{2.5}$	7.50E-03	lb/MMBtu	2	2.3E-01	1.0	1.0
SO_2	6.00E-04	lb/MMBtu	2	1.9E-02	8.1E-02	8.1E-02
VOC	3.60E-03	lb/MMBtu	2	1.1E-01	4.9E-01	4.9E-01
H_2SO_4	6.50E-03	lb/MMscf	3	2.0E-04	8.8E-04	8.8E-04

1. Natural gas emission factors based on manufacturer's ppm specifications for units with LNB and converted to lb/MMBtu using an F factor of 8,710 dscf/MMBtu for natural gas.

2. Guarantees from boiler vendor.

3. Natural gas factor calculated assuming 1% of sulfur becomes H_2SO_4.

Table N-19. Utilities - Boiler Nos. 3 - Parameters

Parameter	Value	Unit
New Boiler Heat Input:	31	MMBtu/hr
Number of New Boilers:	1	
Hours of Operation on Natural Gas:	8,760	hr/yr
Natural Gas Heating Value (HHV):	1,020	Btu/scf

Pollutant	Natural Gas Emission Factor[1]	Units	Emissions	
			lb/hr	tpy
2-Methylnaphthalene	2.4E-05	lb/MMscf	7.3E-07	3.2E-06
3-Methylchloranthrene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
7,12-Dimethylbenz(a)anthracene	1.6E-05	lb/MMscf	4.9E-07	2.1E-06
Acenaphthene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Acenaphthylene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Anthracene	2.4E-06	lb/MMscf	7.3E-08	3.2E-07
Benz(a)anthracene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Benzene	2.1E-03	lb/MMscf	6.4E-05	2.8E-04
Benzo(a)pyrene	1.2E-06	lb/MMscf	3.6E-08	1.6E-07
Benzo(b)fluoranthene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Benzo(g,h,i)perylene	1.2E-06	lb/MMscf	3.6E-08	1.6E-07
Benzo(k)fluoranthene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Chrysene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Dibenzo(a,h)anthracene	1.2E-06	lb/MMscf	3.6E-08	1.6E-07
Dichlorobenzene	1.2E-03	lb/MMscf	3.6E-05	1.6E-04
Fluoranthene	3.0E-06	lb/MMscf	9.1E-08	4.0E-07
Fluorene	2.8E-06	lb/MMscf	8.5E-08	3.7E-07
Formaldehyde	7.5E-02	lb/MMscf	2.3E-03	1.0E-02
Hexane	1.8E+00	lb/MMscf	5.5E-02	2.4E-01
Indeno(1,2,3-cd)pyrene	1.8E-06	lb/MMscf	5.5E-08	2.4E-07
Naphthalene	6.1E-04	lb/MMscf	1.9E-05	8.1E-05
Phenanathrene	1.7E-05	lb/MMscf	5.2E-07	2.3E-06
Pyrene	5.0E-06	lb/MMscf	1.5E-07	6.7E-07
Toulene	3.4E-03	lb/MMscf	1.0E-04	4.5E-04
Arsenic	2.0E-04	lb/MMscf	6.1E-06	2.7E-05
Beryllium	1.2E-05	lb/MMscf	3.6E-07	1.6E-06
Cadmium	1.1E-03	lb/MMscf	3.3E-05	1.5E-04
Chromium	1.4E-03	lb/MMscf	4.3E-05	1.9E-04
Cobalt	8.4E-05	lb/MMscf	2.6E-06	1.1E-05
Lead	5.0E-04	lb/MMscf	1.5E-05	6.7E-05
Manganese	3.8E-04	lb/MMscf	1.2E-05	5.1E-05
Mercury	2.6E-04	lb/MMscf	7.9E-06	3.5E-05
Nickel	2.1E-03	lb/MMscf	6.4E-05	2.8E-04
Selenium	2.40E-05	lb/MMscf	7.3E-07	3.2E-06
Total HAP			**5.7E-02**	**2.5E-01**

1. Natural gas emission factors from AP-42, Tables 1.4-3 and 1.4-4

Table N-20. Utilities - Cooling Towers - Emissions

Parameter	Unit 1	Unit 2	Unit 3	*Emissions Total*
Location[1]	Surfactants	Central Utilities	Liquid Soap A and B	--
Flow Rate (gpm)[1]	5,517	13,200	3,533	--
Flow Rate (Mgal/hr)	331	792	212	--
Flow Rate (Mgal/yr)	2,899,560	6,937,920	1,857,120	--
Operating Hours (hr/yr)	8,760	8,760	8,760	--
Density of Water (lb/gal)	8.35	8.35	8.35	--
Total Dissolved Solids, TDS (ppm)	1,600	1,600	1,600	--
Drift (%)[2]	5.00E-03	5.00E-03	5.00E-03	--
Drift (gpm)	0.28	0.66	0.18	--
$PM/PM_{10}/PM_{2.5}$ (lb/gal)[3]	6.7E-07	6.7E-07	6.7E-07	--
$PM/PM_{10}/PM_{2.5}$ (lb/hr)	2.2E-01	5.3E-01	1.4E-01	***0.9***
$PM/PM_{10}/PM_{2.5}$ (tpy)	1.0	2.3	0.6	***3.9***

1. Client specification.

2. Drift Percentage for Induced Draft Cooler specified in email from Brian Mensinger (Trinity Consultants) to Allison Cole (Trinity Consultants) on July 22, 2015.

3. PM_{10} are conservatively overestimated by (TDS, ppm) x (Total Drift Rate, lb/gal) / 10^{6}, based on AP-42 Section 13.4-3.

Table N-21. Utilities - Engines - Inventory Summary

Engine Model	Type	Number	Size	Unit
Caterpillar C15	Backup/Standby Power Generator	3	350	kW
Clarke JW6H-UFADF0	Fire Pump	2	311	hp

Pollutant	Potential Emissions per Engine, Caterpillar C15 (tpy)	Potential Emissions per Engine, Clarke (tpy)	Emissions (tpy)
CO	1.4E-01	1.4E-01	6.9E-01
NO_X	8.7E-01	4.5E-01	3.5
VOC	1.1E-02	1.7E-02	6.7E-02
SO_2	3.6E-04	2.4E-04	1.6E-03
PM	1.2E-02	1.7E-02	7.0E-02
PM_{10}	1.2E-02	1.7E-02	6.9E-02
$PM_{2.5}$	1.2E-02	1.7E-02	6.9E-02

Pollutant	Potential Emissions per Engine, Caterpillar C15 (tpy)	Potential Emissions per Engine, Clarke (tpy)	Emissions (tpy)
Benzene	7.7E-04	5.1E-04	3.3E-03
Toluene	3.4E-04	2.2E-04	1.5E-03
Xylenes	2.4E-04	1.6E-04	1.0E-03
Propylene	2.1E-03	1.4E-03	9.2E-03
Formaldehyde	9.8E-04	6.4E-04	4.2E-03
Acetaldehyde	6.4E-04	4.2E-04	2.7E-03
Acrolein	7.7E-05	5.0E-05	3.3E-04
Polycyclic Aromatic Hydrocarbons (PAH)	1.4E-04	9.1E-05	6.0E-04
Max HAP	***2.1E-03***	***1.4E-03***	***9.2E-03***
Total HAPs	***5.3E-03***	***3.5E-03***	***2.3E-02***

Table N-22. Utilities - Engines - Caterpillar 350 kW

Source Designation	Engine	Generator
Date Manufactured	TBD	TBD
Manufacturer[1]	Caterpillar	Caterpillar
Model No.[2]	C15	C15
Stroke Cycle[2]	4-Stroke	--
Fuel Used[2]	Diesel	--
Fuel Sulfur Content (%)[3]	0.0015	--
Rated Capacity (eKW)[2]	350.00	--
Calculated Horsepower (bhp)[4]	473.69	--
Generating Capacity (kW)[1]	--	350.00
Maximum Fuel Consumption at 100% Load (gal/hr)[2]	28.60	--
Heat Input (MMBtu/hr)[5]	3.32	--

Operational Detail	Value
Potential Annual Hours of Operation (hr/yr):	500.00
Potential Fuel Consumption (Mgal/yr):	14.30

Pollutant	Emission Factors	Units	Notes
CO	5.30E-01	g/hp-hr	2
NO_X	3.34	g/hp-hr	2
HC	4.18E-02	g/hp-hr	2, 6
SO_2	3.08E-06	lb/hp-hr	7
PM	4.60E-02	g/hp-hr	2, 8
PM_{10}	4.60E-02	g/hp-hr	2, 8
$PM_{2.5}$	4.60E-02	g/hp-hr	2, 8

Table N-24. Utilities - Engines - Caterpillar 350 kW

Pollutant	Potential Emissions (lb/hr)[11]	Potential Emissions (tpy)
CO	5.5E-01	1.4E-01
NO_x	3.5E+00	8.7E-01
VOC	4.4E-02	1.1E-02
SO_2	1.5E-03	3.6E-04
PM	4.8E-02	1.2E-02
PM_{10}	4.6E-02	1.2E-02
$PM_{2.5}$	4.6E-02	1.2E-02

Pollutant	Emission Factor (lb/MMBtu)[10]	Potential Emissions (lb/hr)[9]	Potential Emissions (tpy)
Benzene	9.33E-04	3.1E-03	7.7E-04
Toluene	4.09E-04	1.4E-03	3.4E-04
Xylenes	2.85E-04	9.5E-04	2.4E-04
Propylene	2.58E-03	8.6E-03	2.1E-03
Formaldehyde	1.18E-03	3.9E-03	9.8E-04
Acetaldehyde	7.67E-04	2.5E-03	6.4E-04
Acrolein	9.25E-05	3.1E-04	7.7E-05
Polycyclic Aromatic Hydrocarbons (PAH)	1.68E-04	5.6E-04	1.4E-04
Max HAP		***8.6E-03***	***2.1E-03***
Total HAPs		***2.1E-02***	***5.3E-03***

1. Client specification.
2. Values come from the unit's spec sheet "Caterpillar C15 ATAAC Diesel Engine." Found at http://s7d2.scene7.com/is/content/caterpillar/C10059394.
3. Per 40 CFR 80 Subpart I, maximum sulfur content of ULSD is 15 ppm (i.e. 0.0015%).
4. Diesel generator horsepower (BHP) back calculated from electric generator rated output (ekW). An inefficiency of 1% was included to account for losses from shaft work to electricity.
5. To convert from bhp to MMBtu/hr, an average brake-specific fuel consumption of 7,000 Btu/hp-hr was used per AP-42 P-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
6. All hydrocarbon (HC) emissions are conservatively assumed to be VOC.
7. SO_2 emission factor from AP-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
8. All particulates are assumed to be <1 micron in size, where PM, PM_{10}, and $PM_{2.5}$ are assumed to be equivalent, consistent with AP-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
9. Emission Rate (lb/hr) = Rated Capacity (MMBtu/hr or bhp) × Emission Factor (lb/MMBtu or lb/bhp-hr).
10. Emission factors from AP-42 Section 3.3, Table 3.3-2 "Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines."

Table N-23. Utilities - Engines - Clarke

Source Designation	Engine
Date Manufactured	TBD
Manufacturer[1]	Clarke
Model No.[2]	JW6H-UFADF0
Stroke Cycle[2]	4-Stroke
Fuel Used[1]	Diesel
Fuel Sulfur Content (%)[3]	0.0015
Rated Horsepower (bhp)[2]	311.00
Maximum Fuel Consumption at 100% Load (gal/hr)[4]	16.13
Heat Input (MMBtu/hr)[5]	2.18

Operational Detail	Value
Potential Annual Hours of Operation (hr/yr):	500.00
Potential Fuel Consumption (Mgal/yr):	8.06

Pollutant	Emission Factors	Units	Notes
CO	8.00E-01	g/hp-hr	6
NO_X	2.61	g/hp-hr	6
HC	1.00E-01	g/hp-hr	6, 7
SO_2	3.08E-06	lb/hp-hr	8
PM	1.00E-01	g/hp-hr	6, 9
PM_{10}	1.00E-01	g/hp-hr	6, 9
$PM_{2.5}$	1.00E-01	g/hp-hr	6, 9

Table N-26. Utilities - Engines - Clarke

Pollutant	Potential Emissions (lb/hr)[10]	Potential Emissions (tpy)
CO	5.5E-01	1.4E-01
NO_X	1.8	4.5E-01
VOC	6.9E-02	1.7E-02
SO_2	9.6E-04	2.4E-04
PM	6.9E-02	1.7E-02
PM_{10}	6.9E-02	1.7E-02
$PM_{2.5}$	6.9E-02	1.7E-02

Pollutant	Emission Factor (lb/MMBtu)[11]	Potential Emissions (lb/hr)[10]	Potential Emissions (tpy)
Benzene	9.33E-04	2.0E-03	5.1E-04
Toluene	4.09E-04	8.9E-04	2.2E-04
Xylenes	2.85E-04	6.2E-04	1.6E-04
Propylene	2.58E-03	5.6E-03	1.4E-03
Formaldehyde	1.18E-03	2.6E-03	6.4E-04
Acetaldehyde	7.67E-04	1.7E-03	4.2E-04
Acrolein	9.25E-05	2.0E-04	5.0E-05
Polycyclic Aromatic Hydrocarbons (PAH)	1.68E-04	3.7E-04	9.1E-05
Max HAP		***5.6E-03***	***1.4E-03***
Total HAPs		***1.4E-02***	***3.5E-03***

1. Client specification.
2. Values come from the unit's spec sheet "Clarke JW6H-UFADJ0 Fire Engine Specifications." Found at http://www.clarkefire.com/Libraries/PDF/Spec_Sheet_JW6H-UFAA-AD_C133422.sflb.ashx
3. Per 40 CFR 80 Subpart I, maximum sulfur content of ULSD is 15 ppm (i.e. 0.0015%).
4. Maximum fuel consumption calculated as the heat input for the engine (MMBtu) divided by the energy density of diesel fuel (0.135 MMBtu/gal).
5. To convert from bhp to MMBtu/hr, an average brake-specific fuel consumption of 7,000 Btu/hp-hr was used per AP-42 P-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
6. NO_X, HC, CO, and PM emission factors from John Deere "Rating Specific Emissions Data." Found at http://www.clarkefire.com/Libraries/PDF/Emissions_JW6H-UFADF0_6090HFC47A_1760rpm_2009.sflb.ashx
7. To conservatively over-estimate emissions, all hydrocarbon (HC) emissions are assumed to be VOC.
8. SO_2 emission factor from AP-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
9. All particulates are assumed to be <1 micron in size, where PM, PM_{10}, and $PM_{2.5}$ are assumed to be equivalent, consistent with AP-42 Section 3.3, Table 3.3-1 "Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines," Supplement B, October 1996.
10. Emission Rate (lb/hr) = Rated Capacity (MMBtu/hr or bhp) × Emission Factor (lb/MMBtu or lb/bhp-hr).
11. Emission factors from AP-42 Section 3.3, Table 3.3-2 "Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines."

Table N-24. Utilities - Diesel Tank - Emissions

EU ID	Description	Throughput (gal/yr)	Vapor Pressure[1] (psia)	Molecular Weight[1] (lb/lb-mol)	Bulk Liquid Temperature (°F)	Liquid Density[1] (lb/gal)	Total Capacity (gal)	VOC Emissions[2] (lb/hr)	VOC Emissions[2] (tpy)
208	Diesel (Distillate Fuel Oil No. 2)	70,000	2.20E-02	130	Ambient	7.1	5,162	5.2E-04	2.3E-03
							Total	5.2E-04	2.3E-03

1. Chemical properties per EPA TANKS 4.09d database for distillate fuel oil no. 2.

2. Emissions calculated per AP-42, Section 7.1 (*Organic Liquid Storage Tanks*) and Trinity calculations spreadsheets. Specifically, equations contained in Section 7.1.3.1 (*Total Losses from Fixed Roof Tanks*) are utilized.

Table N-25. Utilities - Heaters

Parameter	Value	Unit
Heater Size:	3.05	MMBtu/hr
Operating Hours:	8,760	hr/yr
Natural Gas Heating Value (HHV):	1,020	Btu/scf
Annual Gas Usage:	26.18	MMscf/yr
Number of Heaters:	6	

Pollutant	Natural Gas Emission Factor	Units	Reference	Hourly Emissions per Heater (lb/hr)	Annual Emissions per Heater (tpy)	Annual Emissions for All Heaters (tpy)
NO_X	50.00	lb/MMscf	1	1.49E-01	6.5E-01	3.9
CO	84.00	lb/MMscf	1	2.51E-01	1.1	6.6
PM	7.60	lb/MMscf	1	2.27E-02	9.9E-02	6.0E-01
PM_{10}	7.60	lb/MMscf	1	2.27E-02	9.9E-02	6.0E-01
$PM_{2.5}$	7.60	lb/MMscf	1	2.27E-02	9.9E-02	6.0E-01
SO_2	0.60	lb/MMscf	1	1.79E-03	7.9E-03	4.7E-02
VOC	5.50	lb/MMscf	1	1.64E-02	7.2E-02	4.3E-01
H_2SO_4	6.50E-03	lb/MMscf	2	1.94E-05	8.5E-05	5.1E-04

1. Natural gas emission factors from AP-42 Section 1.4. PM assumed to equal PM_{10}.

2. Natural gas factor calculated assuming 1% of sulfur becomes H_2SO_4.

Table N-26. Utilities - Heaters

Parameter	Value	Unit
Heater Size:	3.05	MMBtu/hr
Number of Heaters:	6	
Hours of Operation:	8,760	hr/yr
Natural Gas Heating Value (HHV):	1,020	Btu/scf

Pollutant	Natural Gas Emission Factor[1]	Units	Emissions per Heater		Emissions for All Heaters	
			lb/hr	tpy	lb/hr	tpy
2-Methylnaphthalene	2.40E-05	lb/MMscf	7.2E-08	3.1E-07	4.3E-07	1.9E-06
3-Methylchloranthrene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	lb/MMscf	4.8E-08	2.1E-07	2.9E-07	1.3E-06
Acenaphthene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Acenaphthylene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Anthracene	2.40E-06	lb/MMscf	7.2E-09	3.1E-08	4.3E-08	1.9E-07
Benz(a)anthracene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Benzene	2.10E-03	lb/MMscf	6.3E-06	2.7E-05	3.8E-05	1.6E-04
Benzo(a)pyrene	1.20E-06	lb/MMscf	3.6E-09	1.6E-08	2.2E-08	9.4E-08
Benzo(b)fluoranthene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Benzo(g,h,i)perylene	1.20E-06	lb/MMscf	3.6E-09	1.6E-08	2.2E-08	9.4E-08
Benzo(k)fluoranthene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Chrysene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf	3.6E-09	1.6E-08	2.2E-08	9.4E-08
Dichlorobenzene	1.20E-03	lb/MMscf	3.6E-06	1.6E-05	2.2E-05	9.4E-05
Fluoranthene	3.00E-06	lb/MMscf	9.0E-09	3.9E-08	5.4E-08	2.4E-07
Fluorene	2.80E-06	lb/MMscf	8.4E-09	3.7E-08	5.0E-08	2.2E-07
Formaldehyde	7.50E-02	lb/MMscf	2.2E-04	9.8E-04	1.3E-03	5.9E-03
Hexane	1.80E+00	lb/MMscf	5.4E-03	2.4E-02	3.2E-02	1.4E-01
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf	5.4E-09	2.4E-08	3.2E-08	1.4E-07
Naphthalene	6.10E-04	lb/MMscf	1.8E-06	8.0E-06	1.1E-05	4.8E-05
Phenanathrene	1.70E-05	lb/MMscf	5.1E-08	2.2E-07	3.0E-07	1.3E-06
Pyrene	5.00E-06	lb/MMscf	1.5E-08	6.5E-08	9.0E-08	3.9E-07
Toulene	3.40E-03	lb/MMscf	1.0E-05	4.5E-05	6.1E-05	2.7E-04
Arsenic	2.00E-04	lb/MMscf	6.0E-07	2.6E-06	3.6E-06	1.6E-05
Beryllium	1.20E-05	lb/MMscf	3.6E-08	1.6E-07	2.2E-07	9.4E-07
Cadmium	1.10E-03	lb/MMscf	3.3E-06	1.4E-05	2.0E-05	8.6E-05
Chromium	1.40E-03	lb/MMscf	4.2E-06	1.8E-05	2.5E-05	1.1E-04
Cobalt	8.40E-05	lb/MMscf	2.5E-07	1.1E-06	1.5E-06	6.6E-06
Lead	5.00E-04	lb/MMscf	1.5E-06	6.5E-06	9.0E-06	3.9E-05
Manganese	3.80E-04	lb/MMscf	1.1E-06	5.0E-06	6.8E-06	3.0E-05
Mercury	2.60E-04	lb/MMscf	7.8E-07	3.4E-06	4.7E-06	2.0E-05
Nickel	2.10E-03	lb/MMscf	6.3E-06	2.7E-05	3.8E-05	1.6E-04
Selenium	2.40E-05	lb/MMscf	7.2E-08	3.1E-07	4.3E-07	1.9E-06
Total HAP			**5.6E-03**	**2.5E-02**	**3.4E-02**	**1.5E-01**

1. Natural gas emission factors from AP-42, Tables 1.4-3 and 1.4-4

Table N-27. Cooling Tower/Boiler Feedwater/Wastewater Pretreatment Emissions

Material	Projected Usage (kg /year)	Volatile Content	Potential VOC emissions (tpy)	Potential HAP emissions (tpy)
Cooling Tower Water				
Nalco 3DT 265	49,932	0%	0.0	--
Nalco 7320	112,347	10%	12.4	--
Nalco 7330	57,921	1%	5.1E-01	--
Nalco Stabrex ST70	500	0%	0.0	--
Boiler Feedwater				
Nalco Nexguard 22310	17,100	0%	0.0	--
Nalco 1720	4,100	0%	0.0	--
Nalco 1820	280	40%	1.2E-01	--
Recycle Water Disinfection				
Sodium hypochlorite	4,380	N/A	4.0E-03	4.0E-03
		Total	**13.0**	**4.0E-03**

Table N-28. Utilities - Ink Usage - Emissions

Business Unit	Case Printing Ink		Code Dater Ink			VOC Emissions[2]		HAP Emissions[3]	
	Annual Ink Usage[1] (lb/yr)	VOC Content[2] (%)	Annual Ink Usage[1] (lb/yr)	VOC Content[2] (%)	HAP Content[3] (%)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Soap Making Business A&B	0	35	1,000	16	16	1.8E-02	8.0E-02	1.8E-02	8.0E-02
Dry Consumer Products A	1,100	35	1,000	16	16	6.2E-02	2.7E-01	1.8E-02	8.0E-02
Customization	330	16	--	--	--	6.0E-03	2.6E-02	--	--
Total						0.09	0.38	0.04	0.16

1. Conservative assumption based on Procter and Gamble design data.
2. Conservatively assumed that the ink composition is 100% VOC and that all ink is lost to the atmosphere during usage.
3. Assumes all VOC in the code dater ink is HAP. HAP is a glycol ether.

Table N-29. Finished Product Packing Emissions from Hot Melt Glue

Business Unit	Annual Glue Usage[1] (lb/year)	VOC Emission Factor (lb/lb)	HAP Emission Factor (lb/lb)	VOC Emissions		HAP Emissions[2]	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
Soap Making Business A&B	438,000	6.00E-04	2.00E-05	3.0E-02	1.3E-01	1.0E-03	4.4E-03
Dry Consumer Products A	250,080			1.7E-02	7.5E-02	5.7E-04	2.5E-03
Customization	2,000			1.4E-04	6.0E-04	4.6E-06	2.0E-05
			Total:	4.7E-02	2.1E-01	1.6E-03	6.9E-03

1. Conservative assumption based on Procter and Gamble design data.
2. Conservatively assumed that all of the VOC in the hot melt glue is vinyl acetate.

Table N-30. Utilities - Road

Parameter	Value	Unit
Industrial augmentation factor	1	dimensionless
Number of traffic lanes	2	
Surface material silt content[1]	3.3%	%
Surface dust loading	125	lb/mile

Description	Average Weight[2] (tons)	Miles per Trip[2]	Maximum Trips per Hour	Maximum Trips per Year
Delivery Trucks	40	0.0417	30.8	365
Employee Vehicles	2	0.0417	0.5	365

Pollutant	Uncontrolled TSP Emissions[3] (lb/hr)	(tpy)
Delivery Trucks	5.0E-04	2.2E-03
Employee Vehicles	1.0E-06	4.4E-06
TOTAL	5.0E-04	2.2E-03

1. Conservatively assumed to be equal to average factor for Asphalt Batching, AP-42 Section 13.2.1 *Paved Roads* , Table 13.2.1-3

2. Conservative assumption based on Procter and Gamble design data.

3. From Emission Factor Documentation for AP-42 Section 13.2.1, *Paved Roads,* Equation 2-2, as sited in WV DEP R-13 Permit Form Attachment L for Haul Roads

Table N-31. Plastics Molding Supplier - Emissions Summary

Activity	Annual Emissions (tpy)								
	PM	**PM_{10}**	**$PM_{2.5}$**	**VOC**	**HAPs**	**NO_X**	**CO**	**SO_2**	**H_2SO_4**
Rail Car Unloading	3.50E-01	3.50E-01	3.50E-01	--	--	--	--	--	--
Storage Silos	3.50	3.50	3.50	--	--	--	--	--	--
Plastic Regrind	1.68E-01	1.68E-01	1.68E-01	--	--	--	--	--	--
Fugitive VOC Emissions	--	--	--	9.07	--	--	--	--	--
Space Heaters	5.55E-01	5.55E-01	5.55E-01	4.02E-01	1.30E-01	3.65	6.13	4.38E-02	4.75E-04
Cooling Tower	1.23	1.23	1.23	--	--	--	--	--	--
Back-Up Generator	4.75E-04	9.71E-04	9.71E-04	5.02E-02	1.62E-03	1.04E-01	2.08E-01	2.94E-05	--
Process Total	***5.80***	***5.80***	***5.80***	***9.52***	***1.32E-01***	***3.75***	***6.34***	***4.38E-02***	***4.75E-04***

Table N-32. Plastics Molding Supplier - Railcar Unloading to Silo - Emission Factors

Emission Description	Emission Factors[1] (lb/ton material)
PM	7.00E-02
PM_{10}	7.00E-02
$PM_{2.5}$	7.00E-02

1. Estimated using average dusting factor for all types of pellet storage identified by EPA. Conservatively assumes PM = PM_{10} = $PM_{2.5}$.

Table N-33. Plastics Molding Supplier - Railcar Unloading to Silo - Emissions

Control Device Number	Operation	Unload Throughput[1] (ton/yr)	Control Efficiency %	Uncontrolled Emissions						Controlled Emissions					
				PM		PM_{10}		$PM_{2.5}$		PM		PM_{10}		$PM_{2.5}$	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
21C	Railcar Unload 1	100,000	90%	0.80	3.50	0.80	3.50	0.80	3.50	7.99E-02	0.35	7.99E-02	0.35	7.99E-02	0.35
22C	Railcar Unload 2														
23C	Railcar Unload 3														
24C	Railcar Unload 4														
25C	Railcar Unload 5														
TOTAL					**3.50**		**3.50**		**3.50**		**0.35**		**0.35**		**0.35**

1. Conservative Procter and Gamble approximation. Accounts for five unloading points for rail cars which can feed any of 24 storage silos.

Table N-34. Plastics Molding Supplier - Silo Storage - Emission Factors

Emission Description	Emission Factors[1] (lb/ton material)
PM	7.00E-02
PM_{10}	7.00E-02
$PM_{2.5}$	7.00E-02

1. Estimated using average dusting factor for all types of pellet storage identified by EPA. Conservatively assumes $PM = PM_{10} = PM_{2.5}$.

Table N-35. Plastics Molding Supplier - Silo Storage - Emissions

Emission Unit	Operation	Unload Throughput[1] (ton/yr)	Control Efficiency %	Uncontrolled Emissions					
				PM		PM_{10}		$PM_{2.5}$	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
222S	Pellet Storage 1	100,000	0%	7.99E-01	3.50	7.99E-01	3.50	7.99E-01	3.50
223S	Pellet Storage 2								
224S	Pellet Storage 3								
225S	Pellet Storage 4								
226S	Pellet Storage 5								
227S	Pellet Storage 6								
228S	Pellet Storage 7								
229S	Pellet Storage 8								
230S	Pellet Storage 9								
231S	Pellet Storage 10								
232S	Pellet Storage 11								
233S	Pellet Storage 12								
234S	Pellet Storage 13								
235S	Pellet Storage 14								
236S	Pellet Storage 15								
237S	Pellet Storage 16								
238S	Pellet Storage 17								
239S	Pellet Storage 18								
240S	Pellet Storage 19								
241S	Pellet Storage 20								
242S	Pellet Storage 21								
243S	Pellet Storage 22								
244S	Pellet Storage 23								
245S	Pellet Storage 24								
TOTAL					**3.5**		**3.5**		**3.5**

1. Conservative Procter and Gamble approximation. Storage silos may be fed from any of five railcar unloading points.

Table N-36. Plastics Molding Supplier - Plastic Regrind - Emission Factors

Emission Description	Emission Factors[1] (lb/ton material)
PM	2.10E-01
PM_{10}	2.10E-01
$PM_{2.5}$	2.10E-01

1. Estimated using average dusting factor for all types of pellet storage identified by EPA, multiplied by 3x to account for regrind process. Conservatively assumes PM = PM_{10} = $PM_{2.5}$.

Table N-37. Plastics Molding Supplier - Plastic Regrind - Emissions

Emission Unit	Operation	Throughput[1] (ton/yr)	Control Efficiency %	Uncontrolled Emissions						Controlled Emissions					
				PM		PM_{10}		$PM_{2.5}$		PM		PM_{10}		$PM_{2.5}$	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
246	Plastic Regrind	32,000	95%	0.77	3.36	0.77	3.36	0.77	3.36	3.84E-02	1.68E-01	3.84E-02	1.68E-01	3.84E-02	1.68E-01
TOTAL					**3.36**		**3.36**		**3.36**		**1.68E-01**		**1.68E-01**		**1.68E-01**

1. Conservative Procter and Gamble approximation of 32% of total plastic throughput.

Table N-38. Plastics Molding Supplier - Cleaning - Emission Factors

Emission Description	VOC Emission Factors (lb/ton material)
Forming[1]	0.0614
Isopropyl Alcohol[2]	2000
Parts Washing Cleaning Solvent[2]	2000

1. Michigan Department of Environmental Quality, "Plastics Production and Products Manufacturing" fact sheet, emission factor for molding machine.

2. Assumes 100% loss rate.

Table N-39. Plastics Molding Supplier - Cleaning - Emissions

Emission Unit	Operation	Unload Throughput[1] (ton/yr)	Uncontrolled Emissions	
			VOC	
			(lb/hr)	(tpy)
247S	Forming	100,000	0.70	3.07
248S	Parts Washing/Process Cleaning	6	1.37	6.00
TOTAL			**2.07**	**9.07**

1. Conservative Procter and Gamble approximation.

Table N-40. Utilities - PMS Heaters - Parameters

Parameter		Value	Unit
249S	Space Heater 1	5	MMBtu/hr
250S	Space Heater 2	5	MMBtu/hr
251S	Space Heater 3	2.5	MMBtu/hr
252S	Space Heater 4	2.5	MMBtu/hr
253S	Space Heater 5	1	MMBtu/hr
254S	Space Heater 6	1	MMBtu/hr
Total Heat Input:		**17**	**MMBtu/hr**
Annual Gas Usage:		146	MMscf/yr
Equivalent Gas Hours:		8,760	Hours at 100% Load
Natural Gas Heating Value (HHV):		1,020	Btu/scf

Table N-41. Utilities - PMS Heaters - Criteria Emissions

Pollutant	Natural Gas Emission Factor	Units	Reference	Natural Gas Hourly Emissions (lb/hr)	Natural Gas Annual Emissions (tpy)
NO_X	50	lb/MMscf	1	0.83	3.65
CO	84.00	lb/MMscf	1	1.40	6.13
PM	7.60	lb/MMscf	1	1.27E-01	5.55E-01
PM_{10}	7.60	lb/MMscf	1	1.27E-01	5.55E-01
$PM_{2.5}$	7.60	lb/MMscf	1	1.27E-01	5.55E-01
SO_2	0.60	lb/MMscf	1	1.00E-02	4.38E-02
VOC	5.50	lb/MMscf	1	9.17E-02	4.02E-01
H_2SO_4	6.50E-03	lb/MMscf	2	1.08E-04	4.75E-04

1. Natural gas emission factors from AP-42 Section 1.4. PM assumed to equal PM_{10}.

2. Natural gas factor calculated assuming 1% of sulfur becomes H_2SO_4. Fuel oil emission factor from Emergency Planning and Community Right-To-Know Act,
EPCRA - Section 313: Guidance for Reporting Sulfuric Acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size). (March 1998)
EPA-745-R-97-007.

Table N-42. Utilities - PMS Heaters - Parameters

Parameter	Value	Unit
Heat Input:	17	MMBtu/hr
Hours of Operation on Natural Gas:	8,260	hr/yr
Natural Gas Heating Value (HHV):	1,020	Btu/scf

Table N-43. Utilities - PMS Heaters - HAP Emissions

Pollutant	Natural Gas Emission Factor[1]	Units	Emissions per Heater	
			lb/hr	tpy
2-Methylnaphthalene	2.4E-05	lb/MMscf	4.00E-07	1.65E-06
3-Methylchloranthrene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
7,12-Dimethylbenz(a)anthracene	1.6E-05	lb/MMscf	2.67E-07	1.10E-06
Acenaphthene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Acenaphthylene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Anthracene	2.4E-06	lb/MMscf	4.00E-08	1.65E-07
Benz(a)anthracene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Benzene	2.1E-03	lb/MMscf	3.50E-05	1.45E-04
Benzo(a)pyrene	1.2E-06	lb/MMscf	2.00E-08	8.26E-08
Benzo(b)fluoranthene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Benzo(g,h,i)perylene	1.2E-06	lb/MMscf	2.00E-08	8.26E-08
Benzo(k)fluoranthene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Chrysene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Dibenzo(a,h)anthracene	1.2E-06	lb/MMscf	2.00E-08	8.26E-08
Dichlorobenzene	1.2E-03	lb/MMscf	2.00E-05	8.26E-05
Fluoranthene	3.0E-06	lb/MMscf	5.00E-08	2.07E-07
Fluorene	2.8E-06	lb/MMscf	4.67E-08	1.93E-07
Formaldehyde	7.5E-02	lb/MMscf	1.25E-03	5.16E-03
Hexane	1.8E+00	lb/MMscf	3.00E-02	1.24E-01
Indeno(1,2,3-cd)pyrene	1.8E-06	lb/MMscf	3.00E-08	1.24E-07
Naphthalene	6.1E-04	lb/MMscf	1.02E-05	4.20E-05
Phenanathrene	1.7E-05	lb/MMscf	2.83E-07	1.17E-06
Pyrene	5.0E-06	lb/MMscf	8.33E-08	3.44E-07
Toulene	3.4E-03	lb/MMscf	5.67E-05	2.34E-04
Arsenic	2.0E-04	lb/MMscf	3.33E-06	1.38E-05
Beryllium	1.2E-05	lb/MMscf	2.00E-07	8.26E-07
Cadmium	1.1E-03	lb/MMscf	1.83E-05	7.57E-05
Chromium	1.4E-03	lb/MMscf	2.33E-05	9.64E-05
Cobalt	8.4E-05	lb/MMscf	1.40E-06	5.78E-06
Lead	5.0E-04	lb/MMscf	8.33E-06	3.44E-05
Manganese	3.8E-04	lb/MMscf	6.33E-06	2.62E-05
Mercury	2.6E-04	lb/MMscf	4.33E-06	1.79E-05
Nickel	2.1E-03	lb/MMscf	3.50E-05	1.45E-04
Selenium	2.40E-05	lb/MMscf	4.00E-07	1.65E-06
Total HAP			3.15E-02	1.30E-01

1. Natural gas emission factors from AP-42, Tables 1.4-3 and 1.4-4

Table N-44. Utilities - PMS Cooling Tower - Emissions

Parameter	Value
Emission Unit	255S
Location[1]	BBS
Flow Rate (gpm)	7,000
Operating Hours (hr/yr)	8,760
Density of Water (lb/gal)	8.35
Total Dissolved Solids, TDS (ppm)	1,600
Drift (%)[2]	5.00E-03
Drift (gpm)	0.35
$PM/PM_{10}/PM_{2.5}$ (lb/gal)[3]	6.68E-07
$PM/PM_{10}/PM_{2.5}$ (lb/hr)	2.80E-01
$PM/PM_{10}/PM_{2.5}$ (tpy)	1.23

1. Client specification.

2. Drift Percentage for Induced Draft Cooler specified in email from Brian Mensinger (Trinity Consultants) to Allison Cole (Trinity Consultants) on July 22, 2015.

3. PM_{10} are conservatively overestimated by (TDS, ppm) x (Total Drift Rate, lb/gal) / 10^6, based on AP-42 Section 13.4-3.

Table N-45. Plastics Molding - Back-Up Generator

Source Designation:	**Engine**	**Generator**
Emission Unit:	256S	--
Manufacturer:[1]	--	Generac
Stroke Cycle:	4-stroke	--
Type of Burn:[1]	Rich	--
Fuel Used:	Natural Gas	--
Higher Heating Value (HHV) (Btu/scf):	1,020	--
Power Generated @2,300 rpm (KW)	--	70
Maximum Fuel Consumption at 100% Load (scf/hr):[1]	196	--
Heat Input (HHV) (MMBtu/hr):[1]	0.20	--
Emission Controls:	None	--

Operational Detail	**Value**
Potential Annual Hours of Operation (hr/yr):	500
Potential Fuel Consumption (MMscf/yr):	0.10

Pollutant	**Emission Factors**	**Units**
NO_X[1]	2.70	g/kw-hr
CO[1]	5.40	g/kw-hr
SO_2[2]	5.88E-04	lb/MMBtu
PM (filterable only)[2]	9.50E-03	lb/MMBtu
PM_{10} (filterable + condensable)[2]	1.94E-02	lb/MMBtu
$PM_{2.5}$ (filterable + condensable)[2]	1.94E-02	lb/MMBtu
VOC[1]	1.30	g/kw-hr

Pollutant	**Potential Emissions**	
	(lb/hr)[3]	**(tpy)[4]**
NO_x	4.17E-01	1.04E-01
CO	8.33E-01	2.08E-01
SO_2	1.18E-04	2.94E-05
PM	1.90E-03	4.75E-04
PM_{10}	3.88E-03	9.71E-04
$PM_{2.5}$	3.88E-03	9.71E-04
VOC	2.01E-01	5.02E-02

Table N-45. Plastics Molding - Back-Up Generator

Pollutant	**Emission Factor (lb/MMBtu)[2]**	**Potential Emissions**	
		(lb/hr)[3]	**(tpy)[4]**
Acetaldehyde	2.79E-03	5.58E-04	1.40E-04
Acrolein	2.63E-03	5.26E-04	1.32E-04
Benzene	1.58E-03	3.16E-04	7.90E-05
1,3-Butadiene	6.63E-04	1.33E-04	3.32E-05
Carbon Tetrachloride	1.77E-05	3.54E-06	8.85E-07
Chlorobenzene	1.29E-05	2.58E-06	6.45E-07
Chloroform	1.37E-05	2.74E-06	6.85E-07
1,3-Dichloropropene	1.27E-05	2.54E-06	6.35E-07
Ethylbenzene	2.48E-05	4.96E-06	1.24E-06
Ethylene Dibromide	2.13E-05	4.26E-06	1.07E-06
Formaldehyde	2.05E-02	4.10E-03	1.03E-03
Methanol	3.06E-03	6.12E-04	1.53E-04
Methylene Chloride	4.12E-05	8.24E-06	2.06E-06
Naphthalene	9.71E-05	1.94E-05	4.86E-06
PAH	1.41E-04	2.82E-05	7.05E-06
Styrene	1.19E-05	2.38E-06	5.95E-07
Toluene	5.58E-04	1.12E-04	2.79E-05
1,1,2,2-Tetrachloroethane	2.53E-05	5.06E-06	1.27E-06
1,1,2-Trichloroethane	1.53E-05	3.06E-06	7.65E-07
Vinyl Chloride	7.18E-06	1.44E-06	3.59E-07
Xylenes	1.95E-04	3.90E-05	9.75E-06
Total HAP		**6.48E-03**	**1.62E-03**

[1] Emission factors from Certificate of Conformity GGNXB06.82C1-043. Factors from 40 CFR 60, Subpart JJJJ, Table 1.

[2] Emission factors from AP-42 Section 3.2, Table 3.2-3 "Uncontrolled Emission Factors for 4-stroke, Rich-burn Engines," Supplement F, August 2000.

[3] Emission Rate (lb/hr) = Rated Capacity (MMBtu/hr) × Emission Factor (lb/MMBtu)
Emission Rate (lb/hr) = Emission Factor (g/kw-hr) * Capacity (KW) * Conversion Factor (lb/g)

4 Annual Emissions (tons/yr) = Emission Rate (lb/hr) × (Maximum Allowable Operating Hours, 500 hr/yr) × (1 ton/2000 lb).

ATTACHMENT O

Monitoring/Recordkeeping/Reporting/Testing Plans

Attachment O						
MONITORING, RECORDKEEPING, REPORTING, AND TESTING PLANS						
Plan Type	Emission unit	Pollutant	Requirements	Frequency	Method of Measurement	Regulatory Reference
TBD	1C	SO_2/H_2SO_4	Monitor pH	Hourly	TBD	TBD
TBD	2C	SO_2/H_2SO_4	Monitor pH	Hourly	TBD	TBD
TBD	3C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	4C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	5C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	6C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	7C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	8C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	9C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	10	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	11C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	12C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	13C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	14C	All Pollutants	Initial Compliance Demonstration	TBD	TBD	TBD
TBD	14C	HAP/VOC	Monitor internal temperature	Hourly	TBD	TBD
TBD	14C	HAP/VOC	Operate RTO when Liquid Soap A Hot Mix Tank is being used.[1]	TBD	TBD	TBD
TBD	15C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	16C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	17C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	18C	$PM/PM_{10}/PM_{2.6}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	19C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	20C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	21C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	22C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	23C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	24C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	25C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	26C	$PM/PM_{10}/PM_{2.5}$	Monitor pressure drop	Weekly	TBD	TBD
TBD	256S	All Pollutants	Non-Resettable Hour Meter	Monthly	TBD	NSPS JJJJ
TBD	249S-254S	All Pollutants	Fuel Usage	Monthly	TBD	TBD
TBD	1S-2S	Dioxane	Maintain records	Monthly	TBD	NSPS VVa
TBD	196S-199S	All Pollutants	Fuel Records, including % Sulfur	Monthly	TBD	NSPS Dc
TBD	203S-207S	All Pollutants	Fuel Records, including % Sulfur	Monthly	TBD	NSPS IIII
TBD	203S-207S	All Pollutants	Non-Resettable Hour Meter	Monthly	TBD	NSPS IIII
TBD	210S-215S	All Pollutants	Fuel Usage	Monthly	TBD	TBD

1. Assumes 24 hours (per 12-month rolling period) of uncontrolled operation.

Monitoring, Recordkeeping, Reporting and Testing Plans. Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

*****Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.