Cleaner Air Oregon—Modeling Protocol (Revision 3)

Hollingsworth & Vose Fiber Company

Prepared for:

Oregon Department of Environmental Quality

Cleaner Air Oregon Permitting Program

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Abbreviations and Acronyms

BPIP	Building Profile Input Program for PRIME
CAO	Cleaner Air Oregon
CFU	ceramic filtration unit
DEQ	Oregon Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
the facility	specialty glass fiber manufacturing facility located at 1115 SE Crystal Lake Drive in Corvallis, Oregon 97339
FB	flameblown
GP1	Glass Plant 1
GP2	Glass Plant 2
g/s	gram(s) per second
H&V	Hollingsworth & Vose Fiber Company
MFA	Maul Foster & Alongi, Inc.
OAR	Oregon Administrative Rule
PM	particulate matter
RC	rotary coarse
RF	rotary fine
Scenario 1	production scenario with all rotary fiberizers assigned to production of RF fiber
Scenario 2	production scenario with all rotary fiberizers assigned to production of RC fiber
TAC	toxic air contaminant
TEU	toxic emissions unit
ug/m^3	micrograms per cubic meter
URC	ultra-rotary coarse

1 Introduction

Hollingsworth & Vose Fiber Company (H&V) owns and operates a specialty glass fiber manufacturing facility located at 1115 SE Crystal Lake Drive in Corvallis, Oregon 97339 (the facility). The facility consists of two glass fiber manufacturing buildings; Glass Plant 1 (GP1) and Glass Plant 2 (GP2). Additional buildings at the facility are used for raw material and finished product storage, maintenance, and administration.

On January 10, 2022, the Oregon Department of Environmental Quality (DEQ) provided written notice to H&V that the facility was being officially called-in to the Cleaner Air Oregon (CAO) permitting program. H&V retained Maul Foster & Alongi (MFA) to assist the facility with each step of the CAO permitting process. H&V has completed the CAO permitting program requirements presented in Table 1-1.

Table 1-1. CAO Process Step Submittals and Approvals

CAO Requirement	Submittal Date	DEQ Approval Date
CAO Emissions Inventory	April 11, 2022 (Final Revision March 14, 2024)	June 13, 2023 (Final Approval—June 20, 2024)
CAO Modeling Protocol	July 13, 2023 (Final Revision February 18, 2025)	June 20, 2024
CAO Risk Assessment Work Plan	August 10, 2023 (Final Revision February 18, 2025)	June 20, 2024
CAO Risk Assessment Report	October 15, 2024 February 18, 2025 (Revision 1)	--

The purpose of this revision to the modeling protocol is to incorporate proposed zoning changes identified by the DEQ in a letter dated January 17, 2025. A revised risk assessment work plan and risk assessment report are being submitted to the DEQ concurrent with this revised modeling protocol.

H&V conducted a Level 3 Risk Assessment to estimate the potential excess cancer risk and chronic and acute noncancer risk (expressed numerically as the chronic and acute hazard index) from the facility using the approach provided in the CAO rules by applying the existing source Risk Action Levels shown in OAR 340-245-8010 Table 1. The remainder of this modeling protocol outlines the modeling methodology to satisfy the requirements under OAR 340-245-0210(1).

2 Facility Description

2.1 Facility Location

The facility is located along the western edge of the Willamette Valley in Corvallis, Oregon. To the south and west of the facility are primarily residential and commercial land use zones. The Willamette River runs along the north and east sides of the facility property boundary. An aerial image of the facility

location and property boundary is presented in Figure 2-1. The area surrounding the facility location is characterized primarily by elevated terrain to the west and rural, flat lands to the east as shown in Figure 2-2.

2.2 Facility Description

Raw materials are blended together and introduced into the furnaces where they are melted into molten glass. The blend or batch is melted from the heat generated by opposing electrodes placed below the molten glass level. The molten glass passes from the furnace melter into a riser chamber where a gas firing and electrical system are provided to offset heat losses and control the temperature of the glass entering a gas fired forehearth. Molten glass is removed from the forehearth through electrically heated orifices located on the bottom.

The exiting glass streams are either sent directly to glass fiber forming equipment or are sent to molds which form the glass into solid patties or cullets. In the first case, the molten glass streams enter rotating high temperature alloy containers that have holes in the side. Centrifugal force causes the glass to pass through the holes where the resulting fibers are subjected to a gas burner that alters their diameter and length to specification. This is referred to as the direct melt rotary fiberization process. In the second case, the streams enter alloy molds that capture a fixed quantity of glass and form pools. This is referred to as the patty making process.

The glass patties or cullets can be used in two different glass fiber production processes. In both processes, glass patties or cullets are introduced into electric remelters where heat, generated by application of electricity, melts the glass patties or cullet into a liquid. In one process, the molten glass flows through numerous orifices in the bottom of the remelters. The resulting fibers are subjected to a gas burner that alters their diameter and length to specification. This is referred to as the flameblown process. In the second process, the molten glass flows through a single orifice in the bottom of the remelters. The resulting fibers are subjected to a gas burner that alters their diameter and length to specification. This is referred to as the remelt rotary fiberization process.

The fiberizers rotate at high speeds and use centrifugal force to push the molten glass through small holes to produce the glass fiber. The facility is able to produce four distinct types of fiber: rotary fine (RF), rotary coarse (RC), ultra-rotary coarse (URC), and flameblown (FB). Each fiber type is characterized by different widths and glass recipe. In all cases, the glass fibers are typically hundreds of microns in length, which is what allows the fibers to form mats for collection and for use in final products.

The resulting fibers from the forming lines are collected on revolving conveyors or cylindrical drums that have a vacuum applied to them. The collected fiber is transferred into hydraulic balers that compress the fiber into its final block form of baled fiber. The bales are temporarily stored on site until they are shipped out to customers.

Figures 2-3 and 2-4 present process flow diagrams that outline the manufacturing process and emission points at GP1 and GP2, respectively.

The following sections provide a description of the manufacturing process from raw material receipt through product collection and emissions control.

2.2.1 Raw Material Loading and Blending

Super sacks of raw materials are received from off-site sources. The raw material received includes, but is not limited to: sodium carbonate, nepheline syenite, sand, fluorspar, zinc oxide, potassium carbonate, dolomite, limestone, and barium carbonate. A diverter hose is used to pump raw materials from a sub-grade bin up to the third-floor batch tower processing area located at GP1. The batch tower consists of eight individual raw material hoppers. Each hopper vent is equipped with a cartridge filter for pretreatment of the hopper exhaust before it is routed to a baghouse (pollution control ID: BBBH) which vents to atmosphere. Raw materials in each hopper are loaded by weight into batch weigh hoppers, which weigh the ingredients for the desired glass product recipe. Particulate matter (PM) emissions generated from the weigh bin are routed to baghouse BBBH. Next, the weighed raw materials are directed to the mixing tank where the product recipe is blended. This mixing tank vents to baghouse BBBH.

Processed material received from the mixing tank is diverted to a feed hopper. Each feed hopper includes a chute with an attached screw auger that continuously feeds processed material onto the top of a bed of molten glass inside the glass melting furnaces. Feed hoppers vent PM emissions through cartridge filters (pollution control IDs: L1BH and L2BH) inside GP1. GP1 houses one raw material loading and blending system feeding two glass melting furnaces. No glass melting furnaces are located at GP2, so there is no raw material handling for bulk materials in that building.

2.2.2 Glass Melt Furnaces

The facility has two glass melt furnaces located at GP1: Glass Melter 1 and Glass Melter 2. The two glass melt furnaces service Line 1 and Line 2, respectively. Inside the glass melt furnaces, the blended raw materials are added to the surface of the molten glass already present, thereby ensuring a continuous homogeneous mixture. Both glass melt furnaces are electrically heated. Emissions generated by melting bulk materials in the furnaces are routed to ceramic filtration unit (CFU) 113 (pollution control ID: CFU-113).

GP2 does not operate any glass melt furnaces as all fiberizers are fed by electric remelter units that use cullet or glass patties. Electric remelters are an alternative technology to forehearths that allow the facility to recycle glass patties and cullet by placing this glass in a hopper and then melting it with electric heaters.

2.2.3 Forehearths

Both glass melting furnaces at GP1 are serviced by a forehearth that receives molten glass at high temperatures and delivers it to the fiberizers. The forehearths, unlike the glass melting furnaces, are heated by natural gas combustion. The emissions generated from natural gas combustion are captured by a suspended rectangular hood positioned above the forehearth. Exhaust from both the Line 1 and the Line 2 Forehearths are routed to CFU-113 for emissions control.

The forehearths can also deliver molten glass to glass patty formers or to a station that produces glass cullet. No forehearths are located at GP2 as there are no glass melt furnaces.

2.2.4 Fiberizers

Rotary fiberizers receive molten glass from the forehearths (in GP1) or electric remelters (in GP1 and GP2). The fiber forming process uses equipment that combusts natural gas to achieve and maintain

critical product specifications. The facility monitors the natural gas flow rate and air-to-fuel ratio to maintain the molten glass in liquid form and maximize the blast velocity for fiber formation. The molten glass is fed to a rotary spinner which utilizes centrifugal forces to push the molten glass outward through small holes in the walls of the rotary fiberizers resulting in thin glass fibers. The newly formed glass fibers are pneumatically conveyed to collection drums (GP1 and GP2) or a former (GP1 only) for capture and packaging. The facility produces three rotary fiber types: RF, RC, and URC.

The facility also operates four FB fiberizers in GP2. The FB fiberizers receive molten glass from electric remelters. Molten glass flows by gravity through numerous small orifices to create threads that are attenuated (stretched to the point of breaking) by high velocity hot air and flame. The newly formed glass fibers are pneumatically conveyed to drums for capture and packaging.

2.2.5 Product Collection

2.2.5.1 Drums

After glass fibers have been created by the rotary or FB fiberizers, they are collected on a drum screen. The drum is a spinning cylinder with holes. A fan is used to pull air from inside the drum. As the air is sucked through the outside holes in the drum, the fibers collect on the drum surface. The glass fibers build up a pelt on the drum surface, which is physically removed for product packaging. Drum collection of glass fiber is used in both GP1 and GP2. Each drum vents PM emissions to a CFU for emissions control (pollution control IDs: CFU-101 to CFU-109, CFU-111, and CFU-114 to CFU-118).

2.2.5.2 Formers

Glass fiber generated by some rotary fiberizer positions on Lines 1 and 2 in GP1 is collected on formers. Unlike a cylindrical drum, a former is a porous belt. Glass fiber from the fiberizers is directed to the top surface of the belt, while air is pulled from the underside of the belt. As the belt moves, it accumulates more fiber. At one end of the belt, the mat of fiber is removed and packaged. Emissions from Line 1 and Line 2 formers are controlled by CFUs.

3 Model Emission Units

Annual and daily TAC emission estimates for the process equipment and emission-control devices, considered to be toxic emissions units (TEUs) per OAR 340-245-0020(59), were prepared as shown in the DEQ-approved TAC emissions inventory. The annual and daily TAC emission estimates for significant TEUs were converted to units of grams per second (g/s) for purposes of conducting the Level 3 Risk Assessment as shown in Tables 3-1, 3-2, 3-3 and 3-4. Tables 3-5 and 3-6 present the annual and daily TAC emission estimates for gas combustion TEUs as defined under OAR 340-245-0050(5). Additional details regarding how the DEQ-approved annual and daily TAC emission rates were used to complete the Level 3 Risk Assessment are provided in the Risk Assessment Work Plan.

The TEUs identified in the DEQ-approved TAC emissions inventory were represented in a dispersion model developed to represent the facility. Each TEU source representation was modeled using a unit emission rate equivalent to 1 g/s for all modeled source types as shown in Tables 3-7 and 3-8. Additional details describing unit emission rate modeling are provided in Section 4.4.

3.1 Fiber Production CFU Stacks

Each of the CFU stacks has multiple sources of TAC emissions venting through a single stack. These TAC sources include: fiber production, production natural gas combustion, and CFU bulking agent. Production natural gas combustion TAC emissions are apportioned between the fiber types based on fiberizer natural gas usage rates.

As discussed in Section 2, the facility has the flexibility to produce many fiber types. MFA evaluated multiple potential fiber production scenarios to the determine the highest theoretical risk production scenario for each risk category (e.g. residential cancer risk). From this analysis, it was determined that RF fiber production results in the highest potential risk for the following categories: Cancer Worker and Chronic Noncancer (all categories). RC fiber production results in the highest potential risk for the following categories: Cancer Residential, Cancer Child, and Acute Noncancer.

Based on this analysis, H&V assessed risk for two production scenarios: the first with all rotary fiberizers assigned to production of RF fiber (Scenario 1) and second with all rotary fiberizers assigned to production of RC fiber (Scenario 2). As URC production did not represent the highest risk for any category it was excluded from the production scenarios.

Neither of the production scenarios reflect realistic production at the facility and cannot be achieved in practice. H&V evaluated these assumptions only to address any questions about the maximum risk posed by the facility under any scenario. Under Scenario 1, full production of RF fiber would lead to drastic underutilization of the capacity of both the Line 1 and Line 2 Furnaces. In contrast, full production of RC fiber (Scenario 2) would require pull rates on the remelters at Lines 3 and 4 that cannot be met by the equipment, nor could the Line 1 and Line 2 furnaces produce enough glass to supply all fiberizers at the RC production rate. While neither scenario could be achieved in practice, modeling risk at these theoretical extremes ensured that risk from the facility was not underestimated.

3.1.1 RF Fiber Production, CFU Bulking Agent, and RF Fiber Production Natural Gas Combustion (TEU IDs: RF, CFU_RF, and NG_GP)

Under Scenario 1, all rotary fiberizers were assigned to produce RF fiber. No RF fiber production occurred under Scenario 2. The total annual and daily TAC emission estimates for the RF fiberizers, CFU bulking agent, and production natural gas combustion were split evenly across fifteen CFUs as shown in Tables 3-1 and 3-3. Each CFU was represented in the dispersion model as an individual point source with a unique model ID (CFU101, CFU102, CFU103, CFU104, CFU105, CFU106, CFU107, CFU108, CFU109, CFU110, CFU111, CFU112, CFU116, CFU117, and CFU118). Release parameters for each point source representation are presented in Table 3-7. The release parameters for the rotary fiberizer CFUs do not differ between fiber type and are the same for both production scenarios.

3.1.2 RC Fiber Production, CFU Bulking Agent, and RC Fiber Production Natural Gas Combustion (TEU IDs: RC, CFU_RC, and NG_GP)

Under Scenario 2, all rotary fiberizers were assigned to produce RC fiber. No RC fiber production occurred under Scenario 1. The total annual and daily TAC emission estimates for the RC fiberizers, CFU bulking agent, and production natural gas combustion were split evenly across the same fifteen CFUs discussed in Section 3.1.1, as shown in Tables 3-2 and 3-4. Each CFU was represented in the dispersion model as an individual point source with a unique model ID (CFU101, CFU102, CFU103,

CFU104, CFU105, CFU106, CFU107, CFU108, CFU109, CFU110, CFU111, CFU112, CFU116, CFU117, and CFU118). Release parameters for each point source representation are presented in Table 3-7. The release parameters for the rotary fiberizer CFUs do not differ between fiber type and are the same for both production scenarios.

3.1.3 FB Fiber Production, CFU Bulking Agent, and FB Fiber Production Natural Gas Combustion (TEU IDs: FB, CFU_FB, and NG_GP)

The exhaust from the FB fiberizers is routed to one of two downstream CFUs for emissions control. The total annual and daily TAC emission estimates for the FB fiberizers, CFU bulking agent, and production natural gas combustion were split evenly across the two CFUs as shown in Tables 3-1 through 3-4. TAC emission estimates for these TEUs are the same under both production scenarios. Both CFUs were represented in the dispersion model as an individual point source representation with a unique label (CFU114 and CFU115). Release parameters for both point source representations are presented in Table 3-7.

3.2 Glass Melt and CFU Bulking Agent (TEU ID: GM and CFU_GM)

The exhaust from the two glass melt furnaces is routed through CFU-113 for emissions control. The total annual and daily TAC emission estimates for the Glass Melt and CFU bulking agent are shown in Tables 3-1 through 3-4. The CFU-113 stack was represented in the dispersion model as the single point source with a unique label (CFU113). Release parameters for CFU-113 are presented in Table 3-7.

3.3 CFU Super Sack Filling (TEU IDs: SSF_RF, SSF_RC, SSF_FB, and SSF_GM)

Periodic air pulses displace the filtered material that accumulates on the ceramic filters attached to each CFU. The displaced filtered material drops below the filter housing and is collected as waste in a super sack. Each CFU is equipped with between two and six super sacks which are identified, for each CFU, as the CFU Super Sack Filling TEU. As each super sack is filled, displaced air is forced through an attached fabric filter for control of TAC emissions.

Due to the close proximity of the each CFU's super sacks, MFA included a single volume source in the dispersion model for each CFU Super Sack Filling TEU. The location of each source was conservatively selected based on proximity to the plant boundary.

Annual and daily TAC emissions from the CFU Super Sack Filling TEU were split evenly across each associated CFU super sack based on the fiber produced. The fiber production assignment is based on typical fiber production at each fiberizer. The SSF_RF TEU was represented in the dispersion model as six volume sources with unique model IDs (SSF01, SSF02, SSF05, SSF16, SSF17, and SSF18). The SSF_RC TEU was represented in the dispersion model as nine volume sources with unique model IDs (SSF03, SSF04, SSF06, SSF07, SSF08, SSF09, SSF10, SSF11, and SSF12). The SSF_FB TEU was represented in the dispersion model as two volume sources with unique model IDs (SSF14 and

SSF15). The SSF_GM TEU was represented in the dispersion model as a single volume source with unique model ID SSF13. Release parameters for each volume source are presented in Table 3-8.

3.4 Glass Plant Baling (TEU ID: BALING)

Fugitive TAC emissions of glasswool fibers may be generated when removing glass fiber pelts from the drum collectors or formers and baling them. Small tufts of glasswool fiber can sometimes be seen falling off a pelt or becoming airborne from displaced air during the baling process. Only a small portion of the displaced glasswool fiber emitted during the baling process is estimated to leave the glass plant building. Note, fugitive emissions from baling are exclusive to GP1, however we have conservatively estimated TAC emissions for both plants. TAC emission estimates are apportioned between GP1 and GP2 based on annual fiber production rates that occur in the two plants under Scenario 2 which is the higher of the two production scenarios.

Glasswool fibers (DEQ Sequence ID 352) does not have a risk-based concentration and therefore the Baling TEU does not need to be included in the risk assessment. However, emissions from the Line 1 and Line 2 Furnace Bin Vents (discussed in Section 3.6) also vent internally at GP1 and fugitive emissions from GP1 will therefore be included in the dispersion model. MFA reviewed typical baling locations at GP1 and determined the most likely locations for glasswool fibers to exit the GP1 building are from two roof vents located at the peak of GP1. The total annual and daily TAC emission estimates for baling and the Line 1 and Line 2 Furnace Bin Vents are shown in Tables 3-1 through 3-4. Potential fugitive TAC emissions from GP1 are represented in the dispersion model as two distinct volume sources with unique model IDs (GP1_A and GP1_B). Release parameters for both volume sources are presented in Table 3-8.

3.5 Bulking Agent Storage Silos (TEU IDs: SILO1 and SILO2)

The facility uses two storage silos to store fresh bulking agent that is pneumatically conveyed to the CFUs as needed. Each silo vent is equipped with high efficiency fabric filters for capture and recovery of bulking agent dust generated during silo filling activities. The Bulking Agent Storage Silos for GP1 and GP2 were represented as two individual volume sources with model IDs SILO1 and SILO2, respectively. Release parameters for both volume sources are presented in Table 3-8.

3.6 Raw Material Handling (TEU IDs: RMH_BA, RMH_ZN, RMH_F, RMH_S, RMH_D, RMH_L, and RMH_N)

TAC emissions from raw material handling activities, represented as TEUs RMH_BA, RMH_ZN, RMH_F, RMH_S, RMH_D, RMH_L, and RMH_N, were combined for purposes of dispersion modeling. Raw material handling activities occur simultaneously in the same locations at the facility. Annual and daily TAC emissions from raw material handling were apportioned based on the associated PM emission factor ratio as shown in Table 3-1 through 3-4.

Emissions generated from raw material transport, storage, and mixing activities are routed to baghouse BBBH for emissions control. The baghouse BBBH stack was represented in the dispersion model as a single point source with model ID BBBH. Emissions from batch mix storage at the Line 1 and Line 2 furnace bins are exhausted through cartridge filters that vent inside GP1. MFA determined

the most likely locations for TAC emissions to exit the GP1 building are from two roof vents located at the peak of GP1. Emissions from the GP1 baling activities (discussed in Section 3.4) also exhaust through this location. The total annual and daily TAC emission estimates for GP1 baling and the Line 1 and Line 2 Furnace Bin Vents are shown in Tables 3-1 through 3-4. The GP1 roof vents were represented in the dispersion model as two distinct volume sources with unique model IDs (GP1_A and GP1_B). Release parameters for the raw material handling source representations are presented in Table 3-8.

3.7 Raw Material Handling Off Specification (TEU ID: RMH_OFF)

Mixed batches of raw materials which do not meet the glass type specifications are conveyed to the Off Specification Bin for disposal as waste. Fugitive TAC emissions generated by transport of the materials are routed to baghouse BHBH. The baghouse BHBH stack was represented in the dispersion model as a single volume source with the unique model ID BHBH. Release parameters for this volume source are presented in Table 3-8.

3.8 Cooling Towers (TEU IDs: CT1_2, CT3, and CT4)

The facility has two cooling towers at GP1 and one cooling tower at GP2 that generate TAC emissions due to TAC-containing corrosion inhibitor use. The cooling tower on Line 1 and Line 2 at GP1 was represented in the dispersion model as a single point source with the unique model ID CT1_2. The cooling tower on Line 3 at GP1 was represented in the dispersion model as two distinct point sources, one point source per cooling tower cell, with unique model IDs (CT3_A and CT3_B). The cooling tower on Line 4 at GP2 was represented in the dispersion model as a single point source with the unique model ID CT4. Release parameters for each cooling tower source representation are presented in Table 3-7.

3.9 Shipping and Receiving Spray Paint (TEU ID: PAINT)

The Shipping and Receiving Department at the facility uses a small volume of spray paint to mark incoming and outgoing materials. Typical usage locations were reviewed, and the source location conservatively represents the location nearest to the facility property boundary. The Shipping and Receiving Spray Paint was represented in the model as a volume source with the unique model ID PAINT. Release parameters for this volume source are presented in Table 3-8.

3.10 Emergency Generators (TEU IDs: EGEN1 and EGEN2)

The facility uses two diesel-powered emergency generators to provide power to critical equipment at GP1 during power outages. TAC emissions from each emergency generator were represented in the dispersion model as an individual point source with a unique model ID (EGEN1 and EGEN2). Release parameters for both point sources are presented in Table 3-7.

3.11 Natural Gas Combustion TEUs (TEU IDs: NG_FH and NG)

The specific procedures for assessing the risk of each TEU are dependent on the TEU designation per OAR 340-245-0050(4). Per OAR 340-245-0050(5), the gas combustion "exemption applies to TEUs that solely combust natural gas, propane, [or] liquefied petroleum gas." The following units represent sources of natural gas-fired combustion emissions only (shown with the corresponding dispersion model IDs in parentheses). As discussed in Sections 3.1 and 3.2, due to the characteristics of the facility's natural gas combustion for production activities at the fiberizers, TAC emissions from the fiberizers' natural gas combustion will be included in the significant TEU analysis.

- Natural gas combustion TAC emissions for Lines 1 and 2 Forehearths are exhausted through CFU-113. This TEU is represented in the model as an individual point source (CFU113NG).
- TAC emissions from non-production related natural gas-fired combustion will be assigned to a single air handling unit located on the roof of GP2. MFA reviewed the locations where non-production related natural gas is used at the facility and proposes to represent TAC emissions from non-production related natural gas usage as an individual point source (NG) at a conservative location nearest to the facility property boundary and nearest residential area. Conservative exhaust parameters were selected for this source as actual parameters are unavailable.

Release parameters for each gas combustion TEU are presented in Table 3-7. The annual and daily TAC emission rates for the gas combustion TEUs are presented in Tables 3-5 and 3-6, respectively.

3.12 Exempt TEUs

The facility operates a maintenance shop for periodic maintenance and repair of process equipment. Activities include a small amount of welding and use of various lubricants and greases. MFA compared usages of maintenance products against thresholds set by the DEQ in reporting guidance and determined, applying that guidance, that the maintenance shop constitutes an Exempt TEU for the purposes of CAO.

4 Air Dispersion Modeling Methodology

The following subsections detail the dispersion modeling methodology and setup, including input parameters and assumptions.

4.1 Model Selection

MFA executed the dispersion model using the model versions shown in Table 4-1. Lakes Environmental, a third-party overlay software, was used to execute the dispersion model.

Table 4-1. Model Selection

Model	Model Version
AERMOD	23132
AERMET	23132
AERMAP	18081
AERSURFACE	20060
BPIP	04274

4.2 Meteorological Data

MFA developed the meteorological and terrain data files shown in Table 4-2 below.

Table 4-2. Meteorological and Terrain Data

Dataset	Station ID
Site-Specific	Onsite ambient meteorological monitoring tower
Upper Air	Station ID 24232 for Salem, OR (National Oceanic and Atmospheric Administration/ Earth System Research Laboratory Radiosonde Database)
Terrain	U.S. Geological Survey National Elevation Dataset (1/3-arc seconds with horizontal resolution of 10 meters)

4.2.1 Surface Meteorological Data

In late December 2016, H&V installed an ambient meteorological monitoring tower at the facility near GP2 at a location approved by DEQ. Beginning January 1, 2017, H&V collected a full calendar year of meteorological data through January 1, 2018. MFA used the actual, site-specific data to develop an onsite surface dataset for input into AERMET.

Hourly data for wind speed, wind direction, standard deviation of wind direction (sigma theta), solar radiation, atmospheric pressure, and temperature were monitored at the facility. To create a dataset appropriate for modeling, all ambient monitored data were collected and assessed following guidance outlined in the U.S. Environmental Protection Agency (EPA) "Meteorological Monitoring Guidance for Regulatory Modeling Applications" manual. Appendix W to Part 51 of Title 40 of the Code of Federal Regulations, "The Guidelines on Air Quality Models," states:

> "The model user should acquire enough meteorological data to ensure that worst-case meteorological conditions are adequately represented in the model results [...], at least 1 year of site-specific, [...] meteorological data, are required."

H&V collected one full calendar year of onsite data meeting the requirements of Appendix W.

4.2.2 Upper-Air Data

Upper-air meteorological data for Salem, OR (station ID 24232) were collected from the National Oceanic and Atmospheric Administration Earth System Research Laboratory Radiosonde Database in Forecast Systems Laboratory format. Upper-air meteorological data were extracted for the 2017 calendar year.

4.2.3 Data Processing—AERMET

The site-specific and upper air meteorological data were processed using the EPA AERMET program to produce a single year of model-ready meteorological data for use in the AERMOD dispersion model. The land use surface characteristics were processed using AERSURFACE.

MFA performed an analysis of the data completeness for the meteorological dataset using the quality assurance feature available in the Lakes Environmental software. Each of the four calendar quarters were reviewed for the number of missing hours shown in the output file. Each calendar quarter in the meteorological dataset must have fewer than 10 percent missing hours to be considered valid and complete. As shown in Table 4-3, each calendar quarter met this criterion.

A wind rose for the one-year meteorological dataset is presented in Figure 4-1. The most prominent winds blow from 160 degrees and 280 degrees. This alignment corresponds to the typical coastal winds blowing in from the west (280 degrees), and summertime winds blowing up the Willamette Valley from the south (160 degrees). The Willamette Valley is generally oriented north south.

4.3 AERSURFACE Land Use

AERSURFACE was used to generate seasonal values for albedo, Bowen ratio, and surface roughness heights. State of Oregon National Land Cover Dataset land cover class definitions, along with concurrent percent impervious surface and percent tree canopy data were downloaded from the U.S. Geological Survey and processed using the AERSURFACE land-use tool to generate the surface characteristics necessary to run AERMET. The data was processed in AERSURFACE using the settings presented in Table 4-4.

Surface moisture conditions were determined following the methodology set forth in the AERSURFACE User's Guide dated February 2022. Section 2.2.3 in the AERSURFACE User's Guide states:

> "the surface moisture condition can be determined by comparing precipitation for the period of data to be processed to the 30-year climatological record. It is recommended the user specify "wet" conditions if precipitation is in the upper 30th-percentile, "dry" conditions if precipitation is in the lower 30th-percentile, and "average" conditions if precipitation is in the middle 40th-percentile."

Annual precipitation data for the Corvallis, Oregon (ID: 351862) met station were retrieved from the Western Regional Climate Center for the 2017 calendar year to assess soil moisture conditions for the site-specific meteorological data. The Corvallis met station was chosen because of its proximity to the modeling domain. As shown in Table 4-5, the total precipitation collected during the modeling period at the Corvallis station was 53.6 inches, which is more than the 70th percentile annual precipitation of 47.8 inches. As a result, AERSURFACE was executed assuming wet soil moisture conditions for the site-specific meteorological data.

4.4 Unit Emission Rates

Results from the air dispersion model runs, executed using a unit emission rate equivalent to 1 g/s for each TEU identified in the DEQ-approved TAC emissions inventory, can be used to derive the predicted concentrations of TACs emitted from a given TEU. MFA executed the dispersion model using unit emission rates for all TEUs, for both the annual and daily averaging periods, as shown in Tables 3-7 and 3-8.

The maximum modeled unit concentration in micrograms per cubic meter (ug/m^3) for each averaging period was considered a modeled dispersion factor in units of ug/m^3 per g/s. When this dispersion factor is multiplied by the TAC emission rate for the modeled TEU, the result is the modeled concentration of the TAC. The dispersion factors were used to conduct the Level 3 Risk Assessment, in combination with TAC emission rates for each TEU in g/s and the risk-based concentrations in ug/m^3 set forth under OAR 340-245-8010 Table 2.

4.5 Building Downwash and TEU Locations

The most recent version of the EPA Building Profile Input Program for PRIME (BPIP) was used to calculate direction-specific building downwash parameters for applicable building structures located at the facility as shown in Table 4-1.

The location of each significant TEU and gas combustion TEU that was included in the dispersion model are shown in Figure 4-2 and Figure 4-3, respectively. The locations for structures that were projected to influence downwash are presented in Figure 4-4. Table 4-6 presents a summary of the building heights to be included in the dispersion model.

4.6 Receptor Locations and Terrain

Receptors were defined consistent with Section 2.4 of the DEQ's *Recommended Procedures for Air Quality Dispersion Modeling*[1] as shown in Table 4-7 below. Figure 4-5 presents the receptor spacing and locations within the modeling domain. Figure 4-6 presents the receptor locations in the area immediately surrounding the facility.

Table 4-7. Receptor Locations

Receptor Spacing (meters)	Receptor Distance (meters)
25	Along the property boundary and out to at least 200 meters from the property boundary
50	200 to 1,000
100	1,000 to 2,000
200	2,000 to 5,000
500	5,000 to 10,000

[1] DEQ. 2022. Recommended Procedures for Air Quality Dispersion Modeling. Oregon Department of Environmental Quality. March.

Terrain elevations for model receptors, TEU base elevations, and base elevations of downwash structures were derived from U.S. Geological Survey National Elevation Dataset data at a resolution of 1/3 arc-seconds (a horizontal resolution of roughly 10 meters) and processed using the current version of AERMAP.

4.6.1 Sensitive Receptor Location

MFA identified locations considered to be a "sensitive receptor" (e.g., daycare, school, or medical facilities) within approximately 1 kilometer of the facility property boundary. These sensitive receptor locations are shown in Table 4-8 below. Discrete receptors for the identified sensitive receptors were included at these coordinates in the dispersion model.

Table 4-8. Identification of Sensitive Receptor Locations

UTM Coordinates (meters)		Sensitive Area
Easting	Northing	
478569.73	4933304.15	Avery House Nature Center
479156.75	4934053.31	CSC Youth House

4.7 Land-Use Zoning Classification Data for Determining Exposure Types

MFA reviewed the Department of Land Conservation and Development's statewide zoning data to determine land-use classifications for areas within the modeling domain. The Oregon statewide zoning classifications provide the basis for the initial categorization of exposure classifications (e.g., residential, nonresidential worker, nonresidential child, or acute) as shown in Table 4-9.

The zoning data were further evaluated against the local City of Corvallis zoning data, Benton and Linn County zoning data, school data obtained from the Oregon Health Authority, hospital location data obtained from the U.S. Department of Homeland Security, and early learning provider location data obtained from the Oregon Department of Education. MFA also reviewed aerial imagery via Esri ArcGIS and Google Earth software to determine whether the existing zoning information reflects actual land use and the corresponding exposure type categorization. MFA reviewed proposed zoning changes in the South Corvallis Area Plan, dated November 25, 2024, and incorporated any changes that resulted in a more conservative exposure scenario with respect to risk estimates.

The zoning data and internal MFA review process indicate that multiple locations fall within roadway and/or rail rights-of-way interstitial spaces as shown in black in Figures 4-5 and 4-6. These locations were included for dispersion modeling to maintain a uniform receptor grid. MFA did not conduct risk evaluations for any receptor location in roadways or rail rights-of-way. In the crosswalk-of-receptors, which will be provided to the DEQ in spreadsheet format due to the number of receptor locations, these locations are labeled as "Risk Not Assessed," even though they will be modeled, and dispersion factors will be generated.

Figure 4-7 presents the existing land-use classifications identified for the modeling domain, and Figure 4-8 is provided for the area immediately surrounding the facility. Figure 4-9 and Figure 4-10

present the corresponding exposure location categorizations for the modeling domain and the immediate area surrounding the facility, respectively.

5 Closing

MFA looks forward to working with the DEQ throughout the CAO permitting process. If there are any questions or comments regarding this modeling protocol, please contact Leslie Riley at lriley@maulfoster.com.

Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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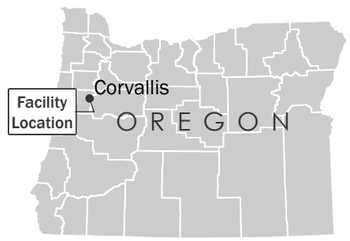
Figure 2-1
Aerial Image of the Facility

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Legend

- Property Boundary
- UTM Grid Guideline

Key Map



0 60
Meters

Data Source
Aerial photograph obtained from Esri.

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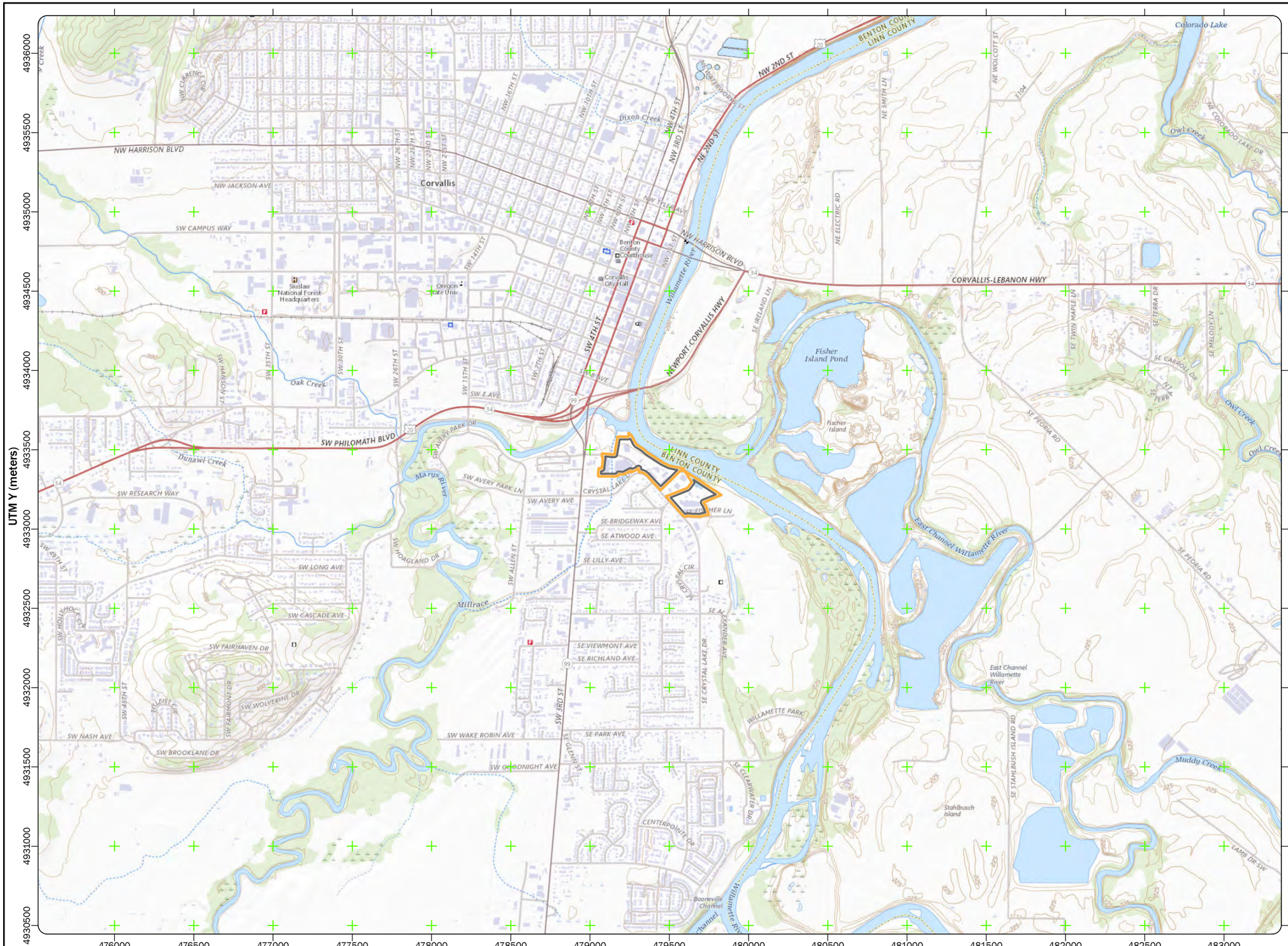
Figure 2-2
Local Topography

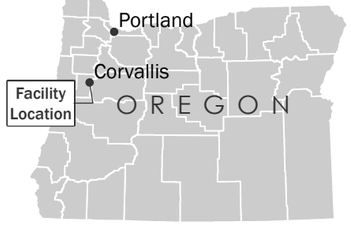
Hollingsworth & Vose
Fiber Company
Corvallis, OR



Legend

- Property Boundary
- UTM Grid Guideline

Key Map



0 600
Meters

Data Source
Aerial photograph from U.S. Department of Agriculture.

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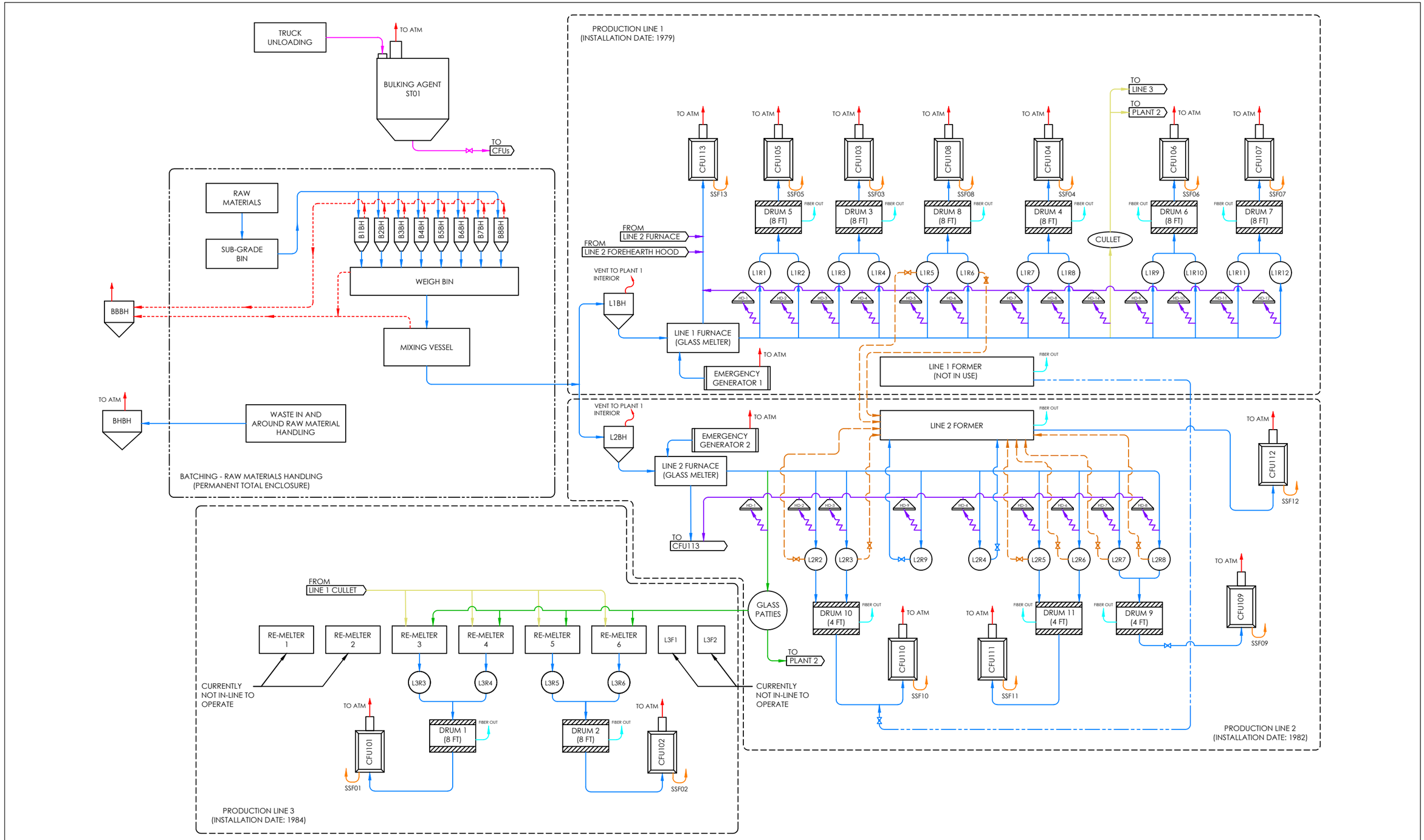

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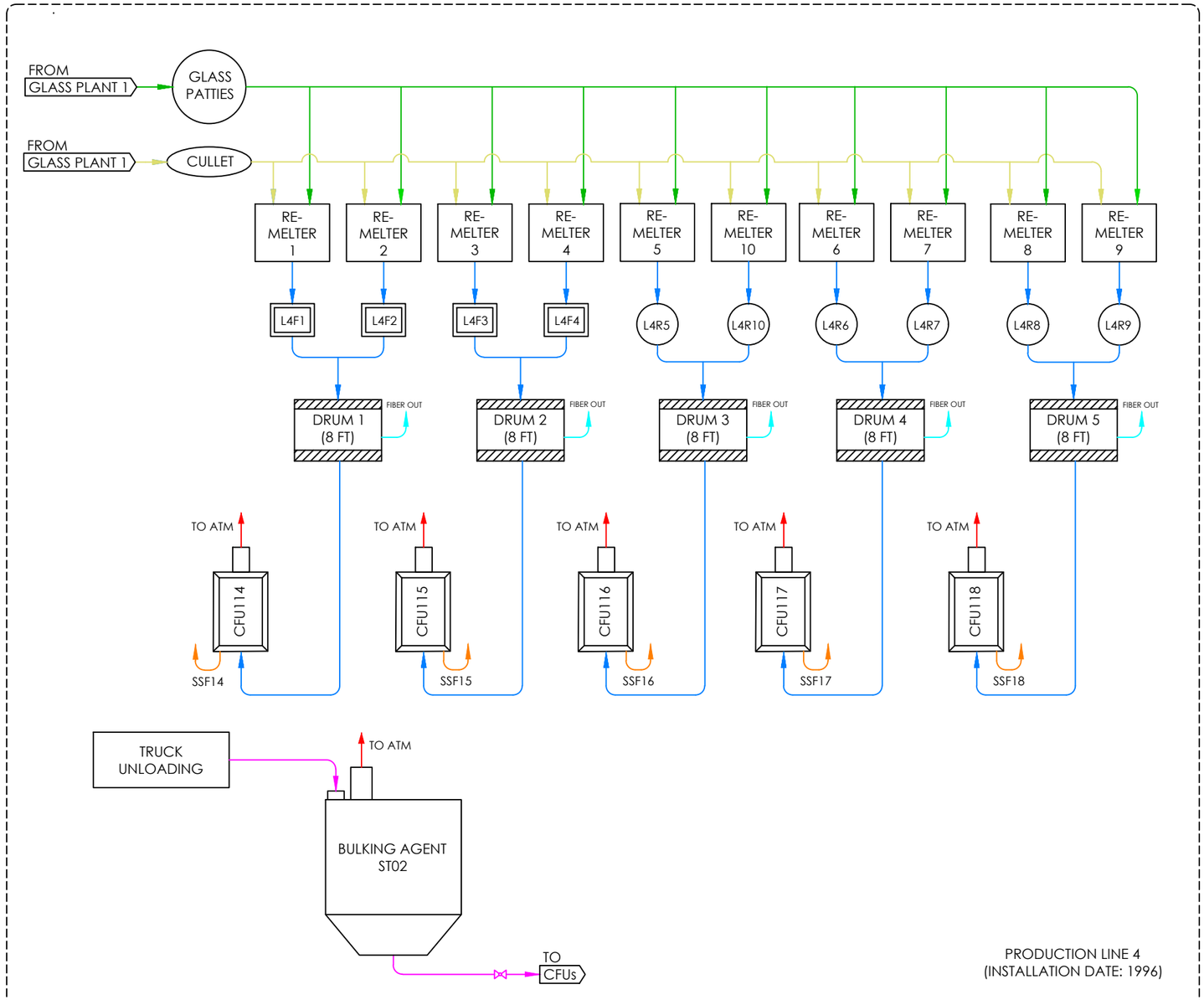
LEGEND

- BULKING AGENT
- MAIN FIBER MANUFACTURING ROUTE
- MAIN FIBER MANUFACTURING ROUTE (NOT IN USE)
- CULLET ROUTE
- GLASS PATTIES ROUTE
- ALTERNATIVE ROUTE
- EMISSIONS
- GLASS FIBER
- EMISSIONS (INTERNALLY VENTING)
- EMISSIONS TO ATMOSPHERE (VENT OR STACK)
- CFU DISCHARGE (THROUGH FABRIC FILTER ON SUPER SACK)
- EMISSIONS COLLECTED BY A HOOD
- ROTARY FIBERIZER

Figure 2-3
Process Flow Diagram - Glass Plant 1

Hollingsworth & Vose Fiber Company
Corvallis, OR



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LEGEND

- BULKING AGENT
- MAIN FIBER MANUFACTURING ROUTE
- CULLET ROUTE
- GLASS PATTIES ROUTE
- GLASS FIBER
- EMISSIONS TO ATMOSPHERE (VENT OR STACK)
- CFU DISCHARGE (THROUGH FABRIC FILTER ON SUPER SACK)
- FLAMEBLOWN FIBER PRODUCTION
- ROTARY FIBERIZER

Figure 2-4
Process Flow Diagram - Glass Plant 2
Hollingsworth & Vose Fiber Company
Corvallis, OR

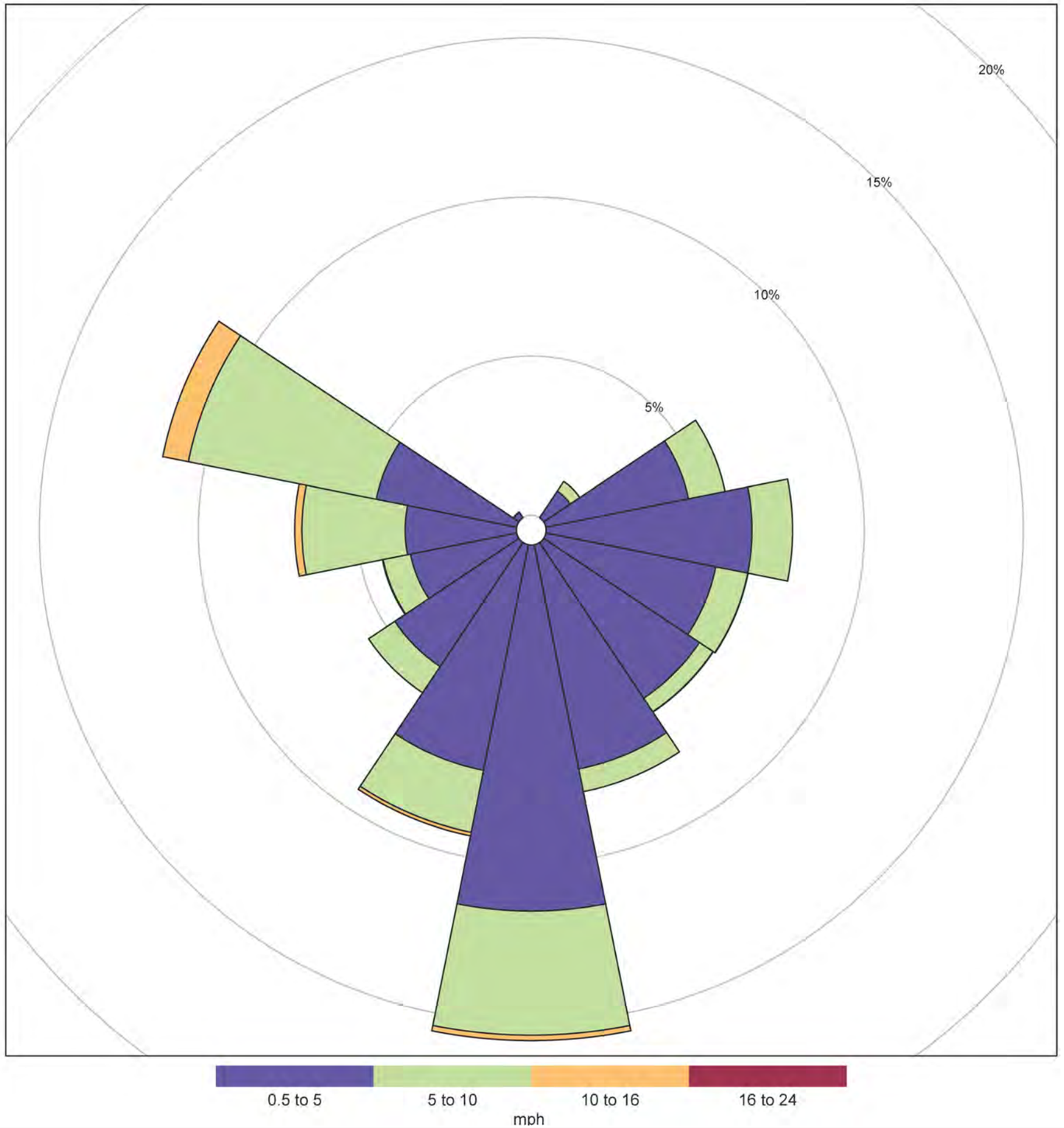
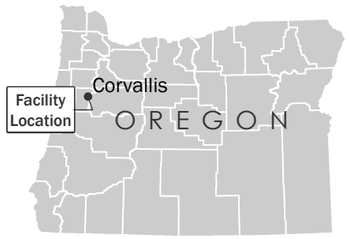


Figure 4-1
Wind Rose for Corvallis, OR

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Key Map



Notes

Wind rose graphics depict the direction the wind is blowing from, the percentage of hours, and the wind speed.

Meteorological data obtained from the DEQ-approved onsite monitoring tower that recorded data from January 1, 2017 through January 1, 2018. The 1-year onsite meteorological dataset was processed using the AERMET meteorological data preprocessor.

mph = miles per hour.

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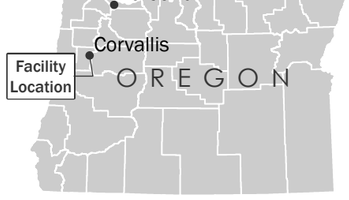
Figure 4-2
Significant Toxic Emission Unit Locations

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Legend

- Point Source Location
- Volume Source Location Property
- Boundary
- UTM Grid Guideline

Key Map



0 60
Meters

Data Source
Aerial photograph from U.S. Department of Agriculture.

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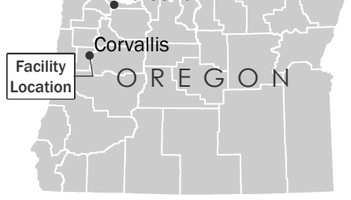
Figure 4-3
Gas Combustion Toxic Emission Unit Locations

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Legend

- Gas Combustion Toxic Emission Unit Location
- Property Boundary
- UTM Grid Guideline

Key Map



0 60
Meters

Data Source
Aerial photograph from U.S. Department of Agriculture.

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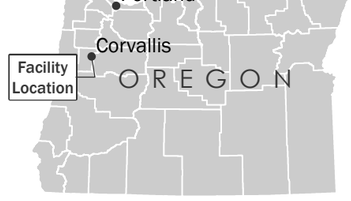
Figure 4-4
Downwash Structures

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Legend

- Buildings
- Property Boundary
- UTM Grid Guideline

Key Map



0 60
Meters

Data Source
Aerial photograph from U.S. Department of Agriculture.

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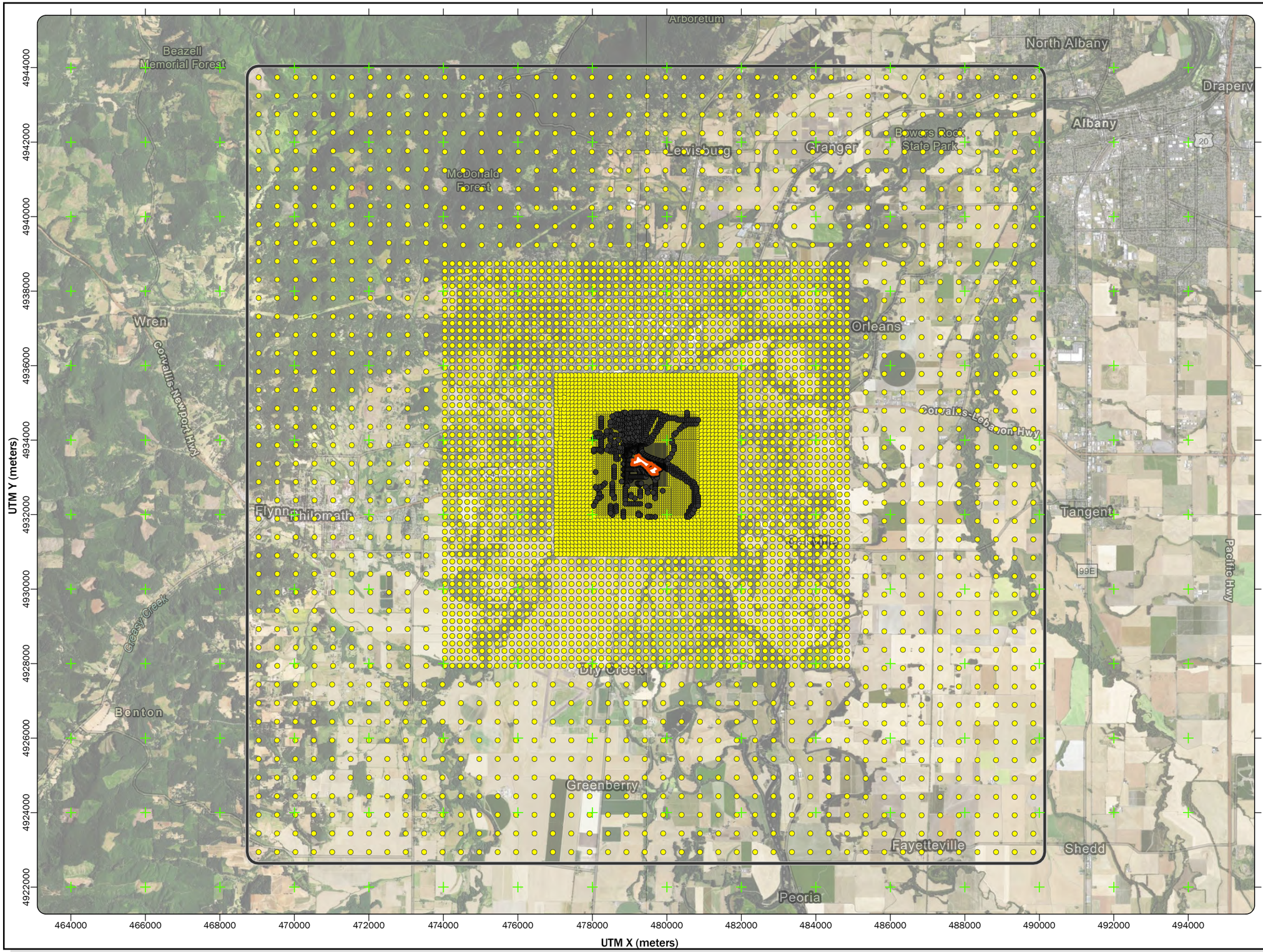
Figure 4-5
Receptor Locations

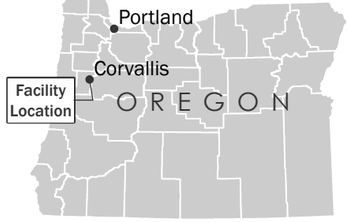
Hollingsworth & Vose
Fiber Company
Corvallis, OR



Legend

- Receptor in Right-of-Way
- Receptor
- Property Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map



0 2,000
Meters

Data Source
Aerial photograph from U.S. Department of Agriculture.

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Figure 4-6
Receptor Locations in the Immediate Area

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Legend

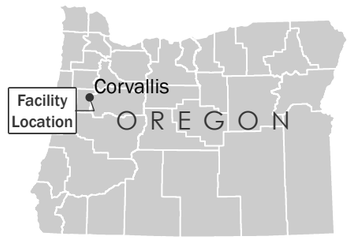
- Property Boundary
- UTM Grid Guideline

Proposed Receptor

RBC Category

- Child
- Residential
- Worker
- Acute Only
- Risk Not Assessed

Key Map



Notes

Land use classifications were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

RBC = risk-based concentration.

0 200
Meters

Data Source

Aerial photograph from U.S. Department of Agriculture.

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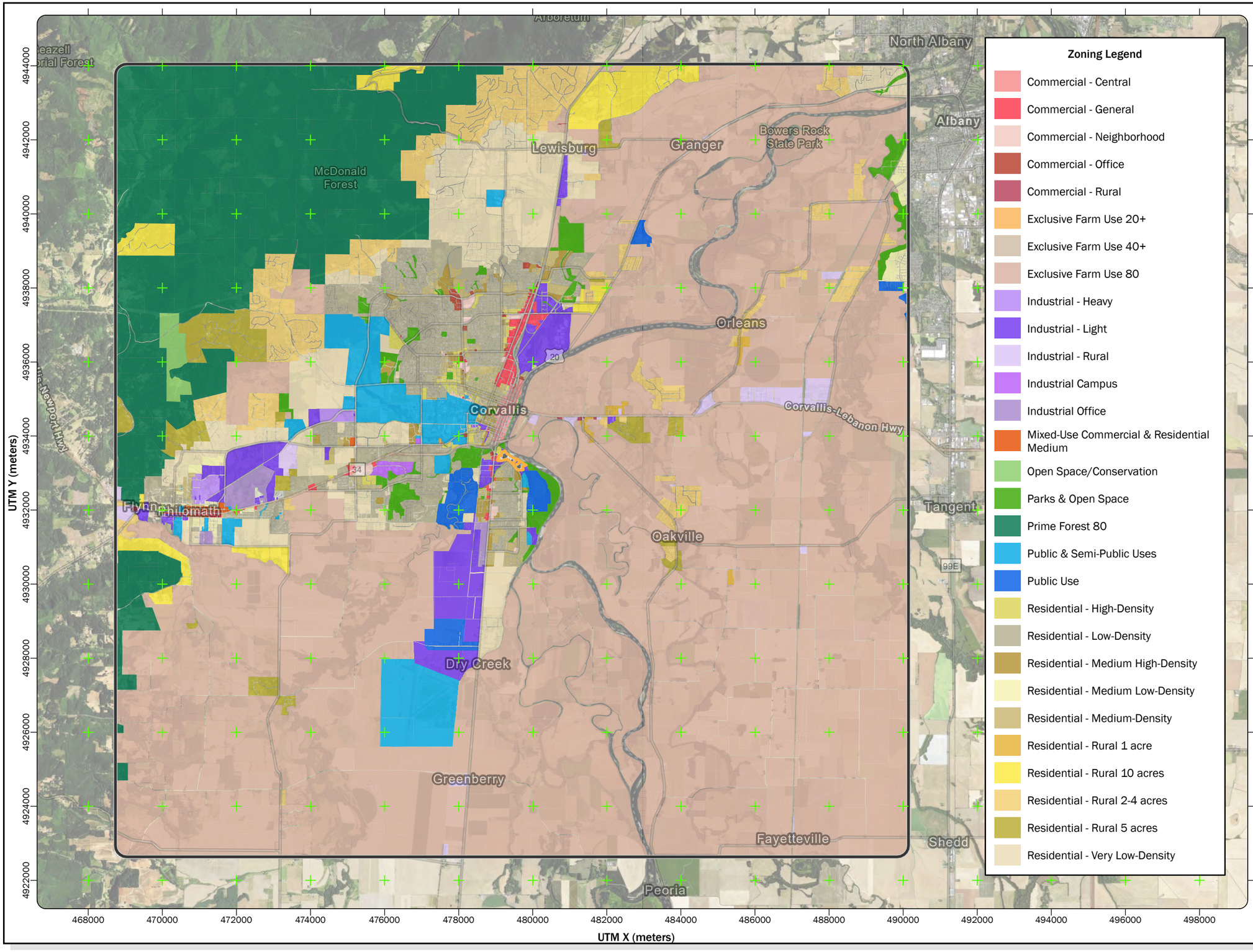
UTM Y (meters): 4934200, 4934000, 4933800, 4933600, 4933400, 4933200, 4933000, 4932800, 4932600, 4932400

UTM X (meters): 478200, 478400, 478600, 478800, 479000, 479200, 479400, 479600, 479800, 480000, 480200, 480400, 480600

Path: X:\1421.01\Projects\HRA\GIS\Pro\M1421_01_001_HRA.aprx\Fig 4-6 Proposed Receptor Locs Immediate Area
Print Date: 2/6/2025
Reviewed By: adevita-mcbride
Produced By: glanavata
Project: M1421.01.001

Figure 4-7
Existing Land Use Zoning Classifications

Hollingsworth & Vose
Fiber Company
Corvallis, OR



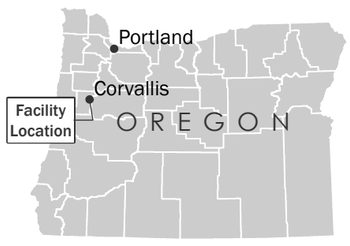
Zoning Legend

- Commercial - Central
- Commercial - General
- Commercial - Neighborhood
- Commercial - Office
- Commercial - Rural
- Exclusive Farm Use 20+
- Exclusive Farm Use 40+
- Exclusive Farm Use 80
- Industrial - Heavy
- Industrial - Light
- Industrial - Rural
- Industrial Campus
- Industrial Office
- Mixed-Use Commercial & Residential Medium
- Open Space/Conservation
- Parks & Open Space
- Prime Forest 80
- Public & Semi-Public Uses
- Public Use
- Residential - High-Density
- Residential - Low-Density
- Residential - Medium High-Density
- Residential - Medium Low-Density
- Residential - Medium-Density
- Residential - Rural 1 acre
- Residential - Rural 10 acres
- Residential - Rural 2-4 acres
- Residential - Rural 5 acres
- Residential - Very Low-Density

Legend

- Property Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map



0 2,000
Meters

Data Sources
Aerial photograph from U.S. Department of Agriculture; zoning from Oregon Department of Land Conservation and Development.

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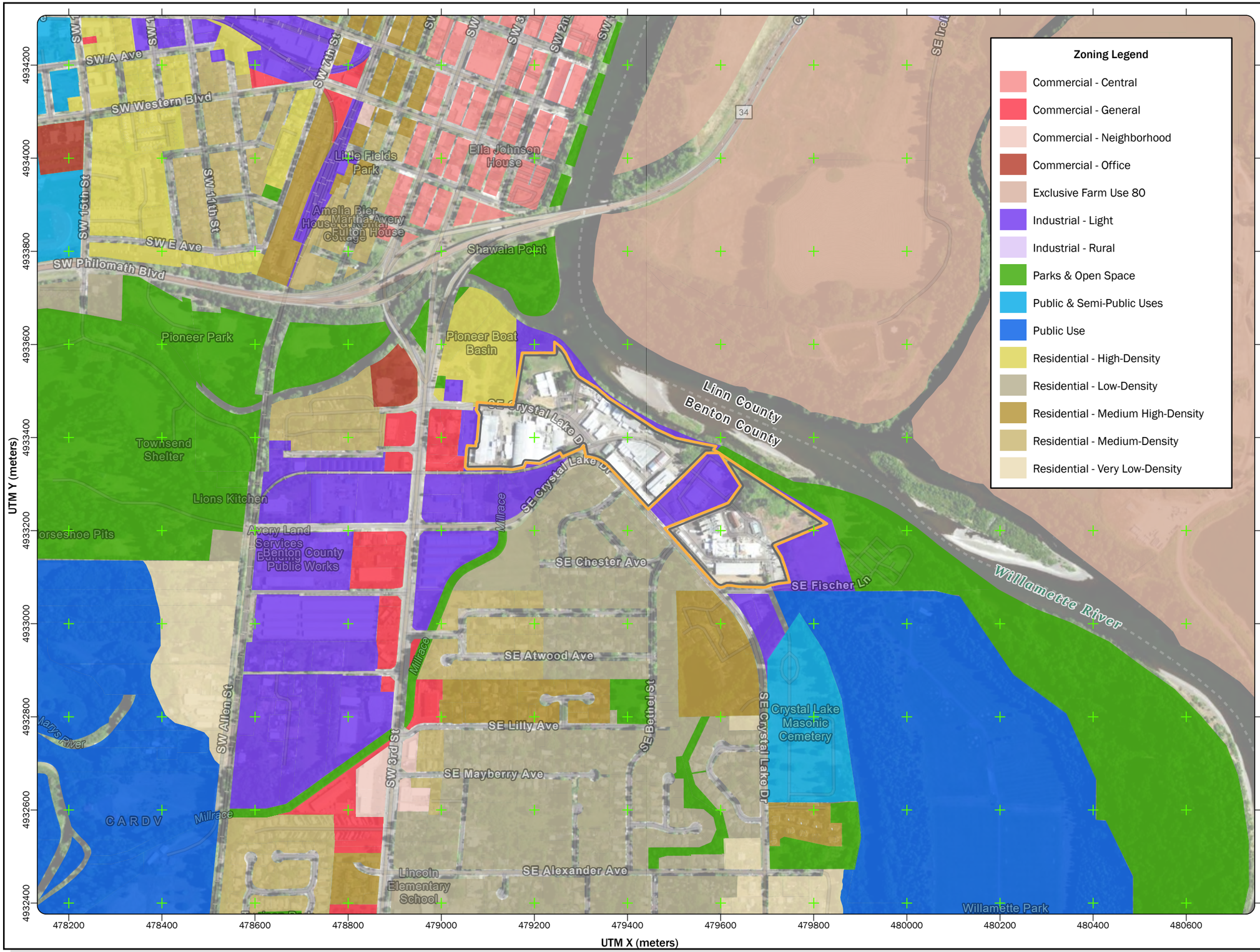
Figure 4-8
Existing Land Use Zoning Classifications in the Immediate Area

Hollingsworth & Vose
Fiber Company
Corvallis, OR



Data Sources
Aerial photograph from U.S. Department of Agriculture; zoning from Oregon Department of Land Conservation and Development.

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Figure 4-9
Exposure Categorization

Hollingsworth & Vose
Fiber Company
Corvallis, OR

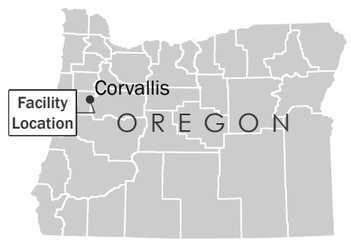
Exposure Classification Legend

- Child
- Residential
- Worker
- Acute Only
- Risk Not Assessed

Legend

- Hospital
- School
- Early Learning Provider
- Property Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map



Notes

Land use classifications were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

0 2,000
Meters

Data Sources

Aerial photograph from U.S. Department of Agriculture; zoning from Oregon Department of Land Conservation and Development; schools from Oregon Health Authority (2015-16 school year); hospitals from U.S. Department of Homeland Security (2022); early learning providers from Oregon Department of Education (2020); tax lot data from Benton and Linn counties (2023).

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UTM Y (meters): 4944000, 4942000, 4940000, 4938000, 4936000, 4934000, 4932000, 4930000, 4928000, 4926000, 4924000, 4922000

UTM X (meters): 468000, 470000, 472000, 474000, 476000, 478000, 480000, 482000, 484000, 486000, 488000, 490000, 492000, 494000, 496000, 498000

Path: X:\1421.01\Projects\HRA\GIS\Pro\M1421_01_001_HRA.aprx\Fig 4-9 Proposed Exposure Categories
Print Date: 2/4/2025
Reviewed By: adevita-mcbride
Produced By: glanvatta
Project: M1421.01.001

Figure 4-10
Exposure Categorization in the Immediate Area

Hollingsworth & Vose
Fiber Company
Corvallis, OR

Key Map

Notes

Land use classifications were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

0 200
Meters

Data Sources

Aerial photograph from U.S. Department of Agriculture; zoning from Oregon Department of Land Conservation and Development; schools from Oregon Health Authority (2015-16 school year); hospitals from U.S. Department of Homeland Security (2022); early learning providers from Oregon Department of Education (2020); tax lot data from Benton and Linn counties (2023).

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Path: X:\1421.01\Projects\HRA\GIS\Pro\M1421_01_001_HRA.aprx\Fig 4-10 Proposed Exposure Categories Immediate Area
Print Date: 2/4/2025
Reviewed By: adevita-mcbride
Produced By: gjaravata
Project: M1421.01.001

Tables

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Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Glass Plant (Excluding Forehearth) Natural Gas Combustion	Rotary Fine									
				Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L3R3/R4	L3R5/R6	L1R3/R4	L1R7/R8	L1R1/R2
			(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [a]	(lb/yr)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			NG_GP	RF	CFU_RF	--	--		--	--	--	--	--
Model ID			--	--	--	--	--		CFU101	CFU102	CFU103	CFU104	CFU105
Production Fraction			--	--	--	0.857 [e]	--		--	--	--	--	--
Apportioning Fraction			--	--	--	--	--		0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	--	0.41	--	--	0.41	5.8E-06	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	0.14	--	--	0.14	2.0E-06	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Chromium VI	18540-29-9	Yes	--	0.14	--	--	0.14	2.0E-06	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	3.43	--	--	3.43	4.9E-05	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	0.68	--	--	0.68	9.8E-06	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07
Mercury	7439-97-6	Yes	--	0.035	--	--	0.035	5.1E-07	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08
Molybdenum trioxide	1313-27-5	No	1.62	--	--	1.39	1.39	2.0E-05	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	--	0.30	--	--	0.30	4.3E-06	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07
Phosphorus	504	No	--	5.66	--	--	5.66	8.1E-05	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	2.26	--	--	1.94	1.94	2.8E-05	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	--	8.43	--	--	8.43	1.2E-04	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	3,141	--	--	2,692	2,692	0.039	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	256	--	--	256	3.7E-03	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	39.8	--	--	39.8	5.7E-04	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Silica, Crystalline	7631-86-9	Yes	--	--	39.4	--	39.4	5.7E-04	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	4.22	--	--	3.62	3.62	5.2E-05	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	--	388	--	--	388	5.6E-03	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04
Acrolein	107-02-8	Yes	2.65	--	--	2.27	2.27	3.3E-05	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	--	77.1	--	--	77.1	1.1E-03	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	6,088	--	--	6,088	0.088	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03
Hexane	110-54-3	Yes	--	379	--	--	379	5.5E-03	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04
Chloromethane	74-87-3	Yes	--	30.0	--	--	30.0	4.3E-04	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05
2-Butanone	78-93-3	Yes	--	14.7	--	--	14.7	2.1E-04	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	183	--	--	183	2.6E-03	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	0.098	--	--	0.084	0.084	1.2E-06	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	1.2E-03	--	--	1.0E-03	1.0E-03	1.5E-08	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	0.29	--	--	0.25	0.25	3.6E-06	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**3,152**	**7,474**	**39.4**	**2,702**	**10,216**	**0.15**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			Rotary Fine									
			L1R9/L10	L1R11/R12	L1R5/L6	L2R7/R8	L2R2/R3	L2R5/R6	L2R4/R9	L4R5/R10	L4R6/R7	L4R8/R9
			(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			--	--	--	--	--	--	--	--	--	--
Model ID			CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112	CFU116	CFU117	CFU118
Production Fraction			--	--	--	--	--	--	--	--	--	--
Apportioning Fraction			0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Chromium VI	18540-29-9	Yes	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07
Mercury	7439-97-6	Yes	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08
Molybdenum trioxide	1313-27-5	No	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07
Phosphorus	504	No	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Silica, Crystalline	7631-86-9	Yes	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04
Acrolein	107-02-8	Yes	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03
Hexane	110-54-3	Yes	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04
Chloromethane	74-87-3	Yes	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05
2-Butanone	78-93-3	Yes	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Flameblown Fiber Production							Glass Melt			
			Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L4F1/F2	L4F3/F4	Fiber Production	CFU Bulking Agent	Total	
			(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [a]	(lb/yr)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(lb/yr) [1]	(lb/yr)	(g/s) [b]
TEU ID			FB	CFU_FB	--	--		--	--	GM	CFU_GM	--	
Model ID			--	--	--	--		CFU114	CFU115	--	--	CFU113	
Production Fraction			--	--	0.143 [e]	--		--	--	--	--	--	
Apportioning Fraction			--	--	--	--		0.50 [2]	0.50 [2]	--	--	--	
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	0.26	--	--	0.26	3.7E-06	1.8E-06	1.8E-06	0.084	--	0.084	1.2E-06
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	0.17	--	--	0.17	2.4E-06	1.2E-06	1.2E-06	0.058	--	0.058	8.4E-07
Cadmium	7440-43-9	Yes	0.047	--	--	0.047	6.8E-07	3.4E-07	3.4E-07	0.070	--	0.070	1.0E-06
Chromium (total)	7440-47-3	No	0.055	--	--	0.055	7.9E-07	3.9E-07	3.9E-07	0.030	--	0.030	4.3E-07
Chromium VI	18540-29-9	Yes	0.055	--	--	0.055	7.9E-07	3.9E-07	3.9E-07	0.030	--	0.030	4.3E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	0.013	--	0.013	1.8E-07
Copper	7440-50-8	Yes	0.78	--	--	0.78	1.1E-05	5.6E-06	5.6E-06	0.46	--	0.46	6.6E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	0.62	--	0.62	9.0E-06
Manganese	7439-96-5	Yes	0.18	--	--	0.18	2.6E-06	1.3E-06	1.3E-06	0.017	--	0.017	2.4E-07
Mercury	7439-97-6	Yes	8.9E-03	--	--	8.9E-03	1.3E-07	6.4E-08	6.4E-08	8.49	--	8.49	1.2E-04
Molybdenum trioxide	1313-27-5	No	--	--	0.23	0.23	3.3E-06	1.7E-06	1.7E-06	--	--	--	--
Nickel	7440-02-0	Yes	0.29	--	--	0.29	4.2E-06	2.1E-06	2.1E-06	--	--	--	--
Phosphorus	504	No	1.46	--	--	1.46	2.1E-05	1.0E-05	1.0E-05	1.82	--	1.82	2.6E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	0.32	0.32	4.6E-06	2.3E-06	2.3E-06	--	--	--	--
Zinc	7440-66-6	No	4.70	--	--	4.70	6.8E-05	3.4E-05	3.4E-05	0.96	--	0.96	1.4E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	449	449	6.5E-03	3.2E-03	3.2E-03	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	0.90	--	0.90	1.3E-05
Fluorides	239	Yes	2.84	--	--	2.84	4.1E-05	2.0E-05	2.0E-05	3.26	--	3.26	4.7E-05
Hydrogen Fluoride	7664-39-3	Yes	38.1	--	--	38.1	5.5E-04	2.7E-04	2.7E-04	0.48	--	0.48	6.8E-06
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	8.20	--	--	8.20	1.2E-04	5.9E-05	5.9E-05	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	--	8.11	--	8.11	1.2E-04	5.8E-05	5.8E-05	--	0.82	0.82	1.2E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	0.60	0.60	8.7E-06	4.3E-06	4.3E-06	--	--	--	--
Acetone	67-64-1	Yes	340	--	--	340	4.9E-03	2.4E-03	2.4E-03	130	--	130	1.9E-03
Acrolein	107-02-8	Yes	--	--	0.38	0.38	5.4E-06	2.7E-06	2.7E-06	--	--	--	--
Benzene	71-43-2	Yes	85.1	--	--	85.1	1.2E-03	6.1E-04	6.1E-04	31.0	--	31.0	4.5E-04
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	13.7	--	13.7	2.0E-04
Cyclohexane	110-82-7	Yes	5.24	--	--	5.24	7.5E-05	3.8E-05	3.8E-05	--	--	--	--
Ethylbenzene	100-41-4	Yes	4.46	--	--	4.46	6.4E-05	3.2E-05	3.2E-05	--	--	--	--
Chloroethane	75-00-3	Yes	2.40	--	--	2.40	3.5E-05	1.7E-05	1.7E-05	--	--	--	--
Formaldehyde	50-00-0	Yes	366	--	--	366	5.3E-03	2.6E-03	2.6E-03	68.6	--	68.6	9.9E-04
Hexane	110-54-3	Yes	493	--	--	493	7.1E-03	3.5E-03	3.5E-03	18.7	--	18.7	2.7E-04
Chloromethane	74-87-3	Yes	32.2	--	--	32.2	4.6E-04	2.3E-04	2.3E-04	--	--	--	--
2-Butanone	78-93-3	Yes	10.8	--	--	10.8	1.6E-04	7.8E-05	7.8E-05	1.71	--	1.71	2.5E-05
Methyl isobutyl ketone	108-10-1	Yes	3.93	--	--	3.93	5.7E-05	2.8E-05	2.8E-05	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	85.9	--	--	85.9	1.2E-03	6.2E-04	6.2E-04	7.76	--	7.76	1.1E-04
Xylenes (mixed isomers)	1330-20-7	Yes	9.22	--	--	9.22	1.3E-04	6.6E-05	6.6E-05	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	0.014	0.014	2.0E-07	1.0E-07	1.0E-07	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	1.7E-04	1.7E-04	2.4E-09	1.2E-09	1.2E-09	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	0.042	0.042	6.1E-07	3.0E-07	3.0E-07	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1,495**	**8.11**	**450**	**1,953**	**0.028**	**0.014**	**0.014**	**288**	**0.82**	**289**	**4.2E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates							
			CFU Super Sack Filling							
			Rotary Fine							
			Total		CFU101	CFU102	CFU105	CFU116	CFU117	CFU118
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RF		--	--	--	--	--	--
Model ID			--		SSF01	SSF02	SSF05	SSF16	SSF17	SSF18
Production Fraction			--		--	--	--	--	--	--
Apportioning Fraction			--		0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	5.8E-04	8.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	2.0E-04	2.9E-09	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10
Chromium VI	18540-29-9	Yes	2.0E-04	2.9E-09	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	4.9E-03	7.1E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	9.7E-04	1.4E-08	2.3E-09	2.3E-09	2.3E-09	2.3E-09	2.3E-09	2.3E-09
Mercury	7439-97-6	Yes	5.1E-05	7.3E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	4.3E-04	6.2E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09
Phosphorus	504	No	8.1E-03	1.2E-07	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.012	1.7E-07	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	3.8E-07	3.8E-07	3.8E-07	3.8E-07	3.8E-07	3.8E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.19**	**2.7E-06**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			CFU Super Sack Filling										
			Rotary Coarse/Ultra Rotary Coarse										
			Total		CFU103	CFU104	CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RC		--	--	--	--	--	--	--	--	--
Model ID			--		SSF03	SSF04	SSF06	SSF07	SSF08	SSF09	SSF10	SSF11	SSF12
Production Fraction			--		--	--	--	--	--	--	--	--	--
Apportioning Fraction			--		0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	6.2E-03	8.9E-08	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.8E-03	5.5E-08	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09
Cadmium	7440-43-9	Yes	3.9E-03	5.7E-08	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09
Chromium (total)	7440-47-3	No	3.7E-03	5.3E-08	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09
Chromium VI	18540-29-9	Yes	3.7E-03	5.3E-08	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09
Cobalt	7440-48-4	Yes	1.6E-04	2.3E-09	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10
Copper	7440-50-8	Yes	0.022	3.1E-07	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08
Lead	7439-92-1	Yes	0.035	5.0E-07	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08
Manganese	7439-96-5	Yes	5.5E-03	7.9E-08	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09
Mercury	7439-97-6	Yes	4.2E-04	6.0E-09	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	8.3E-03	1.2E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Phosphorus	504	No	0.098	1.4E-06	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.062	8.9E-07	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.71	1.0E-05	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.12**	**1.6E-05**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
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yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			CFU Super Sack Filling						Bulking Agent Silos			
			Flameblown				Glass Melt		Total		GP1 Silo (SILO1)	GP2 Silo (SILO2)
			Total		CFU114	CFU115	CFU113					
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_FB		--	--	SSF_GM		--		SILO1	SILO2
Model ID			--		SSF14	SSF15	SSF13		--		SILO1	SILO2
Production Fraction			--		--	--	--		--		--	--
Apportioning Fraction			--		0.50 [2]	0.50 [2]	--		--		0.50 [2]	0.50 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	1.9E-03	2.7E-08	1.4E-08	1.4E-08	4.8E-03	6.9E-08	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.3E-03	1.8E-08	9.1E-09	9.1E-09	3.3E-03	4.8E-08	--	--	--	--
Cadmium	7440-43-9	Yes	3.5E-04	5.0E-09	2.5E-09	2.5E-09	4.0E-03	5.8E-08	--	--	--	--
Chromium (total)	7440-47-3	No	4.1E-04	5.9E-09	2.9E-09	2.9E-09	1.7E-03	2.5E-08	--	--	--	--
Chromium VI	18540-29-9	Yes	4.1E-04	5.9E-09	2.9E-09	2.9E-09	1.7E-03	2.5E-08	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	7.3E-04	1.0E-08	--	--	--	--
Copper	7440-50-8	Yes	5.8E-03	8.3E-08	4.2E-08	4.2E-08	0.026	3.8E-07	--	--	--	--
Lead	7439-92-1	Yes	--	--	--	--	0.036	5.1E-07	--	--	--	--
Manganese	7439-96-5	Yes	1.3E-03	1.9E-08	9.5E-09	9.5E-09	9.6E-04	1.4E-08	--	--	--	--
Mercury	7439-97-6	Yes	6.6E-05	9.5E-10	4.8E-10	4.8E-10	0.49	7.0E-06	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	2.2E-03	3.2E-08	1.6E-08	1.6E-08	--	--	--	--	--	--
Phosphorus	504	No	0.011	1.6E-07	7.8E-08	7.8E-08	0.10	1.5E-06	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.035	5.0E-07	2.5E-07	2.5E-07	0.055	7.9E-07	--	--	--	--
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.021	3.0E-07	1.5E-07	1.5E-07	0.19	2.7E-06	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	1.2E-06	1.2E-06	0.16	2.3E-06	0.020	2.9E-07	1.5E-07	1.5E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.24**	**3.5E-06**	**1.7E-06**	**1.7E-06**	**1.07**	**1.5E-05**	**0.020**	**2.9E-07**	**1.5E-07**	**1.5E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Raw Material Handling				Baling Fugitives				GP1 Fugitives		
			Total		Transport, Storage, Mixing	Furnace Bins	Total		GP1	GP2	Total	Area A	Area B
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]	(g/s) [d]	(g/s) [d]	(g/s) [4]	(g/s) [c]	(g/s) [c]
TEU ID			RMH_BA; RMH_ZN; RMH_F; RMH_S; RMH_D; RMH_L; RMH_N				BALING				--	--	--
Model ID			--		BBBH	--	--		--	--	--	GP1_A	GP1_B
Production Fraction			--		--	--	--		0.649 [f]	0.351 [f]	--	--	--
Apportioning Fraction			--		0.974 [g]	0.026 [g]	--		--	--	--	0.50 [2]	0.50 [2]
METALS													
Aluminum	7429-90-5	Yes	207	3.0E-03	2.9E-03	7.8E-05	--	--	--	--	7.8E-05	3.9E-05	3.9E-05
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	53.8	7.7E-04	7.5E-04	2.0E-05	--	--	--	--	2.0E-05	1.0E-05	1.0E-05
Cadmium	7440-43-9	Yes	3.5E-03	5.0E-08	4.9E-08	1.3E-09	--	--	--	--	1.3E-09	6.6E-10	6.6E-10
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	0.035	5.0E-07	4.9E-07	1.3E-08	--	--	--	--	1.3E-08	6.6E-09	6.6E-09
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	34.0	4.9E-04	4.8E-04	1.3E-05	--	--	--	--	1.3E-05	6.4E-06	6.4E-06
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	14.8	2.1E-04	2.1E-04	5.6E-06	--	--	--	--	5.6E-06	2.8E-06	2.8E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	1,193	0.017	0.011	6.0E-03	0.011	5.6E-03	5.6E-03
Silica, Crystalline	7631-86-9	Yes	523	7.5E-03	7.3E-03	2.0E-04	--	--	--	--	2.0E-04	9.9E-05	9.9E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**833**	**0.012**	**0.012**	**3.2E-04**	**1,193**	**0.017**	**0.011**	**6.0E-03**	**0.011**	**5.7E-03**	**5.7E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			Raw Material Handling - Off Specification		Cooling Towers							
					Production Lines 1 and 2		Production Line 3				Production Line 4	
					Total		Total		Fan A	Fan B	Total	
			(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]
TEU ID			RMH_OFF		CT1_2		CT3		--	--	CT4	
Model ID			BHBH		CT1_2		--		CT3A	CT3B	CT4	
Production Fraction			--		--		--		--	--	--	
Apportioning Fraction			--		--		--		0.50 [2]	0.50 [2]	--	
METALS												
Aluminum	7429-90-5	Yes	5.5E-03	7.9E-08	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.4E-03	2.0E-08	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	Yes	9.1E-08	1.3E-12	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	9.1E-07	1.3E-11	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	8.9E-04	1.3E-08	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	3.9E-04	5.6E-09	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	1.42	2.0E-05	1.58	2.3E-05	1.1E-05	1.1E-05	1.26	1.8E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.014	2.0E-07	--	--	--	--	--	--	--	--
Sulfuric Acid	7664-93-9	Yes	--	--	1.42	2.0E-05	1.58	2.3E-05	1.1E-05	1.1E-05	1.26	1.8E-05
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.022**	**3.2E-07**	**2.84**	**4.1E-05**	**3.16**	**4.5E-05**	**2.3E-05**	**2.3E-05**	**2.52**	**3.6E-05**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates						Total Annual Emission Estimates	
			Shipping and Receiving - Paint Usage		Emergency Generators					
					Line 1		Line 2			
					Total		Total			
			(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr)	(g/s)
TEU ID			**PAINT**		**EGEN1**		**EGEN2**		**--**	
Model ID			**PAINT**		**EGEN1**		**EGEN2**		**--**	
Production Fraction			**--**		**--**		**--**		**--**	
Apportioning Fraction			**--**		**--**		**--**		**--**	
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	207	3.0E-03
Antimony	7440-36-0	Yes	--	--	--	--	--	--	0.35	5.1E-06
Arsenic	7440-38-2	Yes	--	--	3.7E-03	5.4E-08	2.6E-03	3.8E-08	6.4E-03	9.2E-08
Barium	7440-39-3	No	14.7	2.1E-04	--	--	--	--	69.2	9.9E-04
Cadmium	7440-43-9	Yes	--	--	3.5E-03	5.0E-08	2.5E-03	3.6E-08	0.13	1.9E-06
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	0.23	3.3E-06
Chromium VI	18540-29-9	Yes	--	--	2.3E-04	3.4E-09	1.7E-04	2.4E-09	0.23	3.4E-06
Cobalt	7440-48-4	Yes	0.70	1.0E-05	--	--	--	--	0.72	1.0E-05
Copper	7440-50-8	Yes	--	--	9.6E-03	1.4E-07	6.8E-03	9.7E-08	4.74	6.8E-05
Lead	7439-92-1	Yes	--	--	0.019	2.8E-07	0.014	2.0E-07	0.76	1.1E-05
Manganese	7439-96-5	Yes	--	--	7.3E-03	1.0E-07	5.1E-03	7.4E-08	0.89	1.3E-05
Mercury	7439-97-6	Yes	--	--	4.7E-03	6.7E-08	3.3E-03	4.7E-08	9.03	1.3E-04
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	1.62	2.3E-05
Nickel	7440-02-0	Yes	--	--	9.1E-03	1.3E-07	6.4E-03	9.3E-08	0.62	9.0E-06
Phosphorus	504	No	--	--	--	--	--	--	9.16	1.3E-04
Selenium	7782-49-2	Yes	--	--	5.1E-03	7.4E-08	3.6E-03	5.2E-08	8.8E-03	1.3E-07
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	2.26	3.2E-05
Zinc	7440-66-6	No	--	--	--	--	--	--	14.2	2.0E-04
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	34.0	4.9E-04
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	1.87	2.7E-05	1.32	1.9E-05	3,144	0.045
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	0.90	1.3E-05
Fluorides	239	Yes	--	--	--	--	--	--	21.9	3.1E-04
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	294	4.2E-03
Hydrochloric Acid	7647-01-0	Yes	--	--	0.44	6.3E-06	0.31	4.4E-06	0.74	1.1E-05
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	4.26	6.1E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	1,241	0.018
Silica, Crystalline	7631-86-9	Yes	--	--	--	--	--	--	572	8.2E-03
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	4.26	6.1E-05
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	1.83	2.6E-05	1.29	1.9E-05	7.35	1.1E-04
Acetone	67-64-1	Yes	245	3.5E-03	--	--	--	--	1,102	0.016
Acrolein	107-02-8	Yes	--	--	0.079	1.1E-06	0.056	8.0E-07	2.79	4.0E-05
Benzene	71-43-2	Yes	--	--	0.44	6.3E-06	0.31	4.4E-06	194	2.8E-03
1,3-Butadiene	106-99-0	Yes	--	--	0.51	7.3E-06	0.36	5.2E-06	14.6	2.1E-04
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	5.24	7.5E-05
Ethylbenzene	100-41-4	Yes	10.3	1.5E-04	0.026	3.7E-07	0.018	2.6E-07	14.8	2.1E-04
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	2.40	3.5E-05
Formaldehyde	50-00-0	Yes	--	--	4.04	5.8E-05	2.85	4.1E-05	6,530	0.094
Hexane	110-54-3	Yes	--	--	0.063	9.1E-07	0.044	6.4E-07	891	0.013
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	62.1	8.9E-04
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	27.2	3.9E-04
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	3.93	5.7E-05
1,2,4-Trimethylbenzene	95-63-6	Yes	13.1	1.9E-04	--	--	--	--	13.1	1.9E-04
Toluene	108-88-3	Yes	--	--	0.25	3.5E-06	0.17	2.5E-06	277	4.0E-03
Xylenes (mixed isomers)	1330-20-7	Yes	42.1	6.1E-04	0.099	1.4E-06	0.070	1.0E-06	51.5	7.4E-04
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	0	0
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	0.085	1.2E-06	0.060	8.6E-07	0.24	3.5E-06
Benzo[a]pyrene	50-32-8	Yes	--	--	8.4E-05	1.2E-09	5.9E-05	8.5E-10	1.3E-03	1.9E-08
Naphthalene	91-20-3	Yes	--	--	0.046	6.6E-07	0.033	4.7E-07	0.37	5.4E-06
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	78.4	1.1E-03	55.3	8.0E-04	134	1.9E-03
Total TAC Emission Estimate			**326**	**4.7E-03**	**88.2**	**1.3E-03**	**62.2**	**8.9E-04**	**14,971**	**0.22**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.
[2] Emission estimates equally apportioned among the defined model source representations.
[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.
[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Glass Plant (Excluding Forehearth) Natural Gas Combustion	Rotary Coarse									
				Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L3R3/R4	L3R5/R6	L1R3/R4	L1R7/R8	L1R1/R2
			(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [a]	(lb/yr)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			NG_GP	RC	CFU_RC	--	--		--	--	--	--	--
Model ID			--	--	--	--	--		CFU101	CFU102	CFU103	CFU104	CFU105
Production Fraction			--	--	--	0.857 [e]	--		--	--	--	--	--
Apportioning Fraction			--	--	--	--	--		0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	--	0.96	--	--	0.96	1.4E-05	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07
Cadmium	7440-43-9	Yes	--	1.00	--	--	1.00	1.4E-05	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07
Chromium (total)	7440-47-3	No	--	0.93	--	--	0.93	1.3E-05	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Chromium VI	18540-29-9	Yes	--	0.93	--	--	0.93	1.3E-05	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	5.52	--	--	5.52	7.9E-05	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06
Lead	7439-92-1	Yes	--	8.80	--	--	8.80	1.3E-04	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06
Manganese	7439-96-5	Yes	--	0.85	--	--	0.85	1.2E-05	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07
Mercury	7439-97-6	Yes	--	0.055	--	--	0.055	8.0E-07	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08
Molybdenum trioxide	1313-27-5	No	1.62	--	--	1.39	1.39	2.0E-05	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	--	2.11	--	--	2.11	3.0E-05	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06
Phosphorus	504	No	--	25.0	--	--	25.0	3.6E-04	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	2.26	--	--	1.94	1.94	2.8E-05	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	--	15.7	--	--	15.7	2.3E-04	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	3,141	--	--	2,692	2,692	0.039	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	180	--	--	180	2.6E-03	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04
Hydrogen Fluoride	7664-39-3	Yes	--	20.8	--	--	20.8	3.0E-04	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	52.3	--	--	52.3	7.5E-04	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Silica, Crystalline	7631-86-9	Yes	--	--	51.7	--	51.7	7.4E-04	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	4.22	--	--	3.62	3.62	5.2E-05	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	--	360	--	--	360	5.2E-03	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04
Acrolein	107-02-8	Yes	2.65	--	--	2.27	2.27	3.3E-05	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	--	31.9	--	--	31.9	4.6E-04	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	25.7	--	--	25.7	3.7E-04	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	1,888	--	--	1,888	0.027	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03
Hexane	110-54-3	Yes	--	58.1	--	--	58.1	8.4E-04	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	16.6	--	--	16.6	2.4E-04	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	149	--	--	149	2.1E-03	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	61.0	--	--	61.0	8.8E-04	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05
o-Xylene	95-47-6	Yes	--	28.9	--	--	28.9	4.2E-04	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	0.098	--	--	0.084	0.084	1.2E-06	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	1.2E-03	--	--	1.0E-03	1.0E-03	1.5E-08	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	0.29	--	--	0.25	0.25	3.6E-06	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**3,152**	**2,934**	**51.7**	**2,702**	**5,687**	**0.082**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			Rotary Coarse									
			L1R9/L10	L1R11/R12	L1R5/L6	L2R7/R8	L2R2/R3	L2R5/R6	L2R4/R9	L4R5/R10	L4R6/R7	L4R8/R9
			(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			--	--	--	--	--	--	--	--	--	--
Model ID			CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112	CFU116	CFU117	CFU118
Production Fraction			--	--	--	--	--	--	--	--	--	--
Apportioning Fraction			0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07
Cadmium	7440-43-9	Yes	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07
Chromium (total)	7440-47-3	No	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Chromium VI	18540-29-9	Yes	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06
Lead	7439-92-1	Yes	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06
Manganese	7439-96-5	Yes	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07
Mercury	7439-97-6	Yes	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08
Molybdenum trioxide	1313-27-5	No	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06
Phosphorus	504	No	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04
Hydrogen Fluoride	7664-39-3	Yes	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Silica, Crystalline	7631-86-9	Yes	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04
Acrolein	107-02-8	Yes	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03
Hexane	110-54-3	Yes	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04
Xylenes (mixed isomers)	1330-20-7	Yes	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05	5.8E-05
o-Xylene	95-47-6	Yes	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Flameblown Fiber Production							Glass Melt			
			Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L4F1/F2	L4F3/F4	Fiber Production	CFU Bulking Agent	Total	
			(lb/yr) [1]	(lb/yr) [1]	(lb/yr) [a]	(lb/yr)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(lb/yr) [1]	(lb/yr)	(g/s) [b]
TEU ID			FB	CFU_FB	--	--		--	--	GM	CFU_GM	--	
Model ID			--	--	--	--		CFU114	CFU115	--	--	CFU113	
Production Fraction			--	--	0.143 [e]	--		--	--	--	--	--	
Apportioning Fraction			--	--	--	--		0.50 [2]	0.50 [2]	--	--	--	
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	0.26	--	--	0.26	3.7E-06	1.8E-06	1.8E-06	0.084	--	0.084	1.2E-06
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	0.17	--	--	0.17	2.4E-06	1.2E-06	1.2E-06	0.058	--	0.058	8.4E-07
Cadmium	7440-43-9	Yes	0.047	--	--	0.047	6.8E-07	3.4E-07	3.4E-07	0.070	--	0.070	1.0E-06
Chromium (total)	7440-47-3	No	0.055	--	--	0.055	7.9E-07	3.9E-07	3.9E-07	0.030	--	0.030	4.3E-07
Chromium VI	18540-29-9	Yes	0.055	--	--	0.055	7.9E-07	3.9E-07	3.9E-07	0.030	--	0.030	4.3E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	0.013	--	0.013	1.8E-07
Copper	7440-50-8	Yes	0.78	--	--	0.78	1.1E-05	5.6E-06	5.6E-06	0.46	--	0.46	6.6E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	0.62	--	0.62	9.0E-06
Manganese	7439-96-5	Yes	0.18	--	--	0.18	2.6E-06	1.3E-06	1.3E-06	0.017	--	0.017	2.4E-07
Mercury	7439-97-6	Yes	8.9E-03	--	--	8.9E-03	1.3E-07	6.4E-08	6.4E-08	8.49	--	8.49	1.2E-04
Molybdenum trioxide	1313-27-5	No	--	--	0.23	0.23	3.3E-06	1.7E-06	1.7E-06	--	--	--	--
Nickel	7440-02-0	Yes	0.29	--	--	0.29	4.2E-06	2.1E-06	2.1E-06	--	--	--	--
Phosphorus	504	No	1.46	--	--	1.46	2.1E-05	1.0E-05	1.0E-05	1.82	--	1.82	2.6E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	0.32	0.32	4.6E-06	2.3E-06	2.3E-06	--	--	--	--
Zinc	7440-66-6	No	4.70	--	--	4.70	6.8E-05	3.4E-05	3.4E-05	0.96	--	0.96	1.4E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	449	449	6.5E-03	3.2E-03	3.2E-03	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	0.90	--	0.90	1.3E-05
Fluorides	239	Yes	2.84	--	--	2.84	4.1E-05	2.0E-05	2.0E-05	3.26	--	3.26	4.7E-05
Hydrogen Fluoride	7664-39-3	Yes	38.1	--	--	38.1	5.5E-04	2.7E-04	2.7E-04	0.48	--	0.48	6.8E-06
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	8.20	--	--	8.20	1.2E-04	5.9E-05	5.9E-05	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	--	8.11	--	8.11	1.2E-04	5.8E-05	5.8E-05	--	0.82	0.82	1.2E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	0.60	0.60	8.7E-06	4.3E-06	4.3E-06	--	--	--	--
Acetone	67-64-1	Yes	340	--	--	340	4.9E-03	2.4E-03	2.4E-03	130	--	130	1.9E-03
Acrolein	107-02-8	Yes	--	--	0.38	0.38	5.4E-06	2.7E-06	2.7E-06	--	--	--	--
Benzene	71-43-2	Yes	85.1	--	--	85.1	1.2E-03	6.1E-04	6.1E-04	31.0	--	31.0	4.5E-04
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	13.7	--	13.7	2.0E-04
Cyclohexane	110-82-7	Yes	5.24	--	--	5.24	7.5E-05	3.8E-05	3.8E-05	--	--	--	--
Ethylbenzene	100-41-4	Yes	4.46	--	--	4.46	6.4E-05	3.2E-05	3.2E-05	--	--	--	--
Chloroethane	75-00-3	Yes	2.40	--	--	2.40	3.5E-05	1.7E-05	1.7E-05	--	--	--	--
Formaldehyde	50-00-0	Yes	366	--	--	366	5.3E-03	2.6E-03	2.6E-03	68.6	--	68.6	9.9E-04
Hexane	110-54-3	Yes	493	--	--	493	7.1E-03	3.5E-03	3.5E-03	18.7	--	18.7	2.7E-04
Chloromethane	74-87-3	Yes	32.2	--	--	32.2	4.6E-04	2.3E-04	2.3E-04	--	--	--	--
2-Butanone	78-93-3	Yes	10.8	--	--	10.8	1.6E-04	7.8E-05	7.8E-05	1.71	--	1.71	2.5E-05
Methyl isobutyl ketone	108-10-1	Yes	3.93	--	--	3.93	5.7E-05	2.8E-05	2.8E-05	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	85.9	--	--	85.9	1.2E-03	6.2E-04	6.2E-04	7.76	--	7.76	1.1E-04
Xylenes (mixed isomers)	1330-20-7	Yes	9.22	--	--	9.22	1.3E-04	6.6E-05	6.6E-05	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	0.014	0.014	2.0E-07	1.0E-07	1.0E-07	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	1.7E-04	1.7E-04	2.4E-09	1.2E-09	1.2E-09	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	0.042	0.042	6.1E-07	3.0E-07	3.0E-07	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1,495**	**8.11**	**450**	**1,953**	**0.028**	**0.014**	**0.014**	**288**	**0.82**	**289**	**4.2E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates							
			CFU Super Sack Filling							
			Rotary Fine							
			Total		CFU101	CFU102	CFU105	CFU116	CFU117	CFU118
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RF		--	--	--	--	--	--
Model ID			--		SSF01	SSF02	SSF05	SSF16	SSF17	SSF18
Production Fraction			--		--	--	--	--	--	--
Apportioning Fraction			--		0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	5.8E-04	8.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	2.0E-04	2.9E-09	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10
Chromium VI	18540-29-9	Yes	2.0E-04	2.9E-09	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10	4.9E-10
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	4.9E-03	7.1E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	9.7E-04	1.4E-08	2.3E-09	2.3E-09	2.3E-09	2.3E-09	2.3E-09	2.3E-09
Mercury	7439-97-6	Yes	5.1E-05	7.3E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10	1.2E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	4.3E-04	6.2E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.0E-09
Phosphorus	504	No	8.1E-03	1.2E-07	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.012	1.7E-07	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	3.8E-07	3.8E-07	3.8E-07	3.8E-07	3.8E-07	3.8E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.19**	**2.7E-06**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**	**4.5E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			CFU Super Sack Filling										
			Rotary Coarse/Ultra Rotary Coarse										
			Total		CFU103	CFU104	CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RC		--	--	--	--	--	--	--	--	--
Model ID			--		SSF03	SSF04	SSF06	SSF07	SSF08	SSF09	SSF10	SSF11	SSF12
Production Fraction			--		--	--	--	--	--	--	--	--	--
Apportioning Fraction			--		0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	6.2E-03	8.9E-08	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09	9.8E-09
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.8E-03	5.5E-08	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09	6.1E-09
Cadmium	7440-43-9	Yes	3.9E-03	5.7E-08	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09	6.3E-09
Chromium (total)	7440-47-3	No	3.7E-03	5.3E-08	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09
Chromium VI	18540-29-9	Yes	3.7E-03	5.3E-08	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09	5.8E-09
Cobalt	7440-48-4	Yes	1.6E-04	2.3E-09	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10
Copper	7440-50-8	Yes	0.022	3.1E-07	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08	3.5E-08
Lead	7439-92-1	Yes	0.035	5.0E-07	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08	5.5E-08
Manganese	7439-96-5	Yes	5.5E-03	7.9E-08	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09	8.8E-09
Mercury	7439-97-6	Yes	4.2E-04	6.0E-09	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10	6.7E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	8.3E-03	1.2E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Phosphorus	504	No	0.098	1.4E-06	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07	1.6E-07
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.062	8.9E-07	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08	9.8E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.71	1.0E-05	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07	2.6E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.12**	**1.6E-05**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**	**1.8E-06**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			CFU Super Sack Filling						Bulking Agent Silos			
			Flameblown				Glass Melt		Total		GP1 Silo (SILO1)	GP2 Silo (SILO2)
			Total		CFU114	CFU115	CFU113					
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_FB		--	--	SSF_GM		--		SILO1	SILO2
Model ID			--		SSF14	SSF15	SSF13		--		SILO1	SILO2
Production Fraction			--		--	--	--		--		--	--
Apportioning Fraction			--		0.50 [2]	0.50 [2]	--		--		0.50 [2]	0.50 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	1.9E-03	2.7E-08	1.4E-08	1.4E-08	4.8E-03	6.9E-08	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.3E-03	1.8E-08	9.1E-09	9.1E-09	3.3E-03	4.8E-08	--	--	--	--
Cadmium	7440-43-9	Yes	3.5E-04	5.0E-09	2.5E-09	2.5E-09	4.0E-03	5.8E-08	--	--	--	--
Chromium (total)	7440-47-3	No	4.1E-04	5.9E-09	2.9E-09	2.9E-09	1.7E-03	2.5E-08	--	--	--	--
Chromium VI	18540-29-9	Yes	4.1E-04	5.9E-09	2.9E-09	2.9E-09	1.7E-03	2.5E-08	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	7.3E-04	1.0E-08	--	--	--	--
Copper	7440-50-8	Yes	5.8E-03	8.3E-08	4.2E-08	4.2E-08	0.026	3.8E-07	--	--	--	--
Lead	7439-92-1	Yes	--	--	--	--	0.036	5.1E-07	--	--	--	--
Manganese	7439-96-5	Yes	1.3E-03	1.9E-08	9.5E-09	9.5E-09	9.6E-04	1.4E-08	--	--	--	--
Mercury	7439-97-6	Yes	6.6E-05	9.5E-10	4.8E-10	4.8E-10	0.49	7.0E-06	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	2.2E-03	3.2E-08	1.6E-08	1.6E-08	--	--	--	--	--	--
Phosphorus	504	No	0.011	1.6E-07	7.8E-08	7.8E-08	0.10	1.5E-06	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	0.035	5.0E-07	2.5E-07	2.5E-07	0.055	7.9E-07	--	--	--	--
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.021	3.0E-07	1.5E-07	1.5E-07	0.19	2.7E-06	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.16	2.3E-06	1.2E-06	1.2E-06	0.16	2.3E-06	0.020	2.9E-07	1.5E-07	1.5E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.24**	**3.5E-06**	**1.7E-06**	**1.7E-06**	**1.07**	**1.5E-05**	**0.020**	**2.9E-07**	**1.5E-07**	**1.5E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates										
			Raw Material Handling				Baling Fugitives				GP1 Fugitives		
			Total		Transport, Storage, Mixing	Furnace Bins	Total		GP1	GP2	Total	Area A	Area B
			(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]	(g/s) [d]	(g/s) [d]	(g/s) [4]	(g/s) [c]	(g/s) [c]
TEU ID			RMH_BA; RMH_ZN; RMH_F; RMH_S; RMH_D; RMH_L; RMH_N				BALING				--	--	--
Model ID			--		BBBH	--	--		--	--	--	GP1_A	GP1_B
Production Fraction			--		--	--	--		0.649 [f]	0.351 [f]	--	--	--
Apportioning Fraction			--		0.974 [g]	0.026 [g]	--		--	--	--	0.50 [2]	0.50 [2]
METALS													
Aluminum	7429-90-5	Yes	207	3.0E-03	2.9E-03	7.8E-05	--	--	--	--	7.8E-05	3.9E-05	3.9E-05
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	53.8	7.7E-04	7.5E-04	2.0E-05	--	--	--	--	2.0E-05	1.0E-05	1.0E-05
Cadmium	7440-43-9	Yes	3.5E-03	5.0E-08	4.9E-08	1.3E-09	--	--	--	--	1.3E-09	6.6E-10	6.6E-10
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	0.035	5.0E-07	4.9E-07	1.3E-08	--	--	--	--	1.3E-08	6.6E-09	6.6E-09
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	34.0	4.9E-04	4.8E-04	1.3E-05	--	--	--	--	1.3E-05	6.4E-06	6.4E-06
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	14.8	2.1E-04	2.1E-04	5.6E-06	--	--	--	--	5.6E-06	2.8E-06	2.8E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	1,193	0.017	0.011	6.0E-03	0.011	5.6E-03	5.6E-03
Silica, Crystalline	7631-86-9	Yes	523	7.5E-03	7.3E-03	2.0E-04	--	--	--	--	2.0E-04	9.9E-05	9.9E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**833**	**0.012**	**0.012**	**3.2E-04**	**1,193**	**0.017**	**0.011**	**6.0E-03**	**0.011**	**5.7E-03**	**5.7E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates									
			Raw Material Handling - Off Specification		Cooling Towers							
					Production Lines 1 and 2		Production Line 3				Production Line 4	
					Total		Total		Fan A	Fan B	Total	
			(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/yr) [1]	(g/s) [b]
TEU ID			RMH_OFF		CT1_2		CT3		--	--	CT4	
Model ID			BHBH		CT1_2		--		CT3A	CT3B	CT4	
Production Fraction			--		--		--		--	--	--	
Apportioning Fraction			--		--		--		0.50 [2]	0.50 [2]	--	
METALS												
Aluminum	7429-90-5	Yes	5.5E-03	7.9E-08	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.4E-03	2.0E-08	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	Yes	9.1E-08	1.3E-12	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	9.1E-07	1.3E-11	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	8.9E-04	1.3E-08	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	3.9E-04	5.6E-09	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	1.42	2.0E-05	1.58	2.3E-05	1.1E-05	1.1E-05	1.26	1.8E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	0.014	2.0E-07	--	--	--	--	--	--	--	--
Sulfuric Acid	7664-93-9	Yes	--	--	1.42	2.0E-05	1.58	2.3E-05	1.1E-05	1.1E-05	1.26	1.8E-05
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**0.022**	**3.2E-07**	**2.84**	**4.1E-05**	**3.16**	**4.5E-05**	**2.3E-05**	**2.3E-05**	**2.52**	**3.6E-05**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-2
Annual TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates						Total Annual Emission Estimates	
			Shipping and Receiving - Paint Usage		Emergency Generators					
					Line 1		Line 2			
					Total		Total			
			(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr) [1]	(g/s) [b]	(lb/yr)	(g/s)
TEU ID			**PAINT**		**EGEN1**		**EGEN2**		**--**	
Model ID			**PAINT**		**EGEN1**		**EGEN2**		**--**	
Production Fraction			**--**		**--**		**--**		**--**	
Apportioning Fraction			**--**		**--**		**--**		**--**	
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	207	3.0E-03
Antimony	7440-36-0	Yes	--	--	--	--	--	--	0.35	5.1E-06
Arsenic	7440-38-2	Yes	--	--	3.7E-03	5.4E-08	2.6E-03	3.8E-08	6.4E-03	9.2E-08
Barium	7440-39-3	No	14.7	2.1E-04	--	--	--	--	69.7	1.0E-03
Cadmium	7440-43-9	Yes	--	--	3.5E-03	5.0E-08	2.5E-03	3.6E-08	1.13	1.6E-05
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	1.02	1.5E-05
Chromium VI	18540-29-9	Yes	--	--	2.3E-04	3.4E-09	1.7E-04	2.4E-09	1.02	1.5E-05
Cobalt	7440-48-4	Yes	0.70	1.0E-05	--	--	--	--	0.72	1.0E-05
Copper	7440-50-8	Yes	--	--	9.6E-03	1.4E-07	6.8E-03	9.7E-08	6.83	9.8E-05
Lead	7439-92-1	Yes	--	--	0.019	2.8E-07	0.014	2.0E-07	9.56	1.4E-04
Manganese	7439-96-5	Yes	--	--	7.3E-03	1.0E-07	5.1E-03	7.4E-08	1.06	1.5E-05
Mercury	7439-97-6	Yes	--	--	4.7E-03	6.7E-08	3.3E-03	4.7E-08	9.05	1.3E-04
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	1.62	2.3E-05
Nickel	7440-02-0	Yes	--	--	9.1E-03	1.3E-07	6.4E-03	9.3E-08	2.43	3.5E-05
Phosphorus	504	No	--	--	--	--	--	--	28.5	4.1E-04
Selenium	7782-49-2	Yes	--	--	5.1E-03	7.4E-08	3.6E-03	5.2E-08	8.8E-03	1.3E-07
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	2.26	3.2E-05
Zinc	7440-66-6	No	--	--	--	--	--	--	21.5	3.1E-04
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	34.0	4.9E-04
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	1.87	2.7E-05	1.32	1.9E-05	3,144	0.045
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	0.90	1.3E-05
Fluorides	239	Yes	--	--	--	--	--	--	201	2.9E-03
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	59.4	8.5E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	0.44	6.3E-06	0.31	4.4E-06	0.74	1.1E-05
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	4.26	6.1E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	1,254	0.018
Silica, Crystalline	7631-86-9	Yes	--	--	--	--	--	--	584	8.4E-03
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	4.26	6.1E-05
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	1.83	2.6E-05	1.29	1.9E-05	7.35	1.1E-04
Acetone	67-64-1	Yes	245	3.5E-03	--	--	--	--	1,075	0.015
Acrolein	107-02-8	Yes	--	--	0.079	1.1E-06	0.056	8.0E-07	2.79	4.0E-05
Benzene	71-43-2	Yes	--	--	0.44	6.3E-06	0.31	4.4E-06	149	2.1E-03
1,3-Butadiene	106-99-0	Yes	--	--	0.51	7.3E-06	0.36	5.2E-06	14.6	2.1E-04
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	5.24	7.5E-05
Ethylbenzene	100-41-4	Yes	10.3	1.5E-04	0.026	3.7E-07	0.018	2.6E-07	40.5	5.8E-04
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	2.40	3.5E-05
Formaldehyde	50-00-0	Yes	--	--	4.04	5.8E-05	2.85	4.1E-05	2,329	0.034
Hexane	110-54-3	Yes	--	--	0.063	9.1E-07	0.044	6.4E-07	569	8.2E-03
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	32.2	4.6E-04
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	29.1	4.2E-04
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	3.93	5.7E-05
1,2,4-Trimethylbenzene	95-63-6	Yes	13.1	1.9E-04	--	--	--	--	13.1	1.9E-04
Toluene	108-88-3	Yes	--	--	0.25	3.5E-06	0.17	2.5E-06	243	3.5E-03
Xylenes (mixed isomers)	1330-20-7	Yes	42.1	6.1E-04	0.099	1.4E-06	0.070	1.0E-06	112	1.6E-03
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	28.9	4.2E-04
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	0.085	1.2E-06	0.060	8.6E-07	0.24	3.5E-06
Benzo[a]pyrene	50-32-8	Yes	--	--	8.4E-05	1.2E-09	5.9E-05	8.5E-10	1.3E-03	1.9E-08
Naphthalene	91-20-3	Yes	--	--	0.046	6.6E-07	0.033	4.7E-07	0.37	5.4E-06
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	78.4	1.1E-03	55.3	8.0E-04	134	1.9E-03
Total TAC Emission Estimate			**326**	**4.7E-03**	**88.2**	**1.3E-03**	**62.2**	**8.9E-04**	**10,443**	**0.15**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.
yr = year.

[a] Emission rate (lb/yr) = (total annual emissions estimate [lb/yr]) x (production fraction)

[b] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.
[2] Emission estimates equally apportioned among the defined model source representations.
[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.
[4] Sum of Furnace Bin and GP1 Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Glass Plant (Excluding Forehearth) Natural Gas Combustion	Rotary Fine									
				Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L3R3/R4	L3R5/R6	L1R3/R4	L1R7/R8	L1R1/R2
			(lb/day) [1]	(lb/day) [1]	(lb/day) [1]	(lb/day) [a]	(lb/day)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			NG_GP	RF	CFU_RF	--	--		--	--	--	--	--
Model ID			--	--	--	--	--		CFU101	CFU102	CFU103	CFU104	CFU105
Production Fraction			--	--	--	0.857 [e]	--		--	--	--	--	--
Apportioning Fraction			--	--	--	--	--		0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	--	1.1E-03	--	--	1.1E-03	5.8E-06	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	3.9E-04	--	--	3.9E-04	2.0E-06	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Chromium VI	18540-29-9	Yes	--	3.9E-04	--	--	3.9E-04	2.0E-06	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	9.4E-03	--	--	9.4E-03	4.9E-05	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	1.9E-03	--	--	1.9E-03	9.8E-06	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07
Mercury	7439-97-6	Yes	--	9.7E-05	--	--	9.7E-05	5.1E-07	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08
Molybdenum trioxide	1313-27-5	No	4.4E-03	--	--	3.8E-03	3.8E-03	2.0E-05	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	--	8.3E-04	--	--	8.3E-04	4.3E-06	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07
Phosphorus	504	No	--	0.016	--	--	0.016	8.1E-05	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	6.2E-03	--	--	5.3E-03	5.3E-03	2.8E-05	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	--	0.023	--	--	0.023	1.2E-04	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	8.59	--	--	7.36	7.36	0.039	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	0.70	--	--	0.70	3.7E-03	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	0.11	--	--	0.11	5.7E-04	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Silica, Crystalline	7631-86-9	Yes	--	--	0.11	--	0.11	5.7E-04	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	0.012	--	--	9.9E-03	9.9E-03	5.2E-05	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	--	1.06	--	--	1.06	5.6E-03	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04
Acrolein	107-02-8	Yes	7.2E-03	--	--	6.2E-03	6.2E-03	3.3E-05	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	--	0.21	--	--	0.21	1.1E-03	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	16.7	--	--	16.7	0.088	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03
Hexane	110-54-3	Yes	--	1.04	--	--	1.04	5.5E-03	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04
Chloromethane	74-87-3	Yes	--	0.082	--	--	0.082	4.3E-04	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05
2-Butanone	78-93-3	Yes	--	0.040	--	--	0.040	2.1E-04	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	0.50	--	--	0.50	2.6E-03	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	2.7E-04	--	--	2.3E-04	2.3E-04	1.2E-06	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	3.2E-06	--	--	2.8E-06	2.8E-06	1.4E-08	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	8.1E-04	--	--	6.9E-04	6.9E-04	3.6E-06	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**8.62**	**20.5**	**0.11**	**7.39**	**28.0**	**0.15**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			Rotary Fine									
			L1R9/L10	L1R11/R12	L1R5/L6	L2R7/R8	L2R2/R3	L2R5/R6	L2R4/R9	L4R5/R10	L4R6/R7	L4R8/R9
			(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			--	--	--	--	--	--	--	--	--	--
Model ID			CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112	CFU116	CFU117	CFU118
Production Fraction			--	--	--	--	--	--	--	--	--	--
Apportioning Fraction			0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07	3.9E-07
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Chromium VI	18540-29-9	Yes	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07	1.4E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06	3.3E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07	6.5E-07
Mercury	7439-97-6	Yes	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08	3.4E-08
Molybdenum trioxide	1313-27-5	No	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07	2.9E-07
Phosphorus	504	No	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06	5.4E-06
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06	8.1E-06
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04	2.5E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Silica, Crystalline	7631-86-9	Yes	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05	3.8E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04	3.7E-04
Acrolein	107-02-8	Yes	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05	7.4E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03	5.8E-03
Hexane	110-54-3	Yes	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04	3.6E-04
Chloromethane	74-87-3	Yes	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05	2.9E-05
2-Butanone	78-93-3	Yes	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05	1.4E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04	1.8E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**	**9.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Flameblown							Glass Melt			
			Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L4F1/F2	L4F3/F4	Fiber Production	CFU Bulking Agent	Total	
			(lb/day) [1]	(lb/day) [1]	(lb/day) [a]	(lb/day)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(lb/day) [1]	(lb/day)	(g/s) [b]
TEU ID			FB	CFU_FB	--	--		--	--	GM	CFU_GM	--	
Model ID			--	--	--	--		CFU114	CFU115	--	--	CFU113	
Production Fraction			--	--	0.143 [e]	--		--	--	--	--	--	
Apportioning Fraction			--	--	--	--		0.50 [2]	0.50 [2]	--	--	--	
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	7.0E-04	--	--	7.0E-04	3.7E-06	1.8E-06	1.8E-06	2.3E-04	--	2.3E-04	1.2E-06
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	4.7E-04	--	--	4.7E-04	2.4E-06	1.2E-06	1.2E-06	1.6E-04	--	1.6E-04	8.4E-07
Cadmium	7440-43-9	Yes	1.3E-04	--	--	1.3E-04	6.8E-07	3.4E-07	3.4E-07	1.9E-04	--	1.9E-04	1.0E-06
Chromium (total)	7440-47-3	No	1.5E-04	--	--	1.5E-04	7.9E-07	3.9E-07	3.9E-07	8.2E-05	--	8.2E-05	4.3E-07
Chromium VI	18540-29-9	Yes	1.5E-04	--	--	1.5E-04	7.9E-07	3.9E-07	3.9E-07	8.2E-05	--	8.2E-05	4.3E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	3.5E-05	--	3.5E-05	1.8E-07
Copper	7440-50-8	Yes	2.1E-03	--	--	2.1E-03	1.1E-05	5.6E-06	5.6E-06	1.3E-03	--	1.3E-03	6.6E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	1.7E-03	--	1.7E-03	9.0E-06
Manganese	7439-96-5	Yes	4.9E-04	--	--	4.9E-04	2.6E-06	1.3E-06	1.3E-06	4.6E-05	--	4.6E-05	2.4E-07
Mercury	7439-97-6	Yes	2.4E-05	--	--	2.4E-05	1.3E-07	6.4E-08	6.4E-08	0.023	--	0.023	1.2E-04
Molybdenum trioxide	1313-27-5	No	--	--	6.3E-04	6.3E-04	3.3E-06	1.7E-06	1.7E-06	--	--	--	--
Nickel	7440-02-0	Yes	8.1E-04	--	--	8.1E-04	4.2E-06	2.1E-06	2.1E-06	--	--	--	--
Phosphorus	504	No	4.0E-03	--	--	4.0E-03	2.1E-05	1.0E-05	1.0E-05	5.0E-03	--	5.0E-03	2.6E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	8.8E-04	8.8E-04	4.6E-06	2.3E-06	2.3E-06	--	--	--	--
Zinc	7440-66-6	No	0.013	--	--	0.013	6.8E-05	3.4E-05	3.4E-05	2.6E-03	--	2.6E-03	1.4E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	1.23	1.23	6.4E-03	3.2E-03	3.2E-03	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	2.5E-03	--	2.5E-03	1.3E-05
Fluorides	239	Yes	7.8E-03	--	--	7.8E-03	4.1E-05	2.0E-05	2.0E-05	8.9E-03	--	8.9E-03	4.7E-05
Hydrogen Fluoride	7664-39-3	Yes	0.10	--	--	0.10	5.5E-04	2.7E-04	2.7E-04	1.3E-03	--	1.3E-03	6.8E-06
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	0.022	--	--	0.022	1.2E-04	5.9E-05	5.9E-05	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	--	0.022	--	0.022	1.2E-04	5.8E-05	5.8E-05	--	2.2E-03	2.2E-03	1.2E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	1.6E-03	1.6E-03	8.7E-06	4.3E-06	4.3E-06	--	--	--	--
Acetone	67-64-1	Yes	0.93	--	--	0.93	4.9E-03	2.4E-03	2.4E-03	0.36	--	0.36	1.9E-03
Acrolein	107-02-8	Yes	--	--	1.0E-03	1.0E-03	5.4E-06	2.7E-06	2.7E-06	--	--	--	--
Benzene	71-43-2	Yes	0.23	--	--	0.23	1.2E-03	6.1E-04	6.1E-04	0.085	--	0.085	4.5E-04
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	0.038	--	0.038	2.0E-04
Cyclohexane	110-82-7	Yes	0.014	--	--	0.014	7.5E-05	3.8E-05	3.8E-05	--	--	--	--
Ethylbenzene	100-41-4	Yes	0.012	--	--	0.012	6.4E-05	3.2E-05	3.2E-05	--	--	--	--
Chloroethane	75-00-3	Yes	6.6E-03	--	--	6.6E-03	3.5E-05	1.7E-05	1.7E-05	--	--	--	--
Formaldehyde	50-00-0	Yes	1.00	--	--	1.00	5.3E-03	2.6E-03	2.6E-03	0.19	--	0.19	9.9E-04
Hexane	110-54-3	Yes	1.35	--	--	1.35	7.1E-03	3.5E-03	3.5E-03	0.051	--	0.051	2.7E-04
Chloromethane	74-87-3	Yes	0.088	--	--	0.088	4.6E-04	2.3E-04	2.3E-04	--	--	--	--
2-Butanone	78-93-3	Yes	0.030	--	--	0.030	1.6E-04	7.8E-05	7.8E-05	4.7E-03	--	4.7E-03	2.5E-05
Methyl isobutyl ketone	108-10-1	Yes	0.011	--	--	0.011	5.7E-05	2.8E-05	2.8E-05	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	0.24	--	--	0.24	1.2E-03	6.2E-04	6.2E-04	0.021	--	0.021	1.1E-04
Xylenes (mixed isomers)	1330-20-7	Yes	0.025	--	--	0.025	1.3E-04	6.6E-05	6.6E-05	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	3.8E-05	3.8E-05	2.0E-07	1.0E-07	1.0E-07	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	4.6E-07	4.6E-07	2.4E-09	1.2E-09	1.2E-09	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	1.2E-04	1.2E-04	6.0E-07	3.0E-07	3.0E-07	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**4.10**	**0.022**	**1.23**	**5.35**	**0.028**	**0.014**	**0.014**	**0.79**	**2.2E-03**	**0.79**	**4.2E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates							
			CFU Super Sack Filling							
			Rotary Fine							
			Total		CFU101	CFU102	CFU105	CFU116	CFU117	CFU118
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RF		--	--	--	--	--	--
Model ID			--		SSF01	SSF02	SSF05	SSF16	SSF17	SSF18
Production Fraction			--		--	--	--	--	--	--
Apportioning Fraction			--		0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.5E-06	1.8E-08	3.0E-09	3.0E-09	3.0E-09	3.0E-09	3.0E-09	3.0E-09
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	1.2E-06	6.3E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09
Chromium VI	18540-29-9	Yes	1.2E-06	6.3E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	2.9E-05	1.5E-07	2.5E-08	2.5E-08	2.5E-08	2.5E-08	2.5E-08	2.5E-08
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	5.8E-06	3.0E-08	5.0E-09	5.0E-09	5.0E-09	5.0E-09	5.0E-09	5.0E-09
Mercury	7439-97-6	Yes	3.0E-07	1.6E-09	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	2.6E-06	1.3E-08	2.2E-09	2.2E-09	2.2E-09	2.2E-09	2.2E-09	2.2E-09
Phosphorus	504	No	4.8E-05	2.5E-07	4.2E-08	4.2E-08	4.2E-08	4.2E-08	4.2E-08	4.2E-08
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	7.2E-05	3.8E-07	6.3E-08	6.3E-08	6.3E-08	6.3E-08	6.3E-08	6.3E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	8.3E-07	8.3E-07	8.3E-07	8.3E-07	8.3E-07	8.3E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.1E-03**	**5.8E-06**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			CFU Super Sack Filling										
			Rotary Coarse/Ultra Rotary Coarse										
			Total		CFU103	CFU104	CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RC		--	--	--	--	--	--	--	--	--
Model ID			--		SSF03	SSF04	SSF06	SSF07	SSF08	SSF09	SSF10	SSF11	SSF12
Production Fraction			--		--	--	--	--	--	--	--	--	--
Apportioning Fraction			--		0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	3.6E-05	1.9E-07	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	2.2E-05	1.2E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Cadmium	7440-43-9	Yes	2.3E-05	1.2E-07	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08
Chromium (total)	7440-47-3	No	2.2E-05	1.1E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Chromium VI	18540-29-9	Yes	2.2E-05	1.1E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Cobalt	7440-48-4	Yes	9.5E-07	5.0E-09	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10
Copper	7440-50-8	Yes	1.3E-04	6.7E-07	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08
Lead	7439-92-1	Yes	2.1E-04	1.1E-06	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07
Manganese	7439-96-5	Yes	3.3E-05	1.7E-07	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08
Mercury	7439-97-6	Yes	2.5E-06	1.3E-08	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	4.9E-05	2.6E-07	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08
Phosphorus	504	No	5.8E-04	3.1E-06	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	3.6E-04	1.9E-06	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	4.2E-03	2.2E-05	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**6.6E-03**	**3.5E-05**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			CFU Super Sack Filling						Bulking Agent Silos			
			Flameblown				Glass Melt		Total		GP1 Silo (SILO1)	GP2 Silo (SILO2)
			Total		CFU114	CFU115	CFU113					
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_FB		--	--	SSF_GM		--		SILO1	SILO2
Model ID			--		SSF14	SSF15	SSF13		--		SILO1	SILO2
Production Fraction			--		--	--	--		--		--	--
Apportioning Fraction			--		0.50 [2]	0.50 [2]	--		--		0.50 [2]	0.50 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	1.1E-05	5.9E-08	3.0E-08	3.0E-08	2.8E-05	1.5E-07	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	7.5E-06	3.9E-08	2.0E-08	2.0E-08	2.0E-05	1.0E-07	--	--	--	--
Cadmium	7440-43-9	Yes	2.1E-06	1.1E-08	5.4E-09	5.4E-09	2.4E-05	1.2E-07	--	--	--	--
Chromium (total)	7440-47-3	No	2.4E-06	1.3E-08	6.3E-09	6.3E-09	1.0E-05	5.4E-08	--	--	--	--
Chromium VI	18540-29-9	Yes	2.4E-06	1.3E-08	6.3E-09	6.3E-09	1.0E-05	5.4E-08	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	4.3E-06	2.3E-08	--	--	--	--
Copper	7440-50-8	Yes	3.4E-05	1.8E-07	9.0E-08	9.0E-08	1.5E-04	8.1E-07	--	--	--	--
Lead	7439-92-1	Yes	--	--	--	--	2.1E-04	1.1E-06	--	--	--	--
Manganese	7439-96-5	Yes	7.8E-06	4.1E-08	2.1E-08	2.1E-08	5.7E-06	3.0E-08	--	--	--	--
Mercury	7439-97-6	Yes	3.9E-07	2.1E-09	1.0E-09	1.0E-09	2.9E-03	1.5E-05	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	1.3E-05	6.8E-08	3.4E-08	3.4E-08	--	--	--	--	--	--
Phosphorus	504	No	6.4E-05	3.4E-07	1.7E-07	1.7E-07	6.2E-04	3.2E-06	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	2.1E-04	1.1E-06	5.4E-07	5.4E-07	3.3E-04	1.7E-06	--	--	--	--
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	1.2E-04	6.6E-07	3.3E-07	3.3E-07	1.1E-03	5.8E-06	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	2.5E-06	2.5E-06	9.5E-04	5.0E-06	1.5E-04	8.0E-07	4.0E-07	4.0E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.4E-03**	**7.5E-06**	**3.7E-06**	**3.7E-06**	**6.3E-03**	**3.3E-05**	**1.5E-04**	**8.0E-07**	**4.0E-07**	**4.0E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Raw Material Handling				Baling Fugitives				GP1 Fugitives		
			Total		Transport, Storage, Mixing	Furnace Bins	Total		GP1	GP2	Total	Area A	Area B
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]	(g/s) [d]	(g/s) [d]	(g/s) [4]	(g/s) [c]	(g/s) [c]
TEU ID			RMH_BA; RMH_ZN; RMH_F; RMH_S; RMH_D; RMH_L; RMH_N				BALING				--	--	--
Model ID			--		BBBH	--	--		--	--	--	GP1_A	GP1_B
Production Fraction			--		--	--	--		0.649 [f]	0.351 [f]	--	--	--
Apportioning Fraction			--		0.974 [g]	0.026 [g]	--		--	--	--	0.50 [2]	0.50 [2]
METALS													
Aluminum	7429-90-5	Yes	0.68	3.6E-03	3.5E-03	9.4E-05	--	--	--	--	9.4E-05	4.7E-05	4.7E-05
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	0.18	9.3E-04	9.0E-04	2.4E-05	--	--	--	--	2.4E-05	1.2E-05	1.2E-05
Cadmium	7440-43-9	Yes	1.1E-05	6.0E-08	5.9E-08	1.6E-09	--	--	--	--	1.6E-09	7.9E-10	7.9E-10
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	1.1E-04	6.0E-07	5.9E-07	1.6E-08	--	--	--	--	1.6E-08	7.9E-09	7.9E-09
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	0.11	5.9E-04	5.7E-04	1.5E-05	--	--	--	--	1.5E-05	7.7E-06	7.7E-06
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.049	2.6E-04	2.5E-04	6.7E-06	--	--	--	--	6.7E-06	3.4E-06	3.4E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	3.27	0.017	0.011	6.0E-03	0.011	5.6E-03	5.6E-03
Silica, Crystalline	7631-86-9	Yes	1.72	9.0E-03	8.8E-03	2.4E-04	--	--	--	--	2.4E-04	1.2E-04	1.2E-04
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**2.74**	**0.014**	**0.014**	**3.8E-04**	**3.27**	**0.017**	**0.011**	**6.0E-03**	**0.012**	**5.8E-03**	**5.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			Raw Material Handling - Off Specification		Cooling Towers							
					Production Line 1 and 2		Production Line 3				Production Line 4	
					Total		Total		Fan A	Fan B	Total	
			(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]
TEU ID			RMH_OFF		CT1_2		CT3		--	--	CT4	
Model ID			BHBH		CT1_2		--		CT3A	CT3B	CT4	
Production Fraction			--		--		--		--	--	--	
Apportioning Fraction			--		--		--		0.50 [2]	0.50 [2]	--	
METALS												
Aluminum	7429-90-5	Yes	4.6E-04	2.4E-06	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.2E-04	6.2E-07	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	Yes	7.6E-09	4.0E-11	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	7.6E-08	4.0E-10	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	7.4E-05	3.9E-07	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	3.3E-05	1.7E-07	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	3.9E-03	2.0E-05	4.3E-03	2.3E-05	1.1E-05	1.1E-05	3.5E-03	1.8E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	1.1E-03	6.0E-06	--	--	--	--	--	--	--	--
Sulfuric Acid	7664-93-9	Yes	--	--	3.9E-03	2.0E-05	4.3E-03	2.3E-05	1.1E-05	1.1E-05	3.5E-03	1.8E-05
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.8E-03**	**9.6E-06**	**7.8E-03**	**4.1E-05**	**8.6E-03**	**4.5E-05**	**2.3E-05**	**2.3E-05**	**6.9E-03**	**3.6E-05**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-3
Daily TAC Emission Rates—Significant TEUs
Production Scenario 1 (all Rotary Fine)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates						Total Daily Emission Estimates	
			Shipping and Receiving - Paint Usage		Emergency Generators					
					Line 1		Line 2			
					Total		Total			
			(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day)	(g/s)
TEU ID			PAINT		EGEN1		EGEN2		--	
Model ID			PAINT		EGEN1		EGEN2		--	
Production Fraction			--		--		--		--	
Apportioning Fraction			--		--		--		--	
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	0.68	3.6E-03
Antimony	7440-36-0	Yes	--	--	--	--	--	--	1.0E-03	5.3E-06
Arsenic	7440-38-2	Yes	--	--	7.5E-05	3.9E-07	5.3E-05	2.8E-07	1.3E-04	6.7E-07
Barium	7440-39-3	No	0.070	3.7E-04	--	--	--	--	0.25	1.3E-03
Cadmium	7440-43-9	Yes	--	--	7.0E-05	3.7E-07	5.0E-05	2.6E-07	5.0E-04	2.6E-06
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	6.6E-04	3.4E-06
Chromium VI	18540-29-9	Yes	--	--	4.7E-06	2.5E-08	3.3E-06	1.7E-08	6.6E-04	3.5E-06
Cobalt	7440-48-4	Yes	2.3E-03	1.2E-05	--	--	--	--	2.3E-03	1.2E-05
Copper	7440-50-8	Yes	--	--	1.9E-04	1.0E-06	1.4E-04	7.1E-07	0.013	7.1E-05
Lead	7439-92-1	Yes	--	--	3.9E-04	2.0E-06	2.7E-04	1.4E-06	2.9E-03	1.5E-05
Manganese	7439-96-5	Yes	--	--	1.5E-04	7.6E-07	1.0E-04	5.4E-07	2.7E-03	1.4E-05
Mercury	7439-97-6	Yes	--	--	9.4E-05	4.9E-07	6.6E-05	3.5E-07	0.026	1.4E-04
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	4.4E-03	2.3E-05
Nickel	7440-02-0	Yes	--	--	1.8E-04	9.6E-07	1.3E-04	6.8E-07	2.0E-03	1.1E-05
Phosphorus	504	No	--	--	--	--	--	--	0.026	1.4E-04
Selenium	7782-49-2	Yes	--	--	1.0E-04	5.4E-07	7.3E-05	3.8E-07	1.8E-04	9.2E-07
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	6.2E-03	3.2E-05
Zinc	7440-66-6	No	--	--	--	--	--	--	0.040	2.1E-04
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	0.11	5.9E-04
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	0.037	2.0E-04	0.026	1.4E-04	8.66	0.045
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	2.5E-03	1.3E-05
Fluorides	239	Yes	--	--	--	--	--	--	0.071	3.7E-04
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	0.81	4.2E-03
Hydrochloric Acid	7647-01-0	Yes	--	--	8.7E-03	4.6E-05	6.1E-03	3.2E-05	0.015	7.8E-05
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	0.012	6.1E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	3.40	0.018
Silica, Crystalline	7631-86-9	Yes	--	--	--	--	--	--	1.86	9.7E-03
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	0.012	6.1E-05
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	0.037	1.9E-04	0.026	1.4E-04	0.074	3.9E-04
Acetone	67-64-1	Yes	1.08	5.7E-03	--	--	--	--	3.43	0.018
Acrolein	107-02-8	Yes	--	--	1.6E-03	8.3E-06	1.1E-03	5.9E-06	1.0E-02	5.2E-05
Benzene	71-43-2	Yes	--	--	8.7E-03	4.6E-05	6.1E-03	3.2E-05	0.54	2.9E-03
1,3-Butadiene	106-99-0	Yes	--	--	0.010	5.3E-05	7.2E-03	3.8E-05	0.055	2.9E-04
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	0.014	7.5E-05
Ethylbenzene	100-41-4	Yes	0.053	2.8E-04	5.1E-04	2.7E-06	3.6E-04	1.9E-06	0.066	3.4E-04
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	6.6E-03	3.5E-05
Formaldehyde	50-00-0	Yes	--	--	0.081	4.2E-04	0.057	3.0E-04	18.0	0.095
Hexane	110-54-3	Yes	--	--	1.3E-03	6.6E-06	8.9E-04	4.7E-06	2.44	0.013
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	0.17	8.9E-04
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	0.074	3.9E-04
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	0.011	5.7E-05
1,2,4-Trimethylbenzene	95-63-6	Yes	0.042	2.2E-04	--	--	--	--	0.042	2.2E-04
Toluene	108-88-3	Yes	--	--	4.9E-03	2.6E-05	3.5E-03	1.8E-05	0.77	4.0E-03
Xylenes (mixed isomers)	1330-20-7	Yes	0.19	9.8E-04	2.0E-03	1.0E-05	1.4E-03	7.3E-06	0.22	1.1E-03
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	0	0
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	1.7E-03	8.9E-06	1.2E-03	6.3E-06	3.2E-03	1.7E-05
Benzo[a]pyrene	50-32-8	Yes	--	--	1.7E-06	8.8E-09	1.2E-06	6.2E-09	6.1E-06	3.2E-08
Naphthalene	91-20-3	Yes	--	--	9.2E-04	4.8E-06	6.5E-04	3.4E-06	2.4E-03	1.2E-05
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	1.57	8.2E-03	1.11	5.8E-03	2.67	0.014
Total TAC Emission Estimate			**1.43**	**7.5E-03**	**1.76**	**9.3E-03**	**1.24**	**6.5E-03**	**44.6**	**0.23**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	96,000
Rotary Coarse	--
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Glass Plant (Excluding Forehearth) Natural Gas Combustion	Rotary Coarse									
				Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L3R3/R4	L3R5/R6	L1R3/R4	L1R7/R8	L1R1/R2
			(lb/day) [1]	(lb/day) [1]	(lb/day) [1]	(lb/day) [a]	(lb/day)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			NG_GP	RC	CFU_RC	--	--		--	--	--	--	--
Model ID			--	--	--	--	--		CFU101	CFU102	CFU103	CFU104	CFU105
Production Fraction			--	--	--	0.857 [e]	--		--	--	--	--	--
Apportioning Fraction			--	--	--	--	--		0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	--	2.6E-03	--	--	2.6E-03	1.4E-05	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07
Cadmium	7440-43-9	Yes	--	2.7E-03	--	--	2.7E-03	1.4E-05	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07
Chromium (total)	7440-47-3	No	--	2.5E-03	--	--	2.5E-03	1.3E-05	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Chromium VI	18540-29-9	Yes	--	2.5E-03	--	--	2.5E-03	1.3E-05	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	0.015	--	--	0.015	7.9E-05	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06
Lead	7439-92-1	Yes	--	0.024	--	--	0.024	1.3E-04	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06
Manganese	7439-96-5	Yes	--	2.3E-03	--	--	2.3E-03	1.2E-05	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07
Mercury	7439-97-6	Yes	--	1.5E-04	--	--	1.5E-04	8.0E-07	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08
Molybdenum trioxide	1313-27-5	No	4.4E-03	--	--	3.8E-03	3.8E-03	2.0E-05	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	--	5.8E-03	--	--	5.8E-03	3.0E-05	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06
Phosphorus	504	No	--	0.069	--	--	0.069	3.6E-04	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	6.2E-03	--	--	5.3E-03	5.3E-03	2.8E-05	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	--	0.043	--	--	0.043	2.3E-04	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	8.59	--	--	7.36	7.36	0.039	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	0.49	--	--	0.49	2.6E-03	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04
Hydrogen Fluoride	7664-39-3	Yes	--	0.057	--	--	0.057	3.0E-04	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	0.14	--	--	0.14	7.5E-04	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Silica, Crystalline	7631-86-9	Yes	--	--	0.14	--	0.14	7.4E-04	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	0.012	--	--	9.9E-03	9.9E-03	5.2E-05	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	--	0.99	--	--	0.99	5.2E-03	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04
Acrolein	107-02-8	Yes	7.2E-03	--	--	6.2E-03	6.2E-03	3.3E-05	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	--	0.088	--	--	0.088	4.6E-04	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	0.070	--	--	0.070	3.7E-04	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	5.17	--	--	5.17	0.027	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03
Hexane	110-54-3	Yes	--	0.16	--	--	0.16	8.4E-04	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	0.045	--	--	0.045	2.4E-04	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	0.41	--	--	0.41	2.1E-03	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04
Xylenes (mixed isomers)	1330-20-7	Yes	--	0.17	--	--	0.17	8.8E-04	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05
o-Xylene	95-47-6	Yes	--	0.079	--	--	0.079	4.2E-04	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	2.7E-04	--	--	2.3E-04	2.3E-04	1.2E-06	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	3.2E-06	--	--	2.8E-06	2.8E-06	1.4E-08	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	8.1E-04	--	--	6.9E-04	6.9E-04	3.6E-06	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**8.62**	**8.04**	**0.14**	**7.39**	**15.6**	**0.082**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			Rotary Coarse									
			L1R9/L10	L1R11/R12	L1R5/L6	L2R7/R8	L2R2/R3	L2R5/R6	L2R4/R9	L4R5/R10	L4R6/R7	L4R8/R9
			(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			--	--	--	--	--	--	--	--	--	--
Model ID			CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112	CFU116	CFU117	CFU118
Production Fraction			--	--	--	--	--	--	--	--	--	--
Apportioning Fraction			0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]	0.067 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07	9.2E-07
Cadmium	7440-43-9	Yes	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07	9.6E-07
Chromium (total)	7440-47-3	No	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Chromium VI	18540-29-9	Yes	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07	8.9E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06	5.3E-06
Lead	7439-92-1	Yes	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06	8.4E-06
Manganese	7439-96-5	Yes	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07	8.1E-07
Mercury	7439-97-6	Yes	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08	5.3E-08
Molybdenum trioxide	1313-27-5	No	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06	1.3E-06
Nickel	7440-02-0	Yes	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06	2.0E-06
Phosphorus	504	No	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05	2.4E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
Zinc	7440-66-6	No	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05	1.5E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03	2.6E-03
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04	1.7E-04
Hydrogen Fluoride	7664-39-3	Yes	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Silica, Crystalline	7631-86-9	Yes	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05	5.0E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06	3.5E-06
Acetone	67-64-1	Yes	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04	3.5E-04
Acrolein	107-02-8	Yes	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06	2.2E-06
Benzene	71-43-2	Yes	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05	3.1E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05	2.5E-05
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03	1.8E-03
Hexane	110-54-3	Yes	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05	5.6E-05
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05	1.6E-05
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04	1.4E-04
Xylenes (mixed isomers)	1330-20-7	Yes	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05	5.9E-05
o-Xylene	95-47-6	Yes	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05	2.8E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08	8.1E-08
Benzo[a]pyrene	50-32-8	Yes	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10	9.7E-10
Naphthalene	91-20-3	Yes	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07	2.4E-07
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**	**5.5E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Flameblown							Glass Melt			
			Fiber Production	CFU Bulking Agent	Natural Gas Combustion	Total		L4F1/F2	L4F3/F4	Fiber Production	CFU Bulking Agent	Total	
			(lb/day) [1]	(lb/day) [1]	(lb/day) [a]	(lb/day)	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(lb/day) [1]	(lb/day)	(g/s) [b]
TEU ID			FB	CFU_FB	--	--		--	--	GM	CFU_GM	--	
Model ID			--	--	--	--		CFU114	CFU115	--	--	CFU113	
Production Fraction			--	--	0.143 [e]	--		--	--	--	--	--	
Apportioning Fraction			--	--	--	--		0.50 [2]	0.50 [2]	--	--	--	
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	7.0E-04	--	--	7.0E-04	3.7E-06	1.8E-06	1.8E-06	2.3E-04	--	2.3E-04	1.2E-06
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	4.7E-04	--	--	4.7E-04	2.4E-06	1.2E-06	1.2E-06	1.6E-04	--	1.6E-04	8.4E-07
Cadmium	7440-43-9	Yes	1.3E-04	--	--	1.3E-04	6.8E-07	3.4E-07	3.4E-07	1.9E-04	--	1.9E-04	1.0E-06
Chromium (total)	7440-47-3	No	1.5E-04	--	--	1.5E-04	7.9E-07	3.9E-07	3.9E-07	8.2E-05	--	8.2E-05	4.3E-07
Chromium VI	18540-29-9	Yes	1.5E-04	--	--	1.5E-04	7.9E-07	3.9E-07	3.9E-07	8.2E-05	--	8.2E-05	4.3E-07
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	3.5E-05	--	3.5E-05	1.8E-07
Copper	7440-50-8	Yes	2.1E-03	--	--	2.1E-03	1.1E-05	5.6E-06	5.6E-06	1.3E-03	--	1.3E-03	6.6E-06
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	1.7E-03	--	1.7E-03	9.0E-06
Manganese	7439-96-5	Yes	4.9E-04	--	--	4.9E-04	2.6E-06	1.3E-06	1.3E-06	4.6E-05	--	4.6E-05	2.4E-07
Mercury	7439-97-6	Yes	2.4E-05	--	--	2.4E-05	1.3E-07	6.4E-08	6.4E-08	0.023	--	0.023	1.2E-04
Molybdenum trioxide	1313-27-5	No	--	--	6.3E-04	6.3E-04	3.3E-06	1.7E-06	1.7E-06	--	--	--	--
Nickel	7440-02-0	Yes	8.1E-04	--	--	8.1E-04	4.2E-06	2.1E-06	2.1E-06	--	--	--	--
Phosphorus	504	No	4.0E-03	--	--	4.0E-03	2.1E-05	1.0E-05	1.0E-05	5.0E-03	--	5.0E-03	2.6E-05
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	8.8E-04	8.8E-04	4.6E-06	2.3E-06	2.3E-06	--	--	--	--
Zinc	7440-66-6	No	0.013	--	--	0.013	6.8E-05	3.4E-05	3.4E-05	2.6E-03	--	2.6E-03	1.4E-05
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	1.23	1.23	6.4E-03	3.2E-03	3.2E-03	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	2.5E-03	--	2.5E-03	1.3E-05
Fluorides	239	Yes	7.8E-03	--	--	7.8E-03	4.1E-05	2.0E-05	2.0E-05	8.9E-03	--	8.9E-03	4.7E-05
Hydrogen Fluoride	7664-39-3	Yes	0.10	--	--	0.10	5.5E-04	2.7E-04	2.7E-04	1.3E-03	--	1.3E-03	6.8E-06
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	0.022	--	--	0.022	1.2E-04	5.9E-05	5.9E-05	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	--	0.022	--	0.022	1.2E-04	5.8E-05	5.8E-05	--	2.2E-03	2.2E-03	1.2E-05
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	1.6E-03	1.6E-03	8.7E-06	4.3E-06	4.3E-06	--	--	--	--
Acetone	67-64-1	Yes	0.93	--	--	0.93	4.9E-03	2.4E-03	2.4E-03	0.36	--	0.36	1.9E-03
Acrolein	107-02-8	Yes	--	--	1.0E-03	1.0E-03	5.4E-06	2.7E-06	2.7E-06	--	--	--	--
Benzene	71-43-2	Yes	0.23	--	--	0.23	1.2E-03	6.1E-04	6.1E-04	0.085	--	0.085	4.5E-04
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	0.038	--	0.038	2.0E-04
Cyclohexane	110-82-7	Yes	0.014	--	--	0.014	7.5E-05	3.8E-05	3.8E-05	--	--	--	--
Ethylbenzene	100-41-4	Yes	0.012	--	--	0.012	6.4E-05	3.2E-05	3.2E-05	--	--	--	--
Chloroethane	75-00-3	Yes	6.6E-03	--	--	6.6E-03	3.5E-05	1.7E-05	1.7E-05	--	--	--	--
Formaldehyde	50-00-0	Yes	1.00	--	--	1.00	5.3E-03	2.6E-03	2.6E-03	0.19	--	0.19	9.9E-04
Hexane	110-54-3	Yes	1.35	--	--	1.35	7.1E-03	3.5E-03	3.5E-03	0.051	--	0.051	2.7E-04
Chloromethane	74-87-3	Yes	0.088	--	--	0.088	4.6E-04	2.3E-04	2.3E-04	--	--	--	--
2-Butanone	78-93-3	Yes	0.030	--	--	0.030	1.6E-04	7.8E-05	7.8E-05	4.7E-03	--	4.7E-03	2.5E-05
Methyl isobutyl ketone	108-10-1	Yes	0.011	--	--	0.011	5.7E-05	2.8E-05	2.8E-05	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	0.24	--	--	0.24	1.2E-03	6.2E-04	6.2E-04	0.021	--	0.021	1.1E-04
Xylenes (mixed isomers)	1330-20-7	Yes	0.025	--	--	0.025	1.3E-04	6.6E-05	6.6E-05	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	3.8E-05	3.8E-05	2.0E-07	1.0E-07	1.0E-07	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	4.6E-07	4.6E-07	2.4E-09	1.2E-09	1.2E-09	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	1.2E-04	1.2E-04	6.0E-07	3.0E-07	3.0E-07	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**4.10**	**0.022**	**1.23**	**5.35**	**0.028**	**0.014**	**0.014**	**0.79**	**2.2E-03**	**0.79**	**4.2E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.
[2] Emission estimates equally apportioned among the defined model source representations.
[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.
[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates							
			CFU Super Sack Filling							
			Rotary Fine							
			Total		CFU101	CFU102	CFU105	CFU116	CFU117	CFU118
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RF		--	--	--	--	--	--
Model ID			--		SSF01	SSF02	SSF05	SSF16	SSF17	SSF18
Production Fraction			--		--	--	--	--	--	--
Apportioning Fraction			--		0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]	0.167 [2]
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	3.5E-06	1.8E-08	3.0E-09	3.0E-09	3.0E-09	3.0E-09	3.0E-09	3.0E-09
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	1.2E-06	6.3E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09
Chromium VI	18540-29-9	Yes	1.2E-06	6.3E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09	1.1E-09
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	2.9E-05	1.5E-07	2.5E-08	2.5E-08	2.5E-08	2.5E-08	2.5E-08	2.5E-08
Lead	7439-92-1	Yes	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	5.8E-06	3.0E-08	5.0E-09	5.0E-09	5.0E-09	5.0E-09	5.0E-09	5.0E-09
Mercury	7439-97-6	Yes	3.0E-07	1.6E-09	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10	2.6E-10
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	2.6E-06	1.3E-08	2.2E-09	2.2E-09	2.2E-09	2.2E-09	2.2E-09	2.2E-09
Phosphorus	504	No	4.8E-05	2.5E-07	4.2E-08	4.2E-08	4.2E-08	4.2E-08	4.2E-08	4.2E-08
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	7.2E-05	3.8E-07	6.3E-08	6.3E-08	6.3E-08	6.3E-08	6.3E-08	6.3E-08
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--
Fluorides	239	Yes	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	8.3E-07	8.3E-07	8.3E-07	8.3E-07	8.3E-07	8.3E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.1E-03**	**5.8E-06**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**	**9.7E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			CFU Super Sack Filling										
			Rotary Coarse/Ultra Rotary Coarse										
			Total		CFU103	CFU104	CFU106	CFU107	CFU108	CFU109	CFU110	CFU111	CFU112
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_RC		--	--	--	--	--	--	--	--	--
Model ID			--		SSF03	SSF04	SSF06	SSF07	SSF08	SSF09	SSF10	SSF11	SSF12
Production Fraction			--		--	--	--	--	--	--	--	--	--
Apportioning Fraction			--		0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]	0.111 [2]
METALS													
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	3.6E-05	1.9E-07	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08	2.1E-08
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	2.2E-05	1.2E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Cadmium	7440-43-9	Yes	2.3E-05	1.2E-07	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08	1.4E-08
Chromium (total)	7440-47-3	No	2.2E-05	1.1E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Chromium VI	18540-29-9	Yes	2.2E-05	1.1E-07	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08	1.3E-08
Cobalt	7440-48-4	Yes	9.5E-07	5.0E-09	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10	5.5E-10
Copper	7440-50-8	Yes	1.3E-04	6.7E-07	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08	7.5E-08
Lead	7439-92-1	Yes	2.1E-04	1.1E-06	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07
Manganese	7439-96-5	Yes	3.3E-05	1.7E-07	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08	1.9E-08
Mercury	7439-97-6	Yes	2.5E-06	1.3E-08	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09	1.4E-09
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	4.9E-05	2.6E-07	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08	2.9E-08
Phosphorus	504	No	5.8E-04	3.1E-06	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07	3.4E-07
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	3.6E-04	1.9E-06	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07	2.1E-07
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	4.2E-03	2.2E-05	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06	2.4E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07	5.5E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**6.6E-03**	**3.5E-05**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**	**3.9E-06**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			CFU Super Sack Filling						Bulking Agent Silos			
			Flameblown				Glass Melt		Total		GP1 Silo (SILO1)	GP2 Silo (SILO2)
			Total		CFU114	CFU115	CFU113					
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]
TEU ID			SSF_FB		--	--	SSF_GM		--		SILO1	SILO2
Model ID			--		SSF14	SSF15	SSF13		--		SILO1	SILO2
Production Fraction			--		--	--	--		--		--	--
Apportioning Fraction			--		0.50 [2]	0.50 [2]	--		--		0.50 [2]	0.50 [2]
METALS												
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	1.1E-05	5.9E-08	3.0E-08	3.0E-08	2.8E-05	1.5E-07	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	7.5E-06	3.9E-08	2.0E-08	2.0E-08	2.0E-05	1.0E-07	--	--	--	--
Cadmium	7440-43-9	Yes	2.1E-06	1.1E-08	5.4E-09	5.4E-09	2.4E-05	1.2E-07	--	--	--	--
Chromium (total)	7440-47-3	No	2.4E-06	1.3E-08	6.3E-09	6.3E-09	1.0E-05	5.4E-08	--	--	--	--
Chromium VI	18540-29-9	Yes	2.4E-06	1.3E-08	6.3E-09	6.3E-09	1.0E-05	5.4E-08	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	4.3E-06	2.3E-08	--	--	--	--
Copper	7440-50-8	Yes	3.4E-05	1.8E-07	9.0E-08	9.0E-08	1.5E-04	8.1E-07	--	--	--	--
Lead	7439-92-1	Yes	--	--	--	--	2.1E-04	1.1E-06	--	--	--	--
Manganese	7439-96-5	Yes	7.8E-06	4.1E-08	2.1E-08	2.1E-08	5.7E-06	3.0E-08	--	--	--	--
Mercury	7439-97-6	Yes	3.9E-07	2.1E-09	1.0E-09	1.0E-09	2.9E-03	1.5E-05	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	1.3E-05	6.8E-08	3.4E-08	3.4E-08	--	--	--	--	--	--
Phosphorus	504	No	6.4E-05	3.4E-07	1.7E-07	1.7E-07	6.2E-04	3.2E-06	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	2.1E-04	1.1E-06	5.4E-07	5.4E-07	3.3E-04	1.7E-06	--	--	--	--
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	1.2E-04	6.6E-07	3.3E-07	3.3E-07	1.1E-03	5.8E-06	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	9.5E-04	5.0E-06	2.5E-06	2.5E-06	9.5E-04	5.0E-06	1.5E-04	8.0E-07	4.0E-07	4.0E-07
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.4E-03**	**7.5E-06**	**3.7E-06**	**3.7E-06**	**6.3E-03**	**3.3E-05**	**1.5E-04**	**8.0E-07**	**4.0E-07**	**4.0E-07**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates										
			Raw Material Handling				Baling Fugitives				GP1 Fugitives		
			Total		Transport, Storage, Mixing	Furnace Bins	Total		GP1	GP2	Total	Area A	Area B
			(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]	(g/s) [d]	(g/s) [d]	(g/s) [4]	(g/s) [c]	(g/s) [c]
TEU ID			RMH_BA; RMH_ZN; RMH_F; RMH_S; RMH_D; RMH_L; RMH_N				BALING				--	--	--
Model ID			--		BBBH	--	--		--	--	--	GP1_A	GP1_B
Production Fraction			--		--	--	--		0.649 [f]	0.351 [f]	--	--	--
Apportioning Fraction			--		0.974 [g]	0.026 [g]	--		--	--	--	0.50 [2]	0.50 [2]
METALS													
Aluminum	7429-90-5	Yes	0.68	3.6E-03	3.5E-03	9.4E-05	--	--	--	--	9.4E-05	4.7E-05	4.7E-05
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	0.18	9.3E-04	9.0E-04	2.4E-05	--	--	--	--	2.4E-05	1.2E-05	1.2E-05
Cadmium	7440-43-9	Yes	1.1E-05	6.0E-08	5.9E-08	1.6E-09	--	--	--	--	1.6E-09	7.9E-10	7.9E-10
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	1.1E-04	6.0E-07	5.9E-07	1.6E-08	--	--	--	--	1.6E-08	7.9E-09	7.9E-09
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	0.11	5.9E-04	5.7E-04	1.5E-05	--	--	--	--	1.5E-05	7.7E-06	7.7E-06
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	0.049	2.6E-04	2.5E-04	6.7E-06	--	--	--	--	6.7E-06	3.4E-06	3.4E-06
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Glasswool Fibers	352	No	--	--	--	--	3.27	0.017	0.011	6.0E-03	0.011	5.6E-03	5.6E-03
Silica, Crystalline	7631-86-9	Yes	1.72	9.0E-03	8.8E-03	2.4E-04	--	--	--	--	2.4E-04	1.2E-04	1.2E-04
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	--	--	--	--	--
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**2.74**	**0.014**	**0.014**	**3.8E-04**	**3.27**	**0.017**	**0.011**	**6.0E-03**	**0.012**	**5.8E-03**	**5.8E-03**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates									
			Raw Material Handling - Off Specification		Cooling Towers							
					Production Line 1 and 2		Production Line 3				Production Line 4	
					Total		Total		Fan A	Fan B	Total	
			(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(g/s) [c]	(g/s) [c]	(lb/day) [1]	(g/s) [b]
TEU ID			RMH_OFF		CT1_2		CT3		--	--	CT4	
Model ID			BHBH		CT1_2		--		CT3A	CT3B	CT4	
Production Fraction			--		--		--		--	--	--	
Apportioning Fraction			--		--		--		0.50 [2]	0.50 [2]	--	
METALS												
Aluminum	7429-90-5	Yes	4.6E-04	2.4E-06	--	--	--	--	--	--	--	--
Antimony	7440-36-0	Yes	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	No	1.2E-04	6.2E-07	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	Yes	7.6E-09	4.0E-11	--	--	--	--	--	--	--	--
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	Yes	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	Yes	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	Yes	7.6E-08	4.0E-10	--	--	--	--	--	--	--	--
Manganese	7439-96-5	Yes	--	--	--	--	--	--	--	--	--	--
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	--	--	--	--
Nickel	7440-02-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphorus	504	No	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	Yes	--	--	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	No	--	--	--	--	--	--	--	--	--	--
Zinc Oxide	1314-13-2	No	7.4E-05	3.9E-07	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS												
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	--	--	--	--
Fluorides	239	Yes	3.3E-05	1.7E-07	--	--	--	--	--	--	--	--
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--
Phosphoric Acid	7664-38-2	Yes	--	--	3.9E-03	2.0E-05	4.3E-03	2.3E-05	1.1E-05	1.1E-05	3.5E-03	1.8E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	--	--	--	--
Silica, Crystalline	7631-86-9	Yes	1.1E-03	6.0E-06	--	--	--	--	--	--	--	--
Sulfuric Acid	7664-93-9	Yes	--	--	3.9E-03	2.0E-05	4.3E-03	2.3E-05	1.1E-05	1.1E-05	3.5E-03	1.8E-05
ORGANIC COMPOUNDS												
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	Yes	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	--	--	--	--
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--
Xylenes (mixed isomers)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)												
PAHs	401	Yes	--	--	--	--	--	--	--	--	--	--
Benzo[a]pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--
Diesel Particulate Matter (DPM)												
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--
Total TAC Emission Estimate			**1.8E-03**	**9.6E-06**	**7.8E-03**	**4.1E-05**	**8.6E-03**	**4.5E-05**	**2.3E-05**	**2.3E-05**	**6.9E-03**	**3.6E-05**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.

[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-4
Daily TAC Emission Rates—Significant TEUs
Production Scenario 2 (all Rotary Coarse)
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates						Total Daily Emission Estimates	
			Shipping and Receiving - Paint Usage		Emergency Generators					
					Line 1		Line 2			
					Total		Total			
			(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day) [1]	(g/s) [b]	(lb/day)	(g/s)
TEU ID			PAINT		EGEN1		EGEN2		--	
Model ID			PAINT		EGEN1		EGEN2		--	
Production Fraction			--		--		--		--	
Apportioning Fraction			--		--		--		--	
METALS										
Aluminum	7429-90-5	Yes	--	--	--	--	--	--	0.68	3.6E-03
Antimony	7440-36-0	Yes	--	--	--	--	--	--	1.0E-03	5.3E-06
Arsenic	7440-38-2	Yes	--	--	7.5E-05	3.9E-07	5.3E-05	2.8E-07	1.3E-04	6.7E-07
Barium	7440-39-3	No	0.070	3.7E-04	--	--	--	--	0.25	1.3E-03
Cadmium	7440-43-9	Yes	--	--	7.0E-05	3.7E-07	5.0E-05	2.6E-07	3.2E-03	1.7E-05
Chromium (total)	7440-47-3	No	--	--	--	--	--	--	2.8E-03	1.5E-05
Chromium VI	18540-29-9	Yes	--	--	4.7E-06	2.5E-08	3.3E-06	1.7E-08	2.8E-03	1.5E-05
Cobalt	7440-48-4	Yes	2.3E-03	1.2E-05	--	--	--	--	2.3E-03	1.2E-05
Copper	7440-50-8	Yes	--	--	1.9E-04	1.0E-06	1.4E-04	7.1E-07	0.019	1.0E-04
Lead	7439-92-1	Yes	--	--	3.9E-04	2.0E-06	2.7E-04	1.4E-06	0.027	1.4E-04
Manganese	7439-96-5	Yes	--	--	1.5E-04	7.6E-07	1.0E-04	5.4E-07	3.1E-03	1.7E-05
Mercury	7439-97-6	Yes	--	--	9.4E-05	4.9E-07	6.6E-05	3.5E-07	0.026	1.4E-04
Molybdenum trioxide	1313-27-5	No	--	--	--	--	--	--	4.4E-03	2.3E-05
Nickel	7440-02-0	Yes	--	--	1.8E-04	9.6E-07	1.3E-04	6.8E-07	7.0E-03	3.7E-05
Phosphorus	504	No	--	--	--	--	--	--	0.079	4.1E-04
Selenium	7782-49-2	Yes	--	--	1.0E-04	5.4E-07	7.3E-05	3.8E-07	1.8E-04	9.2E-07
Vanadium	7440-62-2	Yes	--	--	--	--	--	--	6.2E-03	3.2E-05
Zinc	7440-66-6	No	--	--	--	--	--	--	0.059	3.1E-04
Zinc Oxide	1314-13-2	No	--	--	--	--	--	--	0.11	5.9E-04
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	0.037	2.0E-04	0.026	1.4E-04	8.66	0.045
Carbon disulfide	75-15-0	Yes	--	--	--	--	--	--	2.5E-03	1.3E-05
Fluorides	239	Yes	--	--	--	--	--	--	0.56	3.0E-03
Hydrogen Fluoride	7664-39-3	Yes	--	--	--	--	--	--	0.16	8.6E-04
Hydrochloric Acid	7647-01-0	Yes	--	--	8.7E-03	4.6E-05	6.1E-03	3.2E-05	0.015	7.8E-05
Phosphoric Acid	7664-38-2	Yes	--	--	--	--	--	--	0.012	6.1E-05
Glasswool Fibers	352	No	--	--	--	--	--	--	3.44	0.018
Silica, Crystalline	7631-86-9	Yes	--	--	--	--	--	--	1.89	9.9E-03
Sulfuric Acid	7664-93-9	Yes	--	--	--	--	--	--	0.012	6.1E-05
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	0.037	1.9E-04	0.026	1.4E-04	0.074	3.9E-04
Acetone	67-64-1	Yes	1.08	5.7E-03	--	--	--	--	3.35	0.018
Acrolein	107-02-8	Yes	--	--	1.6E-03	8.3E-06	1.1E-03	5.9E-06	1.0E-02	5.2E-05
Benzene	71-43-2	Yes	--	--	8.7E-03	4.6E-05	6.1E-03	3.2E-05	0.42	2.2E-03
1,3-Butadiene	106-99-0	Yes	--	--	0.010	5.3E-05	7.2E-03	3.8E-05	0.055	2.9E-04
Cyclohexane	110-82-7	Yes	--	--	--	--	--	--	0.014	7.5E-05
Ethylbenzene	100-41-4	Yes	0.053	2.8E-04	5.1E-04	2.7E-06	3.6E-04	1.9E-06	0.14	7.1E-04
Chloroethane	75-00-3	Yes	--	--	--	--	--	--	6.6E-03	3.5E-05
Formaldehyde	50-00-0	Yes	--	--	0.081	4.2E-04	0.057	3.0E-04	6.50	0.034
Hexane	110-54-3	Yes	--	--	1.3E-03	6.6E-06	8.9E-04	4.7E-06	1.56	8.2E-03
Chloromethane	74-87-3	Yes	--	--	--	--	--	--	0.088	4.6E-04
2-Butanone	78-93-3	Yes	--	--	--	--	--	--	0.080	4.2E-04
Methyl isobutyl ketone	108-10-1	Yes	--	--	--	--	--	--	0.011	5.7E-05
1,2,4-Trimethylbenzene	95-63-6	Yes	0.042	2.2E-04	--	--	--	--	0.042	2.2E-04
Toluene	108-88-3	Yes	--	--	4.9E-03	2.6E-05	3.5E-03	1.8E-05	0.67	3.5E-03
Xylenes (mixed isomers)	1330-20-7	Yes	0.19	9.8E-04	2.0E-03	1.0E-05	1.4E-03	7.3E-06	0.38	2.0E-03
o-Xylene	95-47-6	Yes	--	--	--	--	--	--	0.079	4.2E-04
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
PAHs	401	Yes	--	--	1.7E-03	8.9E-06	1.2E-03	6.3E-06	3.2E-03	1.7E-05
Benzo[a]pyrene	50-32-8	Yes	--	--	1.7E-06	8.8E-09	1.2E-06	6.2E-09	6.1E-06	3.2E-08
Naphthalene	91-20-3	Yes	--	--	9.2E-04	4.8E-06	6.5E-04	3.4E-06	2.4E-03	1.2E-05
Diesel Particulate Matter (DPM)										
DPM	200	Yes	--	--	1.57	8.2E-03	1.11	5.8E-03	2.67	0.014
Total TAC Emission Estimate			**1.43**	**7.5E-03**	**1.76**	**9.3E-03**	**1.24**	**6.5E-03**	**32.2**	**0.17**

Notes

g = gram.
GP1 = Glass Plant 1.
GP2 = Glass Plant 2.
hr = hour.
lb= pound.
PM = particulate matter.
RBC = risk-based concentration.
RMH = raw material handling.
s = second.
TAC = toxic air contaminant.
TEU = toxic emission unit.

[a] Emission rate (lb/day) = (total daily emissions estimate [lb/day]) x (production fraction)

[b] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[c] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

[d] Emission rate (g/s) = (total emission rate [g/s]) x (production fraction)

[e] Production fraction = (fiber type natural gas usage [scf/hr]) / (total fiberizer natural gas usage [scf/hr])

Fiber Type	Natural Gas Usage (scf/hr)
Rotary Fine	--
Rotary Coarse	96,000
Flameblown	16,000
Total	**112,000**

[f] Production fraction = (glass plant fiber production [tons/yr]) / (total fiber production [tons/yr])

Glass Plant	Fiber Production (tons/yr)
GP1	19,359
GP2	10,468
Total	**29,827**

[g] Apportioning fraction = (PM emission factor [lb/ton]) / (total RMH PM emission factor [lb/ton])

Transport, storage, mixing PM emission factor (lb/ton) =	0.037	(3)
Furnace bin PM emission factor (lb/ton) =	0.001	(3)
Total RMH PM emission factor (lb/ton) =	0.038	(3)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.
[2] Emission estimates equally apportioned among the defined model source representations.
[3] Emission factors obtained from the Standard ACDP 02-2173-ST-01 dated November 23, 2022.
[4] Sum of Furnace Bin and Baling emission estimates.

Table 3-5
Annual TAC Emission Rates—Gas Combustion TEUs
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Annual Emission Estimates				Total Annual Emission Estimates	
			Forehearth Natural Gas Combustion		Non-Production Natural Gas Combustion			
			(lb/yr) [1]	(g/s) [a]	(lb/yr) [1]	(g/s) [a]	(lb/yr)	(g/s)
TEU ID			NG_FH		NG		--	
Model ID			CFU113NG		NG		--	
METALS								
Arsenic	7440-38-2	Yes	--	--	5.1E-03	7.3E-08	5.1E-03	7.3E-08
Barium	7440-39-3	No	--	--	0.11	1.6E-06	0.11	1.6E-06
Beryllium	7440-41-7	Yes	--	--	3.1E-04	4.4E-09	3.1E-04	4.4E-09
Cadmium	7440-43-9	Yes	--	--	0.028	4.0E-07	0.028	4.0E-07
Chromium (total)	7440-47-3	No	--	--	0.036	5.1E-07	0.036	5.1E-07
Chromium VI	18540-29-9	Yes	--	--	1.4E-03	2.1E-08	1.4E-03	2.1E-08
Cobalt	7440-48-4	Yes	--	--	2.1E-03	3.1E-08	2.1E-03	3.1E-08
Copper	7440-50-8	Yes	--	--	0.022	3.1E-07	0.022	3.1E-07
Lead	7439-92-1	Yes	--	--	0.013	1.8E-07	0.013	1.8E-07
Manganese	7439-96-5	Yes	--	--	9.7E-03	1.4E-07	9.7E-03	1.4E-07
Mercury	7439-97-6	Yes	--	--	6.6E-03	9.5E-08	6.6E-03	9.5E-08
Molybdenum trioxide	1313-27-5	No	0.063	9.1E-07	0.042	6.0E-07	0.11	1.5E-06
Nickel	7440-02-0	Yes	--	--	0.054	7.7E-07	0.054	7.7E-07
Selenium	7782-49-2	Yes	--	--	6.1E-04	8.8E-09	6.1E-04	8.8E-09
Vanadium	7440-62-2	Yes	0.088	1.3E-06	0.059	8.4E-07	0.15	2.1E-06
Zinc	7440-66-6	No	--	--	0.74	1.1E-05	0.74	1.1E-05
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	123	1.8E-03	81.6	1.2E-03	204	2.9E-03
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	0.17	2.4E-06	0.11	1.6E-06	0.27	4.0E-06
Acrolein	107-02-8	Yes	0.10	1.5E-06	0.069	9.9E-07	0.17	2.5E-06
Benzene	71-43-2	Yes	0.31	4.4E-06	0.20	2.9E-06	0.51	7.4E-06
Ethylbenzene	100-41-4	Yes	0.36	5.2E-06	0.24	3.5E-06	0.61	8.7E-06
Formaldehyde	50-00-0	Yes	--	--	0.43	6.2E-06	0.43	6.2E-06
Hexane	110-54-3	Yes	0.24	3.5E-06	0.16	2.3E-06	0.40	5.8E-06
Toluene	108-88-3	Yes	1.41	2.0E-05	0.93	1.3E-05	2.34	3.4E-05
Xylenes (mixed isomers)	1330-20-7	Yes	1.04	1.5E-05	0.69	1.0E-05	1.74	2.5E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
PAHs	401	Yes	3.8E-03	5.5E-08	2.5E-03	3.7E-08	6.4E-03	9.2E-08
Benzo[a]pyrene	50-32-8	Yes	4.6E-05	6.6E-10	3.1E-05	4.4E-10	7.7E-05	1.1E-09
Naphthalene	91-20-3	Yes	0.012	1.7E-07	7.6E-03	1.1E-07	0.019	2.8E-07
Total TAC Emission Estimate			**127**	**1.8E-03**	**85.5**	**1.2E-03**	**212**	**3.1E-03**

Table 3-5
Annual TAC Emission Rates—Gas Combustion TEUs
Hollingsworth & Vose Fiber Company—Corvallis, OR

Notes

g = gram.

hr = hour.

lb= pound.

RBC = risk-based concentration.

s = second.

TAC = toxic air contaminant.

TEU = toxic emission unit.

yr = year.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

Table 3-6
Daily TAC Emission Rates—Gas Combustion TEUs
Hollingsworth & Vose Fiber Company—Corvallis, OR

TAC	CAS/ODEQ Sequence ID	RBC? (Yes/No)	Daily Emission Estimates				Total Daily Emission Estimates	
			Forehearth Natural Gas Combustion		Non-Production Natural Gas Combustion			
			(lb/day) [1]	(g/s) [a]	(lb/day) [1]	(g/s) [a]	(lb/day)	(g/s)
TEU ID			NG_FH		NG		--	
Model ID			CFU113NG		NG		--	
METALS								
Arsenic	7440-38-2	Yes	--	--	1.4E-05	7.3E-08	1.4E-05	7.3E-08
Barium	7440-39-3	No	--	--	3.1E-04	1.6E-06	3.1E-04	1.6E-06
Beryllium	7440-41-7	Yes	--	--	8.4E-07	4.4E-09	8.4E-07	4.4E-09
Cadmium	7440-43-9	Yes	--	--	7.7E-05	4.0E-07	7.7E-05	4.0E-07
Chromium (total)	7440-47-3	No	--	--	9.8E-05	5.1E-07	9.8E-05	5.1E-07
Chromium VI	18540-29-9	Yes	--	--	3.9E-06	2.0E-08	3.9E-06	2.0E-08
Cobalt	7440-48-4	Yes	--	--	5.9E-06	3.1E-08	5.9E-06	3.1E-08
Copper	7440-50-8	Yes	--	--	5.9E-05	3.1E-07	5.9E-05	3.1E-07
Lead	7439-92-1	Yes	--	--	3.5E-05	1.8E-07	3.5E-05	1.8E-07
Manganese	7439-96-5	Yes	--	--	2.6E-05	1.4E-07	2.6E-05	1.4E-07
Mercury	7439-97-6	Yes	--	--	1.8E-05	9.5E-08	1.8E-05	9.5E-08
Molybdenum trioxide	1313-27-5	No	1.7E-04	9.1E-07	1.2E-04	6.0E-07	2.9E-04	1.5E-06
Nickel	7440-02-0	Yes	--	--	1.5E-04	7.7E-07	1.5E-04	7.7E-07
Selenium	7782-49-2	Yes	--	--	1.7E-06	8.8E-09	1.7E-06	8.8E-09
Vanadium	7440-62-2	Yes	2.4E-04	1.3E-06	1.6E-04	8.4E-07	4.0E-04	2.1E-06
Zinc	7440-66-6	No	--	--	2.0E-03	1.1E-05	2.0E-03	1.1E-05
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	0.34	1.8E-03	0.22	1.2E-03	0.56	2.9E-03
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	4.5E-04	2.4E-06	3.0E-04	1.6E-06	7.5E-04	3.9E-06
Acrolein	107-02-8	Yes	2.8E-04	1.5E-06	1.9E-04	9.9E-07	4.7E-04	2.5E-06
Benzene	71-43-2	Yes	8.4E-04	4.4E-06	5.6E-04	2.9E-06	1.4E-03	7.3E-06
Ethylbenzene	100-41-4	Yes	1.0E-03	5.2E-06	6.6E-04	3.5E-06	1.7E-03	8.7E-06
Formaldehyde	50-00-0	Yes	--	--	1.2E-03	6.2E-06	1.2E-03	6.2E-06
Hexane	110-54-3	Yes	6.6E-04	3.5E-06	4.4E-04	2.3E-06	1.1E-03	5.8E-06
Toluene	108-88-3	Yes	3.9E-03	2.0E-05	2.6E-03	1.3E-05	6.4E-03	3.4E-05
Xylenes (mixed isomers)	1330-20-7	Yes	2.9E-03	1.5E-05	1.9E-03	1.0E-05	4.8E-03	2.5E-05
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
PAHs	401	Yes	1.1E-05	5.5E-08	7.0E-06	3.7E-08	1.7E-05	9.2E-08
Benzo[a]pyrene	50-32-8	Yes	1.3E-07	6.6E-10	8.4E-08	4.4E-10	2.1E-07	1.1E-09
Naphthalene	91-20-3	Yes	3.2E-05	1.7E-07	2.1E-05	1.1E-07	5.2E-05	2.8E-07
Total TAC Emission Estimate			**0.35**	**1.8E-03**	**0.23**	**1.2E-03**	**0.58**	**3.1E-03**

Table 3-6
Daily TAC Emission Rates—Gas Combustion TEUs
Hollingsworth & Vose Fiber Company—Corvallis, OR

Notes

g = gram.

hr = hour.

lb= pound.

RBC = risk-based concentration.

s = second.

TAC = toxic air contaminant.

TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

References

[1] Emission estimates obtained from the revised emissions inventory dated March 14, 2024.

Table 3-7
Model Source Parameters—Point Sources
Hollingsworth & Vose Fiber Company—Corvallis, OR

Point Sources											
Model ID	Model Source Description	UTM Coordinates [1] (m)		Emission Rate [2] (g/s)	Discharge Orientation [1]	Base Elevation [3] (m)	Release Height [1] (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Flowrate [a] (m^3/s)	Exit Temperature (K)
		Easting	Northing								
Significant TEUs											
CFU101	CFU-101	479585.5	4933222.3	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU102	CFU-102	479583.96	4933226.3	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU103	CFU-103	479570.71	4933221.4	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU104	CFU-104	479572.24	4933217.4	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU105	CFU-105	479580.34	4933195.5	1	VERTICAL [1]	71.6	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU106	CFU-106	479574.87	4933210.6	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU107	CFU-107	479578.81	4933199.8	1	VERTICAL [1]	71.6	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU108	CFU-108	479576.4	4933206.3	1	VERTICAL [1]	71.5	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU109	CFU-109	479592.06	4933204.7	1	VERTICAL [1]	71.8	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU110	CFU-110	479587.9	4933215.5	1	VERTICAL [1]	71.6	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU111	CFU-111	479589.65	4933211.2	1	VERTICAL [1]	71.7	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU112	CFU-112	479593.59	4933200.7	1	VERTICAL [1]	71.8	13.7	0.76 [1]	14.5 [1]	6.61	375 [1]
CFU113	CFU-113	479596.66	4933193.9	1	VERTICAL [1]	71.8	13.7	0.51 [1]	14.6 [1]	2.96	325 [1]
CFU114	CFU-114	479229.31	4933404.2	1	VERTICAL [1]	68.2	13.7	0.91 [1]	11.9 [1]	7.79	401 [1]
CFU115	CFU-115	479234.39	4933403.9	1	VERTICAL [1]	68.2	13.7	0.91 [1]	11.9 [1]	7.79	401 [1]
CFU116	CFU-116	479230.55	4933375.2	1	VERTICAL [1]	67.9	13.7	0.76 [1]	14.5 [1]	6.61	388 [1]
CFU117	CFU-117	479225.47	4933375.6	1	VERTICAL [1]	67.7	13.7	0.76 [1]	14.5 [1]	6.61	388 [1]
CFU118	CFU-118	479235.4	4933374.9	1	VERTICAL [1]	68.2	13.7	0.76 [1]	14.5 [1]	6.61	388 [1]
EGEN1	Line 1 Emergency Generator	479647.09	4933145.3	1	HORIZONTAL [1]	72.2	12.2	0.15 [1]	48.9 [1]	0.89	743 [1]
EGEN2	Line 2 Emergency Generator	479673.47	4933178.8	1	CAPPED [1]	71.9	2.13	0.20 [1]	27.5 [1]	0.89	705 [1]
CT1_2	Line 1 and 2 Cooling Tower	479637.76	4933182.7	1	VERTICAL [1]	71.9	7.01	1.83 [1]	17.5 [1]	46.0	Ambient [1]
CT3A	Line 3 Cooling Tower, Fan A	479649.82	4933182.9	1	VERTICAL [1]	71.8	8.53	1.52 [1]	11.0 [1]	20.1	Ambient [1]
CT3B	Line 3 Cooling Tower, Fan B	479648.35	4933183	1	VERTICAL [1]	71.8	8.53	1.52 [1]	11.0 [1]	20.1	Ambient [1]
CT4	Line 4 Cooling Tower	479262.18	4933379.9	1	VERTICAL [1]	67.8	8.53	3.32 [1]	3.29 [1]	28.5	Ambient [1]
BBBH	Raw Material Handling Area Baghouse	479686.37	4933169.9	1	HORIZONTAL [1]	71.9	9.75	0.54 [1]	2.03 [1]	0.47	Ambient [1]
Gas Combustion TEUs											
CFU113NG	Forehearth NG Combustion (GP1)	479596.66	4933193.9	1	VERTICAL [1]	71.8	13.7	0.51 [1]	14.6 [1]	2.96	325 [1]
NG	Non-Production NG Combustion	479215.37	4933433.7	1	CAPPED [4]	68.2	32.0	0.20 [4]	2.50 [4]	0.081	Ambient [4]

Notes

CFU = ceramic filtration unit.

g = gram.

GP1 = Glass Plant 1

GP2 = Glass Plant 2

K = kelvin.

m = meter.

m^3 = cubic meters.

NG = natural gas.

s = second.

TEU = toxic emission unit.

UTM = universal transverse mercator.

[a] Exit flowrate (m^3/s) = ($\pi/4$) x (stack diameter [m])^2 x (exit velocity [m/s])

References

[1] Value based on information provided by Hollingsworth & Vose Fiber Company.

[2] Dispersion model will be executed using unit-emission rates.

[3] Base elevation derived from the US Geological Survey National Elevation Dataset downloaded and processed using AERMET.

[4] Actual release parameters for the air handling units gas combustion exhaust are unknown. Conservative release parameters were used in place of actual.

Table 3-8
Model Source Parameters—Volume Sources
Hollingsworth & Vose Fiber Company—Corvallis, OR

Volume Sources									
Model ID	Model Source Description	UTM Coordinates [1] (m)		Emission Rate [2] (g/s)	Base Elevation [3] (m)	Release Height (m)	Length of Side (m)	Initial Lateral Dimension [a] (m)	Initial Vertical Dimension (m)
		Easting	Northing						
Significant TEUs									
SILO1	GP1 CFU Bulking Agent Storage Silo	479597.15	4933179.1	1	71.9	12.8 [1]	0.20 [5]	0.047	0.071 [b]
SILO2	GP2 CFU Bulking Agent Storage Silo	479241.49	4933427.5	1	67.7	12.8 [1]	0.20 [5]	0.047	0.071 [b]
BHBH	Waste and Off-spec RM Baghouse	479687.08	4933165.8	1	72.0	3.20 [1]	0.23 [5]	0.052	0.50 [b]
PAINT	Shipping and Recieving Spray Paint Usage	479676.85	4933186.2	1	71.9	1.00 [7]	1.00 [7]	0.23	0.23 [b]
SSF01	Super Sack Filter for CFU101	479590.96	4933224.2	1	71.6	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF02	Super Sack Filter for CFU102	479590.19	4933227	1	71.6	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF03	Super Sack Filter for CFU103	479556.58	4933216.1	1	71.4	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF04	Super Sack Filter for CFU104	479557.64	4933213.2	1	71.4	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF05	Super Sack Filter for CFU105	479565.42	4933192.3	1	71.6	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF06	Super Sack Filter for CFU106	479560.53	4933205.6	1	71.4	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF07	Super Sack Filter for CFU107	479564.39	4933195.1	1	71.5	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF08	Super Sack Filter for CFU108	479561.69	4933202.7	1	71.5	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF09	Super Sack Filter for CFU109	479597.82	4933205.9	1	72.0	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF10	Super Sack Filter for CFU110	479594.07	4933216.4	1	71.6	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF11	Super Sack Filter for CFU111	479595.08	4933213.6	1	71.7	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF12	Super Sack Filter for CFU112	479598.84	4933202.9	1	72.0	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF13	Super Sack Filter for CFU113	479601.54	4933195.3	1	71.9	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF14	Super Sack Filter for CFU114	479231.06	4933410.3	1	68.3	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF15	Super Sack Filter for CFU115	479234.24	4933410.1	1	68.4	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF16	Super Sack Filter for CFU116	479234.48	4933381.1	1	68.0	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF17	Super Sack Filter for CFU117	479229.21	4933389.1	1	68.0	2.13 [1]	0.13 [5]	0.030	0.50 [b]
SSF18	Super Sack Filter for CFU118	479231.98	4933388.9	1	68.1	2.13 [1]	0.13 [5]	0.030	0.50 [b]
GP1_A	GP1 Fugitives, North	479653.22	4933166.7	1	72.0	6.71 [8]	7.62 [8]	1.77	6.24 [c]
GP1_B	GP1 Fugitives, South	479653.26	4933156.8	1	72.0	6.71 [8]	7.62 [8]	1.77	6.24 [c]

Table 3-8
Model Source Parameters—Volume Sources
Hollingsworth & Vose Fiber Company—Corvallis, OR

Notes

g = gram.

m = meter.

s = second.

TEU = toxic emission unit.

UTM = universal transverse mercator.

[a] Initial lateral dimension (m) = (length of side [m]) / (4.3); see Reference (4).

[b] Initial vertical dimension (m) = (vertical dimension of source [m]) / (4.3); see Reference (6).

[c] Initial vertical dimension (m) = (building height [m]) / (2.15); see Reference (4).

References

[1] Information provided by Hollingsworth & Vose Fiber Company.

[2] Dispersion model will be executed using unit-emission rates.

[3] Base elevation derived from the US Geological Survey National Elevation Dataset downloaded and processed using AERMET.

[4] See "User's Guide for the AMS/EPA Regulatory Model (AERMOD)," EPA-454/B-18-001 dated April 2018. See Table 3-2. Assumes elevated source on or adjacent to a building. Building and downwash structure heights presented in Table 4-7, Summary of Proposed Downwash Structure Heights.

[5] Engineering judgement based on equipment size.

[6] See "User's Guide for the AMS/EPA Regulatory Model (AERMOD)," EPA-454/B-18-001 dated April 2018. See Table 3-2. Elevated source not on or adjacent to a building.

[7] Engineering judgement based on typical application methods.

[8] Engineering judgement based on GP1 building dimensions.

Table 4-3
Assessment of Missing Meteorological Data
Hollingsworth & Vose Fiber Company—Corvallis, OR

Quarter [1]	Meteorological Data Assessment for Modeling Period		
	Total Hours	Missing Hours [1]	Available Hours [a] (%)
Q1 (2017)	2,160 [1]	3	99.9%
Q2 (2017)	2,184 [1]	24	98.9%
Q3 (2017)	2,208 [1]	16	99.3%
Q4 (2017)	2,208 [1]	0	100%

Notes

Q1 = quarter 1.

Q2 = quarter 2.

Q3= quarter 3.

Q4 = quarter 4.

[a] Available hours (%) = (1 - [{missing hours} / {total hours}]) x (100%)

References

[1] The number of missing hours was determined by generating a Surface QA Excel file generated by AERMET Version 22112.

[2] Meteorological data obtained from the facility's on-site meteorological station.

Table 4-4
AERSURFACE Settings
Hollingsworth & Vose Fiber Company—Corvallis, OR

Parameter	Setting
Study radius for surface roughness	1.0 kilometer
Are the surface data collected at an airport?	No
Should continuous snow cover be assumed?	No
Is this an arid region?	No
Number of sectors	12
Months assumed to constitute "winter"	December, January, and February
Months assumed to constitute "spring"	March, April, and May
Months assumed to constitute "summer"	June, July, and August
Months assumed to constitute "autumn"	September, October, and November
Period for land use calculations	Monthly

Table 4-5
Surface Soil Moisture Condition Assessment
Hollingsworth & Vose Fiber Company—Corvallis, OR

30-Year Climate Precipitation Data [1]		Annual Precipitation (in)
Average Annual Precipitation	[2]	42.5
Lower: 30th Percentile Annual Precipitation	[3]	35.7
Upper: 70th Percentile Annual Precipitation	[4]	47.8
Total Measured Precipitation for the Proposed Modeling Period (2017)		
2017 Total Precipitation	[5]	53.6
Climatic Significance	[6]	Above 70th Percentile
Calendar Year Soil Moisture (in)	[7]	WET

References

[1] Climatological data obtained from the Western Regional Climate Center for the Corvallis, OR (ID: 351862). Data represent the 30-year period between January 1988 and December 2017.

[2] Represents average annual precipitation during the 30-year climatological period.

[3] Represents upper limit of the 30th percentile annual precipitation during 30-year climatological period.

[4] Represents lower limit of the 70th percentile annual precipitation during 30-year climatological period.

[5] Represents proposed model period (January 1, 2017 - December 31, 2017).

[6] Climatic significance represents annual precipitation compared to 30-year climatological period.

[7] Surface moisture conditions correspond to DRY, AVERAGE or WET soil content determined by comparing annual precipitation to 30-year climatological period. This method is consistent with the methodology set forth in the current version of the EPA AERSURFACE User's Guide dated February 2020.

Table 4-6
Summary of Downwash Structure Heights
Hollingsworth & Vose Fiber Company—Corvallis, OR

Downwash Structure Model ID	Base Elevation [1]		Number of Building Tiers	Tier Height [2]	
	(ft)	(m)		(ft)	(m)
BLD_1	236.7	72.14	1	25.2	7.68
BLD_2	236.6	72.12	3	25.2	7.68
				36.0	10.97
				44.0	13.41
BLD_3	235.8	71.87	1	14.2	4.33
BLD_4	235.5	71.79	1	11.3	3.44
BLD_5	235.2	71.70	1	26.0	7.92
BLD_6	234.2	71.38	1	10.3	3.14
BLD_7	232.0	70.71	4	16.4	5.00
				17.0	5.18
				32.7	9.97
				39.3	11.98
BLD_8	232.1	70.74	1	29.7	9.05
BLD_9	230.6	70.28	1	21.0	6.40
BLD_10	225.1	68.60	1	21.0	6.40
BLD_11	228.2	69.55	1	19.7	6.00
BLD_12	224.6	68.47	1	13.7	4.18
BLD_13	224.0	68.26	1	29.3	8.93
BLD_14	225.1	68.60	1	22.1	6.74
BLD_15	224.5	68.44	1	29.9	9.11
BLD_16	223.5	68.11	2	14.4	4.39
				25.3	7.71
BLD_17	220.7	67.27	1	10.0	3.05
BLD_19	223.1	68.01	1	10.3	3.14
				20.8	6.34
				30.8	9.39
				45.0	13.72
BLD_22	233.2	71.09	1	26.2	8.00
CFU103	234.2	71.38	1	38.0	11.58
CFU102	234.9	71.61	1	38.0	11.58
CFU101	234.9	71.59	1	38.0	11.58
CFU104	234.3	71.40	1	38.0	11.58
CFU105	234.9	71.60	1	38.0	11.58
CFU107	234.7	71.53	1	38.0	11.58
CFU108	234.5	71.48	1	38.0	11.58
CFU106	234.4	71.46	1	38.0	11.58
CFU110	235.1	71.67	1	38.0	11.58
CFU111	235.3	71.72	1	38.0	11.58
CFU109	236.1	71.97	1	38.0	11.58
CFU112	236.1	71.95	1	38.0	11.58
BLD_18-1	223.4	68.09	1	28.0	8.53
BLD_18-2	222.3	67.77	1	31.7	9.66

Table 4-6
Summary of Downwash Structure Heights
Hollingsworth & Vose Fiber Company—Corvallis, OR

Downwash Structure Model ID	Base Elevation [1]		Number of Building Tiers	Tier Height [2]	
	(ft)	(m)		(ft)	(m)
BLD_18-3	221.9	67.62	1	28.0	8.53
BLD_18-4	222.5	67.82	1	22.0	6.71
BLD_18-5	223.4	68.09	1	27.8	8.47
CFU114	223.7	68.18	1	38.0	11.58
CFU115	223.8	68.21	1	38.0	11.58
CFU117	223.4	68.09	1	38.0	11.58
CFU118	223.8	68.20	1	38.0	11.58
CFU116	223.3	68.06	1	38.0	11.58
CFU113	235.5	71.79	1	38.0	11.58
EGENGP1	236.3	72.01	1	7.0	2.13
BLD_44	234.9	71.60	1	15.0	4.57
BLD_45	234.4	71.45	1	15.0	4.57
BLD_46	233.9	71.30	1	17.0	5.18
BLD_47	231.6	70.59	1	20.0	6.10

Notes

ft = feet.

m = meter.

References

[1] Base elevation derived from 1/3-arc second United States Geological Survey National Elevation Data processed using AERMAP.

[2] Information provided by Hollingsworth & Vose Fiber Company or obtained from Google Earth. Value represents height above base elevation.

Table 4-9
Summary Of Statewide Zoning And Exposure Type Categorization
Hollingsworth & Vose Fiber Company—Corvallis, OR

Oregon Statewide Zoning Descriptions [1]	Corresponding Exposure Type Classification	Risk Assessments To Be Performed
Beaches and Dunes	Acute-only	Acute Noncancer
Coastal Estuarine	Acute-only	Acute Noncancer
Coastal Shorelands	Acute-only	Acute Noncancer
Combo equal emphasis	Acute-only	Acute Noncancer
Combo with priority emphasis	Acute-only	Acute Noncancer
Commercial - Central	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - General	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - Neighborhood	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - Office	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 160+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 20+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 40+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 80	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Federal Forest	Acute-only	Acute Noncancer
Federal Range	Acute-only	Acute Noncancer
Forest	Acute-only	Acute Noncancer
Future Urban Development	Residential	Cancer, Chronic and Acute Noncancer
High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Indian reservation/tribal trust	Residential	Cancer, Chronic and Acute Noncancer
Industrial - Heavy	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial - Light	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial Campus	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial Office	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Marginal Farm Land 10+	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Medium High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Medium Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Medium-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Mineral and Aggregate	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 160+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 20	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 40	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 80	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Extremely High	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. High	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Low	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Med-high	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Medium	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. V.High	Residential	Cancer, Chronic and Acute Noncancer
No Data	Acute-only	Acute Noncancer
Open Space/Conservation	Acute-only	Acute Noncancer
Other	Acute-only	Acute Noncancer
Parks & Open Space	Acute-only	Acute Noncancer
Prime Forest 80	Acute-only	Acute Noncancer
Public & semi-public Uses	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Public Facilities	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Rural Commercial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Rural Industrial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Rural Residential 1 acre	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 10 acres	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 2-4 acres	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 5 acres	Residential	Cancer, Chronic and Acute Noncancer
Secondary Forest 80	Acute-only	Acute Noncancer
UC Rural Commercial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
UC Rural Industrial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Very High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Very Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer

Reference

[1] Oregon statewide zoning descriptions obtained from the Department of Land Conservation and Development statewide zoning dataset.

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
478569.73	4933304.15	Parks & Open Space	Child	Early learning provider
479156.75	4934053.31	Commercial - Central	Child	School
478837.91	4932866.00	Industrial - Light	Residential	Tax lot property class
478862.91	4932866.00	Industrial - Light	Residential	Tax lot property class
478887.91	4933891.00	Commercial - Central	Residential	Tax lot property class
478912.91	4933891.00	Commercial - Central	Residential	Tax lot property class
478962.91	4933891.00	Commercial - Central	Residential	Tax lot property class
478962.91	4933916.00	Commercial - Central	Residential	Tax lot property class
478962.91	4933941.00	Commercial - Central	Residential	Tax lot property class
478987.91	4933891.00	Commercial - Central	Residential	Tax lot property class
478987.91	4933916.00	Commercial - Central	Residential	Tax lot property class
479012.91	4933916.00	Commercial - Central	Residential	Tax lot property class
480012.91	4933416.00	Exclusive Farm Use 80	Worker	Tax lot property class
480012.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480037.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480037.91	4933416.00	Exclusive Farm Use 80	Worker	Tax lot property class
480037.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480037.91	4933466.00	Exclusive Farm Use 80	Worker	Tax lot property class
478837.91	4934091.00	Commercial - Neighborhood	Residential	Tax lot property class
478987.91	4933991.00	Commercial - Central	Residential	Tax lot property class
478987.91	4934241.00	Commercial - Central	Residential	Tax lot property class
479037.91	4933991.00	Commercial - Central	Residential	Tax lot property class
480087.91	4934241.00	Exclusive Farm Use 80	Residential	Tax lot property class
480087.91	4934291.00	Exclusive Farm Use 80	Residential	Tax lot property class
480137.91	4934291.00	Exclusive Farm Use 80	Residential	Tax lot property class
480237.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4934441.00	Exclusive Farm Use 80	Residential	Tax lot property class
480487.91	4934491.00	Exclusive Farm Use 80	Residential	Tax lot property class
480537.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4934491.00	Exclusive Farm Use 80	Residential	Tax lot property class
480587.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4934491.00	Exclusive Farm Use 80	Residential	Tax lot property class
480637.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934341.00	Exclusive Farm Use 80	Worker	Tax lot property class

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
480637.91	4934391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4934491.00	Exclusive Farm Use 80	Residential	Tax lot property class
480687.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4934391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4934391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4934391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933991.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934041.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934091.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4934391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480087.91	4933941.00	Exclusive Farm Use 80	Residential	Tax lot property class
480087.91	4933891.00	Exclusive Farm Use 80	Residential	Tax lot property class
480087.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480087.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480087.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480087.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933891.00	Exclusive Farm Use 80	Residential	Tax lot property class
480137.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480137.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480187.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
480237.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480237.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480287.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480337.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480387.91	4933141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480437.91	4933141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
480487.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480487.91	4933141.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480537.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480587.91	4933191.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480637.91	4933241.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480687.91	4933291.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
480737.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480737.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
480787.91	4933341.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933941.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933891.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933841.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933791.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933741.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933691.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933641.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933591.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933541.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933491.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933441.00	Exclusive Farm Use 80	Worker	Tax lot property class
480837.91	4933391.00	Exclusive Farm Use 80	Worker	Tax lot property class
479337.91	4932091.00	Low-density Res.	Child	Early learning provider
479087.91	4932441.00	Low-density Res.	Child	School
479087.91	4932391.00	Low-density Res.	Child	School
479087.91	4932341.00	Low-density Res.	Child	School
479037.91	4932441.00	Low-density Res.	Child	School
479037.91	4932391.00	Low-density Res.	Child	School
479037.91	4932341.00	Low-density Res.	Child	School
478987.91	4932441.00	Low-density Res.	Child	School
478987.91	4932391.00	Low-density Res.	Child	School
478987.91	4932341.00	Low-density Res.	Child	School
478937.91	4932441.00	Low-density Res.	Child	School
478937.91	4932391.00	Low-density Res.	Child	School
478937.91	4932341.00	Low-density Res.	Child	School
478887.91	4932341.00	Low-density Res.	Child	School
478837.91	4932541.00	Commercial - General	Residential	Tax lot property class
478787.91	4932591.00	Commercial - General	Residential	Tax lot property class
478787.91	4932541.00	Commercial - General	Residential	Tax lot property class
478737.91	4932691.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932691.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932641.00	Industrial - Light	Residential	Tax lot property class
478787.91	4932941.00	Industrial - Light	Residential	Tax lot property class
478787.91	4934691.00	Medium High-density Res.	Child	Early learning provider
478787.91	4934741.00	Medium High-density Res.	Child	Early learning provider
478737.91	4932741.00	Industrial - Light	Residential	Tax lot property class
478737.91	4932791.00	Industrial - Light	Residential	Tax lot property class
478737.91	4932841.00	Industrial - Light	Residential	Tax lot property class
478737.91	4932891.00	Industrial - Light	Residential	Tax lot property class
478737.91	4932941.00	Industrial - Light	Residential	Tax lot property class
478737.91	4934241.00	Industrial - Light	Residential	Aerial review
478687.91	4932741.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932791.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932841.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932891.00	Industrial - Light	Residential	Tax lot property class
478687.91	4932941.00	Industrial - Light	Residential	Tax lot property class
478687.91	4934241.00	Industrial - Light	Residential	Aerial review
478637.91	4932941.00	Industrial - Light	Residential	Tax lot property class

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
478637.91	4933391.00	Industrial - Light	Residential	Tax lot property class
478637.91	4934241.00	Industrial - Light	Residential	Aerial review
478637.91	4934291.00	Industrial - Light	Residential	Aerial review
478637.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478637.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478587.91	4932941.00	Industrial - Light	Residential	Tax lot property class
478587.91	4934291.00	Industrial - Light	Residential	Aerial review
478587.91	4934341.00	Industrial - Light	Residential	Aerial review
478587.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478587.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478537.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478537.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478487.91	4934291.00	Industrial - Light	Residential	Tax lot property class
478487.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478487.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478487.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478487.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478487.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934291.00	Industrial - Light	Residential	Tax lot property class
478437.91	4934341.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934391.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478437.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934341.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934391.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478387.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934341.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934391.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478337.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934341.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934391.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478287.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478237.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478237.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478237.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478187.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478187.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478187.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934141.00	Public & semi-public Uses	Residential	Aerial review
478137.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478137.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934091.00	Public & semi-public Uses	Residential	Aerial review
478087.91	4934141.00	Public & semi-public Uses	Residential	Aerial review
478087.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934491.00	Public & semi-public Uses	Child	Early learning provider

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
478087.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478087.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934091.00	Public & semi-public Uses	Residential	Aerial review
478037.91	4934141.00	Public & semi-public Uses	Residential	Aerial review
478037.91	4934441.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934491.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934541.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934591.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934641.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934691.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934741.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934841.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4934941.00	Public & semi-public Uses	Child	Early learning provider
478037.91	4935041.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478037.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478037.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478137.91	4934841.00	--	Child	Early learning provider
478137.91	4934941.00	--	Child	Early learning provider
478137.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478137.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478237.91	4934841.00	--	Child	Early learning provider
478237.91	4934941.00	--	Child	Early learning provider
478237.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478237.91	4935441.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478337.91	4934841.00	--	Child	Early learning provider
478337.91	4935041.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478337.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478337.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478337.91	4935741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4934841.00	--	Child	Early learning provider
478437.91	4935041.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4935541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478537.91	4934841.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478537.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478537.91	4935741.00	--	Child	School
478637.91	4934941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4935541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4935741.00	--	Child	School
478737.91	4934941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478737.91	4935041.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478737.91	4935441.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478737.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478737.91	4935741.00	--	Child	School
478837.91	4934941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4935741.00	--	Child	School
478937.91	4934841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478937.91	4934941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478937.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478937.91	4935541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478937.91	4935741.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4934841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4934941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4935041.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4935241.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4935741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4934841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4934941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4935241.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4935341.00	--	Child	School
479137.91	4935741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4935641.00	--	Child	Early learning provider
479337.91	4934941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479337.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479337.91	4935541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
479337.91	4935641.00	--	Child	Early learning provider
479437.91	4935041.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4935141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4935241.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4935541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4935741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479537.91	4935041.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479537.91	4935441.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479537.91	4935541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4934841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4935041.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4935641.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4935741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4934841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4934941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4935041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4935141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4935241.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4935341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4935441.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4935341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4935441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4935541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479937.91	4935541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479937.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479937.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480037.91	4935641.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480037.91	4935741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480137.91	4935741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480537.91	4934841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480537.91	4934941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480537.91	4935041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4935041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480937.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480937.91	4934341.00	--	Worker	Tax lot property class
480937.91	4934241.00	--	Worker	Tax lot property class
480937.91	4934141.00	--	Worker	Tax lot property class
480937.91	4934041.00	--	Worker	Tax lot property class
480937.91	4933941.00	--	Worker	Tax lot property class
480937.91	4933841.00	--	Worker	Tax lot property class
480937.91	4933741.00	--	Worker	Tax lot property class
480937.91	4933641.00	--	Worker	Tax lot property class
480937.91	4933541.00	--	Worker	Tax lot property class
481037.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481037.91	4934241.00	--	Worker	Tax lot property class
481037.91	4934141.00	--	Worker	Tax lot property class
481037.91	4934041.00	--	Worker	Tax lot property class
481037.91	4933941.00	--	Worker	Tax lot property class
481037.91	4933841.00	--	Worker	Tax lot property class
481037.91	4933741.00	--	Worker	Tax lot property class
481037.91	4933641.00	--	Worker	Tax lot property class
481037.91	4933541.00	--	Worker	Tax lot property class
481037.91	4933141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481137.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481137.91	4934141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481137.91	4934041.00	--	Worker	Tax lot property class
481137.91	4933941.00	--	Worker	Tax lot property class
481137.91	4933841.00	--	Worker	Tax lot property class
481137.91	4933741.00	--	Worker	Tax lot property class
481137.91	4933641.00	--	Worker	Tax lot property class
481137.91	4933541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4933841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4932141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4934441.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4934341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4934241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4932841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481337.91	4932041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4932841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4932441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
481537.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481537.91	4932941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4931741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4931641.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4931541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4931441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4931341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481737.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481737.91	4932841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4932941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4931941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480537.91	4931841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480437.91	4931841.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480437.91	4931741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480337.91	4931641.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4931541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4931441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4931341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4931241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480137.91	4931241.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480137.91	4931141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480137.91	4931041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480037.91	4931541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480037.91	4930941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479937.91	4931541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4931541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4931041.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4930941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4931741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4931541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4931441.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479737.91	4930941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4931841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4931141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479537.91	4931841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479537.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4931841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4931341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479337.91	4931841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479337.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4931241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479137.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4931741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4931641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4931841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4931741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4931641.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4931541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477337.91	4931341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4931041.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477937.91	4932141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477937.91	4933641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477937.91	4934441.00	--	Child	Early learning provider
477937.91	4934541.00	--	Child	Early learning provider
477937.91	4934641.00	--	Child	School
477937.91	4934941.00	--	Child	Early learning provider
477937.91	4935441.00	--	Child	School
477937.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477837.91	4934441.00	--	Child	Early learning provider
477837.91	4934541.00	--	Child	Early learning provider
477837.91	4934641.00	--	Child	School
477837.91	4934941.00	--	Child	Early learning provider
477737.91	4932141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477737.91	4933541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477737.91	4933641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477737.91	4933841.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477737.91	4934341.00	--	Child	Early learning provider
477737.91	4934441.00	--	Child	Early learning provider

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
477737.91	4934541.00	--	Child	Early learning provider
477737.91	4934641.00	--	Child	Early learning provider
477737.91	4934741.00	--	Child	Early learning provider
477737.91	4934841.00	--	Child	Early learning provider
477737.91	4934941.00	--	Child	Early learning provider
477737.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477637.91	4932841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477637.91	4933641.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477637.91	4934341.00	--	Child	Early learning provider
477637.91	4934441.00	--	Child	Early learning provider
477637.91	4934541.00	--	Child	Early learning provider
477637.91	4934641.00	--	Child	Early learning provider
477637.91	4934741.00	--	Child	Early learning provider
477637.91	4934841.00	--	Child	Early learning provider
477637.91	4934941.00	--	Child	Early learning provider
477637.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477637.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477537.91	4933641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477537.91	4934341.00	--	Child	Early learning provider
477537.91	4934441.00	--	Child	Early learning provider
477537.91	4934541.00	--	Child	Early learning provider
477537.91	4934641.00	--	Child	Early learning provider
477537.91	4934741.00	--	Child	Early learning provider
477537.91	4934841.00	--	Child	Early learning provider
477537.91	4934941.00	--	Child	Early learning provider
477537.91	4935441.00	--	Child	School
477537.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4932141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4932841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4933641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4934341.00	--	Child	Early learning provider
477437.91	4934441.00	--	Child	Early learning provider
477437.91	4934541.00	--	Child	Early learning provider
477437.91	4934641.00	--	Child	Early learning provider
477437.91	4934741.00	--	Child	Early learning provider
477437.91	4934841.00	--	Child	Early learning provider
477437.91	4934941.00	--	Child	Early learning provider
477437.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4935641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477337.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477337.91	4932841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477337.91	4933041.00	--	Child	School
477337.91	4933141.00	--	Child	School
477337.91	4933241.00	--	Child	School
477337.91	4933341.00	--	Child	School
477337.91	4933441.00	--	Child	School
477337.91	4933641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477337.91	4934441.00	--	Child	Early learning provider
477337.91	4934541.00	--	Child	Early learning provider
477337.91	4934641.00	--	Child	Early learning provider
477337.91	4934741.00	--	Child	Early learning provider
477337.91	4934841.00	--	Child	Early learning provider
477337.91	4934941.00	--	Child	Early learning provider
477337.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4932841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4932941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4933041.00	--	Child	School
477237.91	4933141.00	--	Child	School
477237.91	4933241.00	--	Child	School
477237.91	4933341.00	--	Child	School
477237.91	4933441.00	--	Child	School
477237.91	4934341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4934441.00	--	Child	Early learning provider
477237.91	4934541.00	--	Child	Early learning provider
477237.91	4934641.00	--	Child	Early learning provider
477237.91	4934741.00	--	Child	Early learning provider
477237.91	4934841.00	--	Child	Early learning provider
477237.91	4934941.00	--	Child	Early learning provider
477237.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
477237.91	4935241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4932641.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4932841.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4933041.00	--	Child	School
477137.91	4933141.00	--	Child	School
477137.91	4933241.00	--	Child	School
477137.91	4933341.00	--	Child	School
477137.91	4933441.00	--	Child	School
477137.91	4934341.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4934441.00	--	Child	Early learning provider
477137.91	4934541.00	--	Child	Early learning provider
477137.91	4934641.00	--	Child	Early learning provider
477137.91	4934741.00	--	Child	Early learning provider
477137.91	4934841.00	--	Child	Early learning provider
477137.91	4934941.00	--	Child	Early learning provider
477137.91	4935041.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477137.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4932841.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4932941.00	--	Child	Early learning provider
477037.91	4933041.00	--	Child	School
477037.91	4933141.00	--	Child	School
477037.91	4933241.00	--	Child	School
477037.91	4933341.00	--	Child	School
477037.91	4933441.00	--	Child	School
477037.91	4934341.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4934441.00	--	Child	Early learning provider
477037.91	4934541.00	--	Child	Early learning provider
477037.91	4934641.00	--	Child	Early learning provider
477037.91	4934741.00	--	Child	Early learning provider
477037.91	4934841.00	--	Child	Early learning provider
477037.91	4934941.00	--	Child	Early learning provider
477037.91	4935741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4936541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4938141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477037.91	4938541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4936741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4938341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4936941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4937941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477637.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477837.91	4935941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477837.91	4936141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477837.91	4936941.00	--	Child	School
478037.91	4936941.00	--	Child	School
478237.91	4936341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478237.91	4937741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4936741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4937741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4937141.00	--	Child	School
478837.91	4938341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4936141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479037.91	4936741.00	--	Child	School
479037.91	4936941.00	--	Child	School
479037.91	4937141.00	--	Child	School
479037.91	4938341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4936141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479237.91	4937541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4938541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4936541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4937941.00	--	Child	School
479637.91	4938141.00	--	Child	School
479637.91	4938541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4938741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
479837.91	4937141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479837.91	4938741.00	--	Worker	Hospital
480037.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480037.91	4938741.00	--	Worker	Hospital
480237.91	4935941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4938341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4938741.00	--	Worker	Hospital
480437.91	4935941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480637.91	4936141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480637.91	4937541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480637.91	4938141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480637.91	4938541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480837.91	4936141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480837.91	4938541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481037.91	4937141.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481037.91	4938541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4936341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4938541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4938741.00	--	Child	School
481437.91	4936541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4938741.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4936541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4936541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482037.91	4936741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482037.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4936741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482437.91	4938341.00	--	Child	School
482837.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483037.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483237.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483437.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483637.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483837.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484037.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484237.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484237.91	4938541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484237.91	4938741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484437.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484437.91	4938341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484437.91	4938541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484437.91	4938741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484637.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484637.91	4938141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484837.91	4936941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482037.91	4934541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482037.91	4931941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482037.91	4928941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4934541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4931941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4929741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4928941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482237.91	4928741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482437.91	4934541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482437.91	4931341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482437.91	4928741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482637.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482637.91	4928541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482837.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483037.91	4935541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483037.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483037.91	4928141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483237.91	4934541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483237.91	4927941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483437.91	4934541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483437.91	4932141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483637.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483637.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483637.91	4931941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483837.91	4935141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483837.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483837.91	4933941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
483837.91	4932941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
484037.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484237.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484237.91	4931141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484437.91	4934541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484837.91	4935141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484837.91	4934741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4929541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481837.91	4929341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481637.91	4929941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4930341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481437.91	4930141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481237.91	4930341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481037.91	4930541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480837.91	4930541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480837.91	4928741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480437.91	4930341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480237.91	4930341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4930341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4929541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4929141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4928941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479637.91	4928541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4930741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
479437.91	4929941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478837.91	4930741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478637.91	4929541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478437.91	4929541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477437.91	4928341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477237.91	4928341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476637.91	4930541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4928141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476837.91	4932941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476837.91	4934341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476837.91	4936541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476837.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476837.91	4937741.00	--	Child	School
476837.91	4938141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476637.91	4932141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476637.91	4933141.00	--	Child	School
476637.91	4933541.00	--	Child	Early learning provider
476637.91	4934341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476637.91	4936341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476637.91	4937741.00	--	Child	School
476437.91	4933541.00	--	Child	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476437.91	4935741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476437.91	4936141.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476437.91	4936341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476437.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476437.91	4937941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476237.91	4933541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476037.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476037.91	4931941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476037.91	4932141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
476037.91	4932941.00	--	Child	Early learning provider
476037.91	4934341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475837.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475837.91	4933541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475837.91	4934341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475837.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475837.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4931941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4932141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4932341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4933541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4933941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475637.91	4938741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475437.91	4932341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475437.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475437.91	4932941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475437.91	4935941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
475237.91	4931741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4931941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4932141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4932341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4932941.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475237.91	4933941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475037.91	4932541.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475037.91	4933741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475037.91	4935341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
475037.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474837.91	4932741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474837.91	4932941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474837.91	4934741.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474837.91	4937341.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474637.91	4934141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474637.91	4934741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474637.91	4937741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474637.91	4937941.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474437.91	4934741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474437.91	4937341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474437.91	4937541.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474437.91	4937941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474237.91	4931341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474237.91	4932541.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474237.91	4934141.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474237.91	4934341.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474237.91	4934741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
474037.91	4931341.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477000.41	4940741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477000.41	4941741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477494.16	4941241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477494.16	4942241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
477987.91	4941741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478481.66	4941741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478481.66	4942241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
478975.41	4940241.00	--	Child	School
478975.41	4941741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480456.66	4939241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480950.41	4941741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480950.41	4942741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480950.41	4943241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481444.16	4941741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482925.41	4939241.00	--	Child	School
482925.41	4939741.00	--	Child	School
483912.91	4943741.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484900.41	4939241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
484900.41	4941241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
485887.91	4940741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
485887.91	4942741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486381.66	4941741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486381.66	4942241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486875.41	4942241.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
488356.66	4942741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
488850.41	4942741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
489344.16	4941241.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
489344.16	4942741.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
485337.91	4922941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
485837.91	4922941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486337.91	4924422.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486337.91	4923928.50	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486337.91	4923435.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486337.91	4922941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
486837.91	4934791.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
487337.91	4936272.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
487337.91	4935778.50	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
487337.91	4935285.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
488337.91	4938247.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
488837.91	4938247.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
488837.91	4931335.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
489337.91	4936766.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482862.91	4926941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
482862.91	4924441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Table 4-10
Summary of Revisions to Statewide Zoning
Hollingsworth & Vose Fiber Company—Corvallis, OR

UTM Coordinates (m)		Oregon Statewide Zoning Classification [1]	Exposure Type Classification	Reason for Exposure Type Classification Revision
Easting	Northing			
482862.91	4923441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
481875.41	4926441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
480887.91	4927441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
472987.91	4925441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
471012.91	4924941.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
470025.41	4924441.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473537.91	4932385.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473537.91	4933372.00	--	Child	Early learning provider
473037.91	4931397.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473037.91	4932385.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473037.91	4933866.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473037.91	4936335.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
473037.91	4938803.50	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
472537.91	4932385.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
472537.91	4934853.50	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
471037.91	4931397.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
471037.91	4931891.00	--	Worker	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
471037.91	4934853.50	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
471037.91	4936335.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
470537.91	4931891.00	--	Residential	REC with risk not assessed outside 50m; updated to RBC category of nearest REC
469037.91	4929422.00	--	Acute	REC with risk not assessed outside 50m; updated to RBC category of nearest REC

Notes

m = meter.

RBC = risk-based concentration.

REC = receptor.

Reference

[1] Oregon statewide zoning descriptions obtained from the Department of Land Conservation and Development statewide zoning dataset.