*West Virginia Department of Environmental Protection*
*Division of Air Quality*

# Fact Sheet

## *For Final Permitting Action Under 45CSR30 and Title V of the Clean Air Act*

Permit Number: **R30-03700108-2025**
Application Received: **May 20, 2022 (revised on January 17, 2024)**
Plant Identification Number: **03-54-037-00108**
Permittee: **ROXUL USA Inc.**
Facility Name: **RAN Facility**
Mailing Address: **665 Northport Avenue, Kearneysville, WV 25430**

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|---|---|
| Physical Location: | Ranson, Jefferson County, West Virginia |
| UTM Coordinates: | 252.06 km Easting • 4362.62 km Northing • Zone 18 |
| Directions: | From WV-9 E, take the County Route 1 exit toward WV-480/Kearneysville/Leetown. Turn right onto Leetown Road and travel 0.4 miles. Turn left onto WV 115 and travel for 1.4 miles. Turn left onto Northport Avenue. Take a left onto Granny Smith Lane after traveling 0.4 mile to enter the facility. |

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**Facility Description**

The RAN Facility manufactures stone wool insulation (SIC - 3296) for building insulation, customized solutions for industrial applications, acoustic ceilings, and other applications. The processes at the facility with the potential to produce air emissions are as follows: Raw Material Handling Sources; Melting Furnace; Wool Spinning, Curing, Cooling, and Cutting; Binder and De-Dust Oil Application and Storage; Stacking, Packing, and Unit Load; Recycling Plant; Miscellaneous operations and activities including boilers, heaters, a fire pump engine, and fuel storage; and paved haul roads and mobile work areas.

## Emissions Summary

| Plantwide Emissions Summary [Tons per Year] | | | |
|---|---|---|---|
| **Regulated Pollutants** | **Potential Emissions** | **2022 Actual Emissions** | **2023 Actual Emissions** |
| Carbon Monoxide (CO) | 60.10 | 14.86 | 17.19 |
| Nitrogen Oxides ($NO_X$) | 168.56 | 49.80 | 60.97 |
| Lead (Pb) | <0.01 | <0.01 | <0.01 |
| Particulate Matter ($PM_{2.5}$) | 49.80 | 6.95 | 8.86 |
| Particulate Matter ($PM_{10}$) | 53.72 | 8.32 | 10.52 |
| Total Particulate Matter (TSP) | 58.17 | 10.18 | 12.53 |
| Sulfur Dioxide ($SO_2$) | 141.34 | 60.95 | 72.47 |
| Volatile Organic Compounds (VOC) | 196.18 | 29.31 | 37.24 |

*$PM_{10}$ is a component of TSP.*

| **Hazardous Air Pollutants** | **Potential Emissions** | **2022 Actual Emissions** | **2023 Actual Emissions** |
|---|---|---|---|
| Acetaldehyde | <0.01 | <0.01 | <0.01 |
| Arsenic | <0.01 | <0.01 | <0.01 |
| Benzene | <0.01 | <0.01 | <0.01 |
| Carbon Sulfide | 1.57 | 0.10 | 0.13 |
| Mineral Fibers | 64.29 | 5.38 | 7.13 |
| Formaldehyde | 16.64 | 1.37 | 1.74 |
| Hexane | 0.11 | 0.07 | 0.06 |
| Hydrochloric Acid | 1.24 | 0.48 | 0.59 |
| Hydrogen Fluoride | 1.55 | None Reported | None Reported |
| Mercury | <0.01 | <0.01 | <0.01 |
| Methanol | 102.88 | 22.93 | 28.65 |
| Phenol | 75.32 | 16.68 | 20.84 |
| Toluene | <0.01 | None Reported | None Reported |
| Xylene | <0.01 | None Reported | None Reported |
| Total HAPs | 263.61 | 47.01 | 59.14 |

*Some of the above HAPs may be counted as PM or VOCs.*

## Title V Program Applicability Basis

This facility has the potential to emit 168.56 tpy of $NO_X$, 141.34 tpy of $SO_2$, 196.18 tpy of VOC, 64.29 tpy of Mineral Fibers, 16.64 tpy of Formaldehyde, 102.88 tpy of Methanol, and 75.32 tpy of Phenol. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, ROXUL USA Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

## Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

| | | |
|---|---|---|
| Federal and State: | 45CSR2 | To Prevent And Control Particulate Air Pollution from Combustion Of Fuel In Indirect Heat Exchangers |
| | 45CSR6 | Open burning prohibited. |
| | 45CSR7 | To Prevent And Control Particulate Matter Air Pollution from Manufacturing Processes And Associated Operations |
| | 45CSR10 | To Prevent And Control Air Pollution from The Emission Of Sulfur Oxides |
| | 45CSR11 | Standby plans for emergency episodes. |
| | 45CSR13 | NSR Permits |
| | 45CSR16 | Standards of Performance for New Stationary Sources |
| | WV Code § 22-5-4 (a) (15) | The Secretary can request any pertinent information such as annual emission inventory reporting. |
| | 45CSR30 | Operating permit requirement. |
| | 45CSR34 | Emission Standards for Hazardous Air Pollutants |
| | 40 C.F.R. Part 60, Subpart OOO | Standards of Performance for Nonmetallic Mineral Processing Plants |
| | 40 C.F.R. Part 60, Subpart IIII | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines |
| | 40 C.F.R. Part 61 | Asbestos inspection and removal |
| | 40 C.F.R. Part 63, Subpart DDD | National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production |
| | 40 C.F.R. Part 63, Subpart JJJJ | National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating |
| | 40 C.F.R. Part 63, Subpart ZZZZ | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines |
| | 40 C.F.R. Part 63, Subpart DDDDD | National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, |

| | | |
|---|---|---|
| | | Commercial, and Institutional Boilers and Process Heaters |
| | 40 C.F.R. Part 82, Subpart F | Ozone depleting substances |
| State Only: | 45CSR4 | No objectionable odors. |

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.,* 45CSR16, 45CSR34 and 45CSR30.

## Active Permits/Consent Orders

| Permit or Consent Order Number | Date of Issuance | Permit Determinations or Amendments That Affect the Permit *(if any)* |
|---|---|---|
| R14-0037B | September 5, 2024 | |

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

## Determinations and Justifications

This is the initial Title V permit for ROXUL USA Inc.'s RAN Facility. The facility was constructed under PSD permit R14-0037, issued on April 30, 2018. Operations began on May 22, 2021 and the Title V Permit Application was received on May 20, 2022. Roxul USA Inc. submitted a modification to R14-0037 on October 3, 2022 which was deemed complete on August 8, 2023 and permit R14-0037A was issued on November 16, 2023. The changes made in the permit modification R14-0037A, when taken in aggregate, decreased the facility's potential to emit to less than the major source thresholds as defined in 45CSR14. Therefore, the facility is no longer a major source per 45CSR14. On January 17, 2024, ROXUL USA Inc. submitted an updated Title V application to incorporate the changes permitted under R14-0037A.

The issuance of Permit No. R14-0037A was the subject of two appeals to the West Virginia Air Quality Board ("AQB"). ROXUL USA, Inc. ("Rockwool") filed Appeal No. 23-01-AQB and the Jefferson County Foundation, Inc., Karen Freer, Sharon Wilt, and Gavin Perry (collectively, "JCF") filed Appeal No. 23-02-AQB.

Rockwool filed Appeal No. 23-01-AQB on December 11, 2023. JCF participated in the proceedings as an intervenor. Rockwool specifically objected to the inclusion of Condition 4.1.11, requiring all building doors to remain closed except as necessary for people or material to enter the building; requested modification of the $PM_{2.5}$ emission limits for the WESP in Condition 4.1.5.a from 33.60 tons per year to 50.39 tons per year and from 8 lb/hr to 12 lb/hr; and requested clarification for Condition 4.3.2 that the testing required within 12 months of the issuance of the permit would not apply and that the permittee would follow the testing schedule in Condition 4.3.3.

During the pendency of its appeal, Rockwool moved to stay the application of Condition No. 4.1.11 pending resolution of the appeal. The AQB granted Rockwool's motion as to the 31 doors in Categories 2, 3, and 4 but denied the motion as to all other exterior doors. Rockwool subsequently withdrew its challenge to Condition 4.1.11 as it applied to the eight exterior doors in the charging building; withdrew its challenge to Condition 4.3.2; and requested revision of the HCl limit for the Melt Furnace (IMF01) in Condition 4.1.4(a) which was incorrectly set at 0.62 tons per year due to a typographical error. DAQ agreed to correct the HCl limit contingent on Rockwool's submission of a Class I Administrative Update to Permit No. R14-0037A.

JCF filed Appeal No. 23-02-AQB on December 18, 2023. Rockwool participated in the proceedings as an intervenor. JCF specifically objected to the issuance of Permit No. R14-0037A as a minor NSR permit under 45CSR13 and requested that Rockwool be required to reapply for a modified PSD permit under 45CSR14.

On February 7, 2024, the AQB held an evidentiary hearing on Rockwool's appeal. On August 8, 2024, the AQB issued a final order and granted Rockwool's appeal of Condition 4.1.11 as it applies to all exterior doors at the facility, except for the eight (8) Charging Building Doors. Rockwool's appeal of Condition 4.1.5.a for the $PM_{2.5}$ emission limits for the WESP was denied.

The evidentiary hearing on JCF's appeal was also held on February 7, 2024 where the AQB granted WV DAQ's and Rockwool's request for judgment as a matter of law, thereby allowing the issuance of the modified permit R14-0037A. On August 8, 2024, the AQB issued a final order on the appeal and granted WV DAQ's and Rockwool's renewed motions for judgment as a matter of law.

On August 28, 2024, ROXUL USA Inc. submitted a request for a Class I administrative update to R14-0037A to change Condition 4.1.11 based on the AQB's final order. Included in the Class I administrative update was also a request to modify the HCl emission limit in condition 4.1.4.a from 0.15 lb/hr (0.07 kg/hr) and 0.62 tons per year (0.56 metric tons per year) to 0.29 lb/hr (0.13 kg/hr) and 1.24 tons per year (1.12 metric tons per year). R14-0037B was issued on September 5, 2024 and these changes were included in the Proposed Title V Permit.

The RAN Facility is subject to the following State Rules and Federal Regulations:

**45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers**

Pursuant to the definition of "fuel burning unit" under 45CSR2 ("producing heat or power by indirect heat transfer"), 45CSR2 applies to the PreHeat Burner (IMF24) and Natural Gas Boilers 1 and 2 (CM03 and CM04), and these units are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of each of the units is less than 10 mmBtu/hr, the units are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only remaining substantive requirement is under Section 3.1 - Visible Emissions Standards.

**45CSR2 Opacity Standard - Section 3.1**

Pursuant to 45CSR2, Section 3.1, each of the above specified units (IMF24, CM03, and CM04) are subject to an opacity limit of 10%. Proper maintenance and operation of the units (and the use of piped natural gas (PNG) as fuel) should keep the opacity of the units well below 10% during normal operations.

**45CSR6: To Prevent and Control Particulate Air Pollution from Combustion of Refuse**

The Curing Oven Afterburner (CO-AB) is subject to 45CSR6.

Pursuant to §45-6-4.1, PM emissions from incinerators are limited to a value determined by the following formula:

Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)

Where, the factor, F, is as indicated in Table I below:

Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions

| Incinerator Capacity | Factor F |
|---|---|
| A. Less than 15,000 lbs/hr | 5.43 |
| B. 15,000 lbs/hr or greater | 2.72 |

ROXUL calculated the maximum capacity of the afterburner to be 24.4 tons/hour. Using this value in the above equation produces a PM emission limit of 66.37 lbs/hr. This permit will limit total PM emissions from the WESP (including emissions from sources other than the afterburner) to 8.00 pounds per hour. This is far below the 45CSR6 limit, therefore streamlining language was added to Condition 4.1.12.f.2.i..

**45CSR7: To Prevent & Control Particulate Matter Air Pollution From Manufacturing Processes & Associated Operations**

The Material Handling Operations, Melting Furnace, Gutter Exhaust, Spinning Chamber, Curing Oven, and Cooling Section are subject to 45CSR7.

Pursuant to §45-7-2.20, a "manufacturing process" means "any action, operation or treatment, embracing chemical, industrial or manufacturing efforts . . . that may emit smoke, particulate matter or gaseous matter." 45CSR7 has three substantive requirements applicable to the particulate matter-emitting operations at the RAN Facility. These are the opacity requirements under Section 3, the mass emission standards under Section 4, and the fugitive emission standards under Section 5. Each of these sections will be discussed below.

**45CSR7 Opacity Standards - Section 3**

§45-7-3.1 sets an opacity limit of 20% on all "process source operations." Pursuant to §45-7-2.38, a "source operation" means the last operation in a manufacturing process preceding the emission of air contaminants [in] which [the] operation results in the separation of air contaminants from the process materials or in the conversion of the process materials into air contaminants and is not an air pollution abatement operation." This language would define all particulate matter emitting sources as "source operations" under 45CSR7 and, therefore, these sources would be subject to the opacity limit [after control]. Based on ROXUL's use of BACT-level particulate matter controls [such as baghouses, fabric filters, enclosures, etc.], these measures should, if maintained and operated correctly, allow the particulate matter emitting sources to operate in compliance with the 20% opacity limit. Under condition 4.2.13.c compliance with the §45-7-3.1 visible emission standards shall be demonstrated using the procedures outlined in 45CSR7A. However, there are other visible emission compliance methods specified in the permit that are used to meet more stringent opacity limits than those in Rule 7. For example the material handling operations must meet the more stringent opacity limits of 40 C.F.R. 60 Subpart OOO (conditions 4.1.2.j.1, 4.1.2.j.2, and 4.1.2.j.4) and demonstrate compliance using the methods specified in 40 C.F.R. 60 Subpart OOO.

**45CSR7 Weight Emission Standards - Section 4**

§45-7-4.1 requires that each manufacturing process source operation or duplicate source operation meet a maximum allowable "stack" particulate matter limit based on the weight of material processed through the source operation. As the limit is defined as a "stack" limit (under Table 45-7A), the only applicable emission units (defined as type ‘a' sources, with the exception of the Melting Furnace which is a type ‘d’ source) are those that are non-fugitive in nature. The particulate matter limits given under 45CSR7 only address filterable particulate matter.

Due to the large process weight-rates used in the production of mineral wool and the BACT-level particulate matter controls on particulate matter-emitting units, it is reasonable to assume that the Table 45-7A limits will be easily met. In its original R13 application, ROXUL divided the facility into four sections for 45CSR7 compliance demonstration: Mineral Wool Line, Rockfon Line, Coal Milling, and Material Handling. They then used the process weight rate (PWR) of each line to determine what the aggregate Table 45-7A particulate matter limit would be. This analysis showed that the aggregate particulate matter emissions from each section was in compliance with the calculated emission limit. Note that the Coal Milling and Rockfon Lines were not constructed and were removed with the issuance of R14-0037A.

This method is very conservative as 45CSR7 allows the use of the PWR on an emissions-unit basis to calculate the particulate matter limit for that specific emissions unit. As most processes are serial in nature, the aggregate limit (or a value near to it) would apply in most cases on an individual emission-unit basis and not on the aggregate emissions of a group of emission units. Therefore, using the line PWR to determine an aggregate emission limit is considered a reasonable (and very conservative) methodology to determine §45-7-4.1 compliance with a large number of particulate matter sources. The Table below shows a comparison of the limits allowed under 45CSR§7-4.1 and the limits set by the associated NSR permit and the Title V permit.

| | 45CSR§7-4.1 Limits | NSR/Title V Permitted Limits |
|---|---|---|
| Material Handling Operations (IMF07, IMF08, IMF09, IMF10, IMF11, IMF12, IMF14, IMF15, IMF16, IMF17, IMF21, CE01, CE02, CM08, CM09, CM10, CM11) | 31.39 lb/hr (aggregate) | 2.56 lb/hr (aggregate) |
| Melting Furnace Portable Crusher (B170) | 40 lb/hr | 0.81 lb/hr |
| Melting Furnace (IMF01) | 12.63 lb/hr | 2.32 lb/hr |
| Gutter Exhaust (GUT-EX), Spinning Chamber (SPN), Curing Oven Hoods (CO-HD), Curing Oven (CO), and Cooling Section (CS) | 31.39 lb/hr (aggregate) | 8.00 lb/hr (aggregate) |

Streamlining language has been added to conditions 4.1.2.i.3, 4.1.4.b.3, and 4.1.5.b.3 to clarify that compliance with the 45CSR§7-4.1 PM weight limits are met by meeting the more stringent PM limits of conditions 4.1.2.c, 4.1.2.e, 4.1.4.a, and 4.1.5.a.

§45-7-4.2 requires that mineral acids shall not be released from manufacturing process source operations or duplicate source operations in excess of the quantity given in Table 45-7B. The Melting Furnace (IMF01) has potential emissions of sulfuric acid and hydrochloric acid, both of which are regulated under Table 45-7B. The limits for sources installed after July 1, 1970 are: $H_2SO_4$ - 35 mg/m$^3$, HCl - 210 mg/m$^3$. The emission rates of $H_2SO_4$ and HCl from the Melting Furnace are 35 and 3.9 mg/m$^3$, respectively. The emission rates are in compliance with the Table 45-7B limits and were used to calculate the limits for $H_2SO_4$ and HCl in condition 4.1.4.a. Therefore, streamlining language was added to condition 4.1.4.b.4 to clarify that compliance with the HCl and $H_2SO_4$ limits of condition 4.1.4.a shall show compliance with the less stringent limits from 45CSR§7-4.2.

**45CSR7 Fugitive Emissions - Section 5**

Pursuant to §45-7-5.1 and 5.2, each manufacturing process or storage structure generating fugitive particulate matter must include a system to minimize the emissions of fugitive particulate matter. The use of various BACT-level controls on material transfer points as specified in the BACT Analysis conducted for R14-0037 and outlined in the Preliminary Determination/Fact Sheet for the Construction of ROXUL USA, Inc.'s Ran Facility, dated March 8, 2018; the paving and use of a vacuum sweeper truck on the haul roads; and the management of on-storage pile activity are considered reasonable systems of minimizing the emissions of fugitive particulate matter at the facility.

**45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides**

45CSR10 has requirements limiting $SO_2$ emissions from "fuel burning units," limiting in-stack $SO_2$ concentrations from "manufacturing processes," and limiting hydrogen sulfide ($H_2S$) concentrations in process gas streams. The PreHeat Burner (IMF24) and Natural Gas Boilers 1 and 2 (CM03 and CM04) are each defined as fuel burning units ("producing heat or power by indirect heat transfer"). However, pursuant to the exemption given under §45-10-10.1, as the MDHI of each of these units is less than 10 mmBtu/hr, these units are not subject to the limitations on fuel burning units under 45CSR10. The ROXUL facility also does not combust any process gas streams that potentially contain $H_2S$, so they are not subject to §45-10-5.1.

However, the Melting Furnace stack, after control by the sorbent injection system, is subject to the limitation on in-stack $SO_2$ concentrations. Pursuant to §45-10-4.1, the Melting Furnace stack (IMF01) shall not exceed "an in-stack sulfur dioxide concentration [of] 2,000 parts per million by volume." Based on information submitted by ROXUL (IMF01: 33.63 lb-$SO_2$/hr, 21,413.73 scfm, 301.73 ℉), the writer calculated a maximum in-stack $SO_2$ concentration of 227.48 ppmv, or approximately 11% of the §45-10-4.1 limit. The $SO_2$ emission limits in condition 4.1.4.a were set assuming a concentration of 450 mg/Nm$^3$ (~172 parts per million) which is less than the 45CSR§10-4.1 limit of 2,000 parts per million. Therefore, streamlining language was added to condition 4.1.4.c to clarify that compliance with the $SO_2$ emission limits of condition 4.1.4.a shall show compliance with the less stringent $SO_2$ limits from 45CSR§10-4.1.

**45CSR13**

R14-0037B has been incorporated into the Proposed Title V permit. With the issuance of R14-0037A, the facility was no longer a major source per 45CSR14 (see Non-Applicable Determinations).

**40 C.F.R. 60, Subpart OOO: Standards of Performance For Nonmetallic Mineral Processing Plants.**

Subpart OOO is the federal NSPS relating to the performance of non-metallic mineral processing plants. The RAN Facility contains equipment that is subject to Subpart OOO. The following discusses the substantive applicable requirements of Subpart OOO relating to the RAN Facility.

Pursuant to §60.670, affected facilities under Subpart OOO include "each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station" located at a "fixed or portable nonmetallic mineral processing plant[s]." Pursuant to §60.671, "Nonmetallic mineral processing plant" is defined as "any combination of equipment that is used to crush or grind any nonmetallic mineral. . ." The definition of "nonmetallic mineral" includes limestone, dolomite, and other minerals which may be contained in stone raw materials that are sieved, crushed (if necessary), and conveyed at the RAN Facility. Therefore, Subpart OOO is applicable to various equipment/operations at the facility.

However, the recycling operations (do not involve non-metallic minerals handling) and the melting furnace portable crusher (less than 150 tons per hour capacity) are not subject to Subpart OOO. Additionally, raw material handling in the furnace building is not considered a non-metallic mineral processing plant as it is part of the mineral wool production operations.

Per §60.672(d), truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from PM standards of NSPS Subpart OOO, which would exclude the Raw Material Loading Hopper (B215). Vacuum systems are not identified as affected facilities in NSPS Subpart OOO; therefore, the Charging Building Vacuum Cleaning Filter (IMF21) is not subject to NSPS Subpart OOO. The remaining affected sources subject to PM emissions limits include the belt conveyor connected to the charging building (IMF11); indoor conveyor transfer points IMF12 and IMF16; outdoor transfer point IMF15; indoor sieve, crusher, storage bins, and belt conveyors located inside the charging building (represented by IMF17); and Raw Material Reject Outdoor Collection Bin (RM_REJ). The Filter Fines Day Silo (IMF07) and Filter Fines Receiving Silo (IMF10) are conservatively considered as part of the nonmetallic mineral processing plant because the silos will store stone or mineral raw materials that have been through the charging building operations.

Table 4-1 in the R14-0037A permit application (pp. 9) provides a summary of Subpart OOO in tabular form.

Section §60.672 sets the following particulate matter standards for affected facilities under Subpart OOO:

| Reference | Affected Facility | Stack Emissions | |
|---|---|---|---|
| | | Mass (gr/dscf) | Opacity (%) |
| Table 2 (IMF07, IMF10) | Affected Facilities with Capture Systems | 0.014 | 7 for dry control devices on individual enclosed storage bins |
| Table 3 (RM_REJ, IMF14, IMF11) | Affected Facilities (non-crushers) without Capture Systems (RM_REJ, IMF14, IMF11) | n/a | 7 |
| Table 3 | Crushers without Capture System | n/a | 12 |

| Reference | Affected Facility | Stack Emissions | |
|---|---|---|---|
| | | Mass (gr/dscf) | Opacity (%) |
| §60.672(d) (B215) | Truck Dumping | n/a | n/a |
| §60.672(e) (IMF17, IMF12, IMF16, IMF15) | Affected Facilities inside a Building | Must meet Table 2 or Table 3 limits or building openings/vents must meet: | |
| | Building Openings | n/a | 7 |
| | Building Vents | Table 2 Limits | |
| §60.672(f) (IMF07, IMF10) | Enclosed Storage Bins w/ Baghouse | n/a | 7 |

**40 C.F.R. Part 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

Subpart IIII of 40 C.F.R. 60 is the NSPS for stationary compression ignition internal combustion engines (diesel fired engines). Section §60.4200 states that "provisions of [Subpart IIII] are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE)." Specifically, §60.4200(a)(2) states that Subpart IIII applies to "[o]wners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

ROXUL has installed a 316 hp certified fire pump engine with a displacement of less than 30 liters per cylinder (EFP1). Pursuant to §60.4205(c), "owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants." Table 4 of Subpart IIII gives the following limits for ROXUL's fire pump engine:

| Emission Standards - g/kW-hr (g/hp-hr) | | |
|---|---|---|
| NMHC + $NO_X$ | CO | PM |
| 4.0 (3.0) | 3.5 (2.6) | 0.20 (0.15) |

Pursuant to §60.4211(c), ROXUL purchased an engine certified to comply with the standards given above. Additionally, ROXUL has or will:

Operate and maintain the engine according to the manufacturer's emission related written instructions, change only those emission-related settings as permitted by the manufacturer, and comply with 40 C.F.R. 1068, as they apply [§60.4211(a)];

Install a non-resettable hour meter and limit operation to 100 hours per year of recommended maintenance checks and readiness testing, 50 of those hours may be used for non-emergency operation [§60.4209(a), §60.4211(f)];

Purchase diesel fuel meeting a sulfur content of 15 ppm and a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent pursuant to 40 C.F.R. §1090.305 for non-road diesel fuel [§60.4207(b)]; and

Recordkeeping of conducted maintenance and operating hours, including reason for operation, and any other applicable notifications, reporting, and recordkeeping requirements of §§60.4211(g) and 60.4214.

**40 C.F.R. 63, Subpart DDD: National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production**

Subpart DDD of 40 C.F.R. 63 applies to owners or operators of mineral wool production facilities that are located at major sources of HAP emissions. Beginning in November 2011, the EPA proposed a series of revisions to the Mineral Wool MACT as required by the residual risk and technology review per the CAA. The final revisions were promulgated in the Federal Register and made effective on July 29, 2015.

The ROXUL facility is subject to the requirements for new affected facilities under the Mineral Wool MACT (the RAN Facility is defined as a major source of HAPs). Although ROXUL's Melting Furnace design can be differentiated from that of a traditional cupola, it does meet the current NESHAP Subpart DDD definition of a cupola ("a large, water-cooled metal vessel to which a mixture of fuel, rock and/or slag, and additives is charged and heated to a molten state for later processing"). The revised standard includes emissions limits for carbonyl sulfide (COS) for open-top and closed-top cupolas (which replaces the CO limit under the previous rule), hydrogen fluoride (HF) and hydrochloric acid (HCl) limits for cupolas with and without slag, and combined collection (spinning) and curing oven emission limits for formaldehyde, methanol, and phenol.

Pursuant to §63.1178(a), the emission limits are given under Table 2 of Subpart DDD. The final revised emission limitations for new affected sources and the subcategories applicable to ROXUL are given below.

| Affected Facility | Emission Unit (Emission Point) | Limitation | Citation |
|---|---|---|---|
| Cupolas | Melting Furnace (IMF01) | 0.10 lb PM(1)/ton melt | Table 2, Item 2 |
| Open-top Cupola(2) | | 3.2 lb COS/ton of melt | Table 2, Item 8 |
| Cupola using Slag(3) | | 0.015 lb HF/ton of melt<br>0.012 lb HCl/ton of melt | Table 2, Item 10 |
| Combined Vertical(4) Collection/Curing | Gutter Exhaust, Spinning Chamber, Curing Oven, Cooling Section (HE01) | 2.4 lb formaldehyde/ton of melt<br>0.71 lb phenol/ton of melt<br>0.92 lb methanol/ton of melt | Table 2, Item 24 |

(1) The NESHAP Subpart DDD limit for PM is for filterable PM only.
(2) The Melting Furnace design is open-top, because there is an opening at the top of the melter and air flow is unrestricted.
(3) The Melting Furnace uses slag as a feed material.

(4) NESHAP Subpart DDD does not define the various collection designs. As described by the preamble to the proposed rule, ROXUL operates a vertical collection process [76 FR 72770, November 25, 2011].

**40 C.F.R. Part 63, Subpart JJJJ: National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating**

40 C.F.R. 63, Subpart JJJJ is a federal MACT that establishes emission standards for web coating lines and specifies compliance procedures for a facility with web coating lines that is a major source of HAPs. The ROXUL facility is a major source of HAPs.

Only the application of fleece binder material on the mineral wool line (CM12 and CM13) is subject to this regulation. ROXUL complies with this regulation by using 'as-applied' compliant coatings pursuant to the procedures in §63.3370(a)(2)(iii). This limits the as-applied binder to a monthly average VOC content of 0.016 lbVOC/lb-binder by following the procedures set out in § 63.3370(c)(3).

**40 C.F.R. 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

40 C.F.R. 63, Subpart ZZZZ is a federal MACT that establishes national emission limitations and operating limitations for HAPs emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. As the RAN Facility is defined as a major source of HAPs, the facility is subject to the applicable requirements of Subpart ZZZZ. Pursuant to §§63.6590(c) and (c)(5):

> (c)"An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part."
>
> > (5) "A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions."

As discussed above, the Emergency Fire Pump Engine (EFP1) complies with NSPS Subpart IIII. Compliance with 40 C.F.R. 60, Subpart IIII will demonstrate compliance with 40 C.F.R. 63, Subpart ZZZZ.

**40 C.F.R. 63, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters**

40 C.F.R. 63, Subpart DDDDD is a federal MACT rule that establishes national emission limitations and work practice standards for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAPs. The ROXUL facility is a major source of HAPs.

Pursuant to §63.7485, Subpart DDDDD applies to "an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAPs." As noted, the RAN Facility is defined as a major source of HAPs. Based on the definition of "boiler" and "process heater," the PreHeat Burner (IMF24) and Natural Gas Boilers 1 and 2 (CM03 and CM04) are subject to Subpart DDDDD as new affected sources and are required to be in compliance with the Boiler MACT. None of the units are, however, pursuant to §63.7500(e), subject to any emission standards: "Boilers and process heaters in the units designed to burn gas 1 fuels subcategory [includes natural gas] are not subject

to the emission limits in Tables 1 and 2 or 11 through 15 to this subpart, or the operating limits in Table 4 to this subpart." However, the units are subject to the following requirements:

40 C.F.R. §63.7500(a)(1), §63.7540(a)(11), & (12) and Table 3 (Line 1 & Line 2) – Natural Gas Boilers 1 and 2 (CM03 and CM04) must conduct a tune-up of the unit every five (5) years and PreHeat Burner (IMF24) must conduct biennial tune-ups.

40 C.F.R. §§63.7550(b) and (c) - Must submit a compliance report after each periodic tune-up

40 C.F.R. §§63.7555(a)(1) and (2) – Maintain records of notifications and reports submitted to show compliance.

40 C.F.R. §63.7560 – Maintain records in a form suitable and readily available for expeditious review for five (5) years.

**40 C.F.R. 64: Compliance Assurance Monitoring (CAM)**

The ROXUL USA Inc. RAN Facility has emission units that are potentially subject to CAM.

The Spinning Chamber (Emission Unit ID: SPN) is a PSEU for $PM_{2.5}$, $PM_{10}$, and PM and emissions are controlled by the Wet Electrostatic Precipitator (WESP, Emission Point ID: HE01).

- The Spinning Chamber has potential post-control device emissions of $PM_{2.5}$, $PM_{10}$, and PM which are less than major source thresholds. This emission unit is classified as an "Other pollutant-specific emissions unit" under 40 C.F.R. §64.5(b), which means that a CAM plan is not required to be submitted until the Title V Permit Renewal.

The Melting Furnace (Emission Unit ID: IMF01) is a potential PSEU for $PM_{2.5}$, $PM_{10}$, PM, $SO_2$, and $NO_X$ and emissions are controlled by a Baghouse (IMF01-BH), an Inherent Selective Non-Catalytic Reduction by Ammonia Injection System (De-$NO_X$), and a Sorbent Injection System (De-$SO_X$).

- The $SO_2$ and $NO_x$ emission limits for the Melting Furnace are exempt from CAM under 40 C.F.R. §64.2(b)(1)(vi) since R14-0037B specifies the use of CEMS as a continuous compliance determination method.

- The PM emission limits for the Melting Furnace are specified under 40 C.F.R. 63, Subpart DDD. This exempts them from CAM under 40 C.F.R. §64.2(b)(1)(i).

The Curing Oven (Emission Unit ID: CO) is a potential PSEU for VOCs and HAPs and emissions are controlled by a thermal oxidizer (CO-AB).

- The Curing Oven is subject to 40 C.F.R. 63, Subpart DDD and therefore meets the exemption criteria of 40 C.F.R. §64.2(b)(1)(i).

The De-Dusting Baghouse (Emission Unit ID: CE01) and Vacuum Cleaning Baghouse (Emission Unit ID: CE02) are PSEUs for $PM_{2.5}$, $PM_{10}$, and PM and emissions are controlled by Baghouses CE01-BH and CE02-BH.

- Emission Units CE01 and CE02 have potential post-control device emissions of $PM_{2.5}$, $PM_{10}$, and PM which are less than major source thresholds. These emission units are classified as an "Other

pollutant-specific emissions unit" under 40 C.F.R. §64.5(b), which means that a CAM plan is not required to be submitted until the Title V Permit Renewal.

Recycle Plant Building Vents 1 & 2 (Emission Unit IDs: CM10 & CM11) are PSEUs for $PM_{2.5}$, $PM_{10}$, and PM and emissions are controlled by Baghouses CM10-FF and CM11-FF.

- Recycle Plant Building Vents 1 & 2 have potential post-control device emissions of $PM_{2.5}$, $PM_{10}$, and PM which are less than major source thresholds. These emission units are classified as an "Other pollutant-specific emissions unit" under 40 C.F.R. §64.5(b), which means that a CAM plan is not required to be submitted until the Title V Permit Renewal.

Conveyor Transfer Point (IMF11), Charging Building Vacuum Cleaning Filter (IMF21), Filter Fines Day Silo (IMF07), Sorbent Silo (IMF08), Spent Sorbent Silo (IMF09), Filter Fines Receiving Silo (IMF10), and Recycle Plant Building Vents 3 & 4 (CM08 & CM09) use Fabric Filters to control $PM_{2.5}$, $PM_{10}$, and PM.

- CAM is not applicable to these emission units per 40 C.F.R. §64.2(a)(3) since the pre-control device potential to emit does not exceed major source thresholds.

## Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

a. **45CSR14:** Permits For Construction And Major Modification Of Major Stationary Sources For The Prevention Of Significant Deterioration Of Air Quality.

When ROXUL first submitted its original R14 permit application in 2017, the projected potential to emit of VOCs exceeded 250 tons per year (the facility type is a "non-listed" source) and PSD review was required. Since $NO_X$, $PM_{2.5}$, $PM_{10}$, PM, $SO_2$, VOCs, GHGs, and $H_2SO_4$ exceeded the significance threshold, they were also subject to PSD review. The substantive requirements of a PSD review include a BACT analysis, an air dispersion modeling analysis, a review of potential impacts on Federal Class 1 areas, and an additional impacts analysis. All of these analyses were performed during the 2017 application review.

However, based upon actual stack testing performed at the RAN facility, it has been determined that the actual PTE of VOCs from the facility are significantly less than 250 tons per year. Therefore, with the issuance of permit R14-0037A, the RAN facility was no longer defined as a major source per 45CSR14. It should be noted that, despite this reclassification, no weakening or removal of any BACT level control requirement was included in R14-0037A or R14-0037B.

b. **40 C.F.R. 60, Subpart Dc**: The Preheat Burner (IMF24) and Natural Gas Boilers 1 and 2 (CM03 and CM04) are each defined as a "steam generating unit" but each also have an MDHI of less than 10 mmBtu/hr which exempts the units from Subpart Dc. The remaining combustion units either do not use a heat transfer medium or are properly defined as a process heater and, therefore, no units at the facility are subject to Subpart Dc.

c. **40 C.F.R. 60, Subpart Kb:** All tanks that store volatile organic liquids at the facility have capacities less than 75 $m^3$ (19,813 gallons) and are, therefore, not subject to the requirements of Subpart Kb.

d. **40 C.F.R. 60, Subpart VVV:** This subpart does not apply because the mineral wool fleece coating operation does not utilize coating mix preparation equipment or coating operations where the VOC content of the coating exceeds 9 percent by weight of the volatile fraction (§60.740(d)(2)).

e. **40 C.F.R. 63, Subpart OOOO:** This subpart does not apply to the facility since web coatings that are an affected source under 40 C.F.R. 63, Subpart JJJJ are not subject to the requirements of Subpart OOOO.

## Request for Variances or Alternatives

None.

## Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

## Comment Period

**Draft Comment Period (Public)**
Beginning Date: May 22, 2024
Ending Date: August 2, 2024

**Proposed Comment Period (EPA)**
Beginning Date: June 5, 2025
Ending Date: July 21, 2025

## Point of Contact

All written comments should be addressed to the following individual and office:

Robert Mullins
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/926-0499 ext. 41286
Robert.A.Mullins@wv.gov

## Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

## Response to Comments (Statement of Basis)

The West Virginia Division of Air Quality (WV DAQ) published a Class I legal notice for the Draft/Proposed Title V Permit in the *Spirit of Jefferson Advocate* on May 22, 2024, beginning concurrent Draft and Proposed comment periods. During the public comment period for the Draft/Proposed Title V Permit, a request for a public hearing was received and the request was granted by the Director. Since comments were received during the public comment period, the initial Title V Permit will no longer be reviewed concurrently and will instead be reviewed sequentially with separate Draft and Proposed comment periods. WV DAQ published a Class I legal notice for the Draft Permit and virtual public hearing

in the *Spirit of Jefferson Advocate* on June 19, 2024. The virtual public hearing was held on July 23, 2024. The written comment period for the Draft Title V Permit ended on August 2, 2024, ten (10) days after the public hearing.

WV DAQ received numerous comments during the public comment period. Please see the Response to Comments document for more detail. The following changes were made to the permit in response to the comments.

- Updated conditions 4.1.2.i, 4.1.4.b, and 4.1.5.b to replace references to "subsection" and "rule" with a reference to 45CSR7 in the body of the condition.
- Added streamlining language to conditions 4.1.2.i.3, 4.1.2.j.1, 4.1.2.j.2, 4.1.2.j.4, 4.1.4.b.3, 4.1.4.b.4, 4.1.4.c, 4.1.5.b.3, and 4.1.12.f.2.i.
- Updated condition 4.1.2.j to include references to the emission point IDs IMF07, IMF10, RM_REJ, IMF14, and IMF11 in the body of the condition instead of only in the citations.
- Updated condition 4.1.4.c to replace the reference to "subdivisions" with a reference to 45CSR10 in the body of the condition.
- Updated conditions 4.1.6, 4.1.8.e, 4.1.10.c, 4.1.12.d.2, 4.1.12.f.3, 4.2.7.c, 4.3.7, 4.4.4, 4.4.5, 4.4.6, 4.4.7, 4.4.8, 4.5.2, 4.5.3, 4.5.4, and 4.5.5 to replace language commenters referred to as "ambiguous."
- Updated conditions 4.1.6, 4.2.7, 4.2.9, 4.2.13.a, 4.3.6, 4.3.7, 4.4.4, 4.4.5, 4.4.6, 4.4.7, 4.4.8, 4.5.2, 4.5.4, and 4.5.5 to indicate which equipment is subject to the requirements.
- Updated condition 4.1.8.e to include the emission point IDs IMF24, CM03, and CM04 in the body of the condition instead of only in the citations.
- Removed condition 4.1.4.d.3 since IMF01 does not utilize a thermal oxidizer as an add-on control device thus making 40 C.F.R. §63.1182 non-applicable to IMF01.
- Revised the first sentence of condition 4.2.6 as follows for clarity (changes are underlined): In order to show continuous compliance with the CO, $NO_X$, and $SO_2$ emission limits as given under Table 4.1.4.a., the permittee <u>shall</u> install and operate a Continuous Emissions Monitoring System (CEMS) for monitoring the emissions of CO, $NO_X$, and $SO_2$ from IMF01.
- Removed conditions 4.2.13.d.1.ii and 4.1.13.d.1.iii since they are alternatives to visible emissions testing under condition 4.2.13.d.1.i. and are not utilized at the facility.
- Added a note to condition 4.2.16 indicating that the 40 C.F.R. 63 Subpart DDD OMM plan was submitted as part of the Title V Application Amendment received on January 30, 2025 and was reviewed and approved by WV DAQ.

The following changes were made due to the issuance of the Class I Administrative Update R14-0037B:

- The typo to the HCl emission limitation in condition 4.1.4.a that had previously been noted has been corrected and the note removed.
- The note in condition 4.1.5.a indicating that the $PM_{2.5}$ limit was appealed has been removed following the issuance of the AQB's Final Order which denied ROXUL's appeal of condition 4.1.5.a.
- Condition 4.1.11 has been updated to only require the eight (8) charging building doors to remain closed in accordance with the AQB's Final Order for the appeal.

The following boilerplate changes have been made to the permit. These changes to the boilerplate became effective September 23, 2024.

- Condition 3.1.6 - Revised the citation to refer to the current version of the WV Code.
- Condition 3.3.1. - Revised the citation to refer to the current version of the WV Code.

- Condition 3.3.1.b. - Added "If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit shall be revised in accordance with 45CSR§30-6.4 or 45CSR§30-6.5 as applicable."

The following changes were made to the permit due to 40 C.F.R. 60 Subpart IIII being amended on August 30, 2024.

- Updated conditions 4.1.10.c.2 and 4.4.8 to reflect changes in 40 C.F.R. 60 Subpart IIII.