

State Registration Number  
N1794

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-N1794-2024

**Atlas Molded Products, A Division of Atlas Roofing Corporation**

State Registration Number (SRN): N1794

Located at

8240 Byron Center Avenue SW, Byron Center, Kent County, Michigan 49315

Permit Number: MI-ROP-N1794-2024

Staff Report Date: October 23, 2023

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

## TABLE OF CONTENTS

<b>October 23, 2023 - STAFF REPORT</b>	<b>3</b>
<b>November 27, 2023 - STAFF REPORT ADDENDUM</b>	<b>9</b>
<b>January 12, 2024 - STAFF REPORT ADDENDUM</b>	<b>10</b>

**RENEWABLE OPERATING PERMIT**

**October 23, 2023 - STAFF REPORT**

**Purpose**

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan’s Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source’s applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

**General Information**

Stationary Source Mailing Address:	Atlas Molded Products 8240 Byron Center Avenue SW Byron Center, Michigan 49513
Source Registration Number (SRN):	N1794
North American Industry Classification System (NAICS) Code:	326140
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202100105
Responsible Official:	Tim Van Hoeven, Plant Manager 616-583-1337
AQD Contact:	April Lazzaro, Senior Environmental Quality Analyst 616-558-1092
Date Application Received:	July 6, 2021
Date Application Was Administratively Complete:	July 21, 2021
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	October 23, 2023
Deadline for Public Comment:	November 22, 2023

## Source Description

Atlas EPS, A Division of Atlas Roofing Corporation (Atlas) is a manufacturer of expandable polystyrene (EPS) products. Atlas is located in southwest Kent County in a residential area between an elementary school and residential homes and adjacent to commercial businesses. The facility itself consists of two buildings that are connected via a corridor. Atlas uses the EPS beads to make polystyrene foam and foam products. The products are primarily used for construction related activities, including garage doors and other insulation-type products. Atlas receives the raw material as a very small, hollow polystyrene bead that is then expanded; pentane is the blowing agent contained in the bead which allows for the bead to expand when steam is applied. Steam is used to both expand and mold the beads. Atlas uses three (3) approximately 8 MMBTU boilers to create the necessary steam for the expansion and molding processes. A majority of the pentane is emitted at this point. Atlas has four (4) molding machines and three (3) expanding machines. The emissions from the expansion process are ducted over to the regenerative thermal oxidizer (RTO) which destroys 98%+ of the pentane emissions prior to being emitted to the atmosphere. The 95%+ destruction efficiency was as determined by the most recent stack testing conducted on the RTO in 2012. Stack testing was conducted on March 22, 2022, to verify compliance with the 98% destruction efficiency requirement and results indicated compliance. Atlas utilizes cooling towers to recycle water through the system to cool down the molding machines in between runs.

After the polystyrene beads are expanded, they are stored to allow for further off-gassing of the pentane. The pentane emissions from the holding area are released into the in-plant environment. The bead can be held anywhere between four (4) hours and three (3) days. When the beads are ready to be molded, they are brought to the molding machines where additional steam is applied. The beads are steam molded into large rectangular blocks. These blocks are then held in storage to allow them to age for a period of time to the proper moisture content and allow for any additional off-gassing of pentane. The blocks may be held in one of several uncontrolled "hot" rooms, which are heated to up to 140°F. When the blocks are appropriately aged, they are brought to the production area where the blocks are cut to the appropriate length and thickness. The foam may also be embossed at this point in the production process.

Additional operations in the facility include recycling and re-use of the scrap foam. The scrap foam is shredded, and then re-condensed in one of the densifying machines. Some of the foam is put back into the production process at the facility, while the rest is externally sold.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2022**.

### **TOTAL STATIONARY SOURCE EMISSIONS**

<b>Pollutant</b>	<b>Tons per Year</b>
Carbon Monoxide (CO)	2.66
Lead (Pb)	0.00
Nitrogen Oxides (NO <sub>x</sub> )	3.16
Particulate Matter (PM)	0.24
Sulfur Dioxide (SO <sub>2</sub> )	0.02
Volatile Organic Compounds (VOCs)	216.39

The following table lists allowable Hazardous Air Pollutant emissions for the for the two months since permit issuance:

<b>Individual Hazardous Air Pollutants (HAPs) **</b>	<b>Tons per Year</b>
Styrene	0.58
Ethylbenzene	0.29
<b>Total Hazardous Air Pollutants (HAPs)</b>	<b>0.87</b>

\*\*As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

### **Regulatory Analysis**

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is in Kent County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of volatile organic compounds exceeds 100 tons per year. The stationary source is a minor source of HAP emissions because the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

FGEPS at the stationary source was subject to review under the Prevention of Significant Deterioration (PSD) regulations of The Michigan Air Pollution Control Rules Part 18, Prevention of Significant Deterioration of Air Quality because at the time of New Source Review (NSR) permitting in 1997 the potential to emit of VOCs was greater than 250 tons per year. The stationary source has since permitted emission units that were subject to Rule 220 for Major Sources Impacting Nonattainment Areas (now Rule 1908) because Kent County was in non-attainment from 1992-1995 at the time of NSR permitting actions at the facility. FGEPS is an existing PSD major source for VOC, with a permit limit more than 250 tons per year.

Additional NSR permitting was conducted in 2022 with the project that included the addition of EUMOLD8. The facility used a hybrid analysis with a look-back period of 10 years to determine the baseline and to demonstrate the new project was not subject to PSD. With the hybrid method, the Actual to Potential applicability analysis was used to determine the change in emissions from EUMOLD8. The projected difference in emissions for the installation of EUMOLD8 was calculated to be less than a 40 ton per year change of VOCs, and therefore not subject to PSD review.

Emission limits for FGEPS at the stationary source are subject to Rule 702 Best Available Control Technology (BACT) as specified by the department. An additional limit for styrene emissions from EUMOLD8 were included pursuant to air toxics Rule 225.

In 2019, a project was permitted to replace two existing natural gas boilers (EUBOILER1 and EUBOILER2) with one new boiler identified as EUBOILER4 and to relocate an existing boiler (EUBOILER3). The new boiler (EUBOILER4) is a 12.563 MMBTU/hr natural gas-fired unit that is subject to the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units promulgated in 40 CFR Part 60, Subpart Dc. This project also replaced an existing expander (EUEXPANDER4) with a new batch expander (EUEXPANDER6) and relocated an existing expander (EUEXPANDER5) within the facility.

During the NSR permitting, the permittee identified that an expander (EUEXPANDER3) had been removed from the facility, and as such it was removed from the permit.

In 2021, the Regenerative Thermal Oxidizer (RTO) that controls emissions from EUEXPANDER5 and EUEXPANDER6 was replaced due to degradation of the existing unit and a permit was issued. Changes in the permit include an increased operating temperature of the RTO per the manufacturer's operating recommendations as well as changes to the stack height and diameter.

The AQD's Rules 287 and 290 were revised on December 20, 2016. FGRULE287(2)(c) and FGRULE290 are flexible group tables created for emission units subject to these rules. Emission units installed before December 20, 2016 can comply with the requirements of Rule 287 and Rule 290 in effect at the time of installation or modification as identified in the tables. However, emission units installed or modified on or after December 20, 2016 must comply with the requirements of the current rules as outlined in the tables.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

EURTO (EUEXPANDER5 and EUEXPANDER6) have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because the units have potential pre-control emissions of VOC over the major source thresholds. Both EUEXPANDER5 and EUEXPANDER6 are controlled by a Regenerative Thermal Oxidizer (RTO). Pre-control VOC emissions are over 130 tons per year and can be calculated by eliminating the control efficiency of the RTO.

The following Emission Units/Flexible Groups are subject to CAM:

<b>Emission Unit/Flexible group ID</b>	<b>Pollutant/ Emission Limit</b>	<b>UAR(s)</b>	<b>Control Equipment</b>	<b>Monitoring (Include Monitoring Range)</b>	<b>Emission Unit/ Flexible Group for CAM</b>	<b>PAM? *</b>
EURTO (EUEXPANDER5 and EUEXPANDER6)	VOC/ 1.86 lb/hr	<b>R 336.1205</b> <b>R 336.1702(a)</b> <b>R 336.1220(1)</b> <b>(a)(i)(A)</b> <b>R 336.2908</b>	Regenerative Thermal Oxidizer	Combustion Temperature above 1,525° F	EURTO and FGEPS	No
FGEPS	272.4 lb/hr 374.5 tpy apply to FGEPS					
EURTO (EUEXPANDER5 and EUEXPANDER6)	VOC/ 1.86 lb/hr	<b>R 336.1205</b> <b>R 336.1702(a)</b> <b>R 336.1220(1)</b> <b>(a)(i)(A)</b> <b>R 336.2908</b>	Capture system	Static pressure of the capture system: - 0.13" to 0.0" w.c.	EURTO and FGEPS	No
FGEPS	272.4 lb/hr 374.5 tpy apply to FGEPS					

EURTO (EUEXPANDER5 and EUEXPANDER6) is controlled by an RTO which is equipped with a digital temperature monitoring device located in the combustion chamber, as well as two digital pressure drop monitoring devices located in the system ductwork. The RTO monitoring devices monitor and record data once every 10 seconds. The capture system has two independent monitoring devices which continuously monitor system pressure drop, and data is recorded manually at least once in a 24-hour period. Both capture system monitoring devices are connected to a system interlock. In the event the system pressure drop is out of range, an alarm will sound and EUEXPANDER5 and EUEXPANDER6 will shut down automatically.

The oxidizer operating temperature is selected because it is indicative of the control system's destruction efficiency. The collection system static pressure is selected because it is indicative of the control system's collection efficiency. The desired level of overall control efficiency is expected as a result of maintaining the capture system pressure and the operating temperature of the thermal oxidizer at or above a minimum value. If the operating pressure or temperature changes significantly, the control efficiency may be reduced.

To ensure consistent VOC control, the structural integrity of the capture and destruction systems will be inspected and maintained and the control system will be calibrated periodically. This will indicate any problems with the control system that could result in decreased performance or efficiency. The frequency, depending on the task, will be either weekly, monthly, quarterly, or annually. Additional details can be found as part of the company's internal preventative maintenance program.

The selected indicator range for the oxidizer operating temperature is based on specifications for optimal performance provided by the equipment designer, Combustion Products, International, and is incorporated into the permit conditions as established by the AQD. The selected range for the capture system static pressure is based on the desire to maintain maximum collection efficiency for each controlled emission unit.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

### **Source-Wide Permit to Install (PTI)**

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-N1794-2017 are identified in Appendix 6 of the ROP.

PTI Number			
140-08	58-02	423-97	

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

### **Non-applicable Requirements**

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

### **Processes in Application Not Identified in Draft ROP**

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

<b>PTI Exempt Emission Unit ID</b>	<b>Description of PTI Exempt Emission Unit</b>	<b>Rule 212(4) Citation</b>	<b>PTI Exemption Rule Citation</b>
EUBOILER3	8,369,000 BTU Cleaver Brooks 200 Natural Gas Boiler – Serial #L-65006/37705 installed 3/16/1978	Rule 214(4)(d)	Rule 282(2)(b)(i)
EUDENSIFIER1	Densifying machine for recycling foam – Densifier 60 XP	Rule 214(4)(d)	Rule 285(2)(l)(vi)(b)
EUDENSIFIER2	Densifying machine for recycling foam – Seabright Densifier Serial #95104456	Rule 214(4)(d)	Rule 285(2)(l)(vi)(b)
EUDENSIFIER3	Densifying machine for recycling foam – Seabright Densifier Serial #96114966	Rule 214(4)(d)	Rule 285(2)(l)(vi)(b)
EUCOOLINGTOWER4	Cooling tower for recycled water for molding equipment – AquaTower 4862 Serial # Marley 68520-1	Rule 214(4)(a)	Rule 280(2)(d)
EUCOOLINGTOWER5	Cooling tower for recycled water for molding equipment – PMS 10/180 ATT	Rule 214(4)(a)	Rule 280(2)(d)
EUCOOLINGTOWER7	Cooling tower for recycled water for molding equipment – 496M Cooling Tower Serial # AO10018578-A1	Rule 214(4)(a)	Rule 280(2)(d)

### **Draft ROP Terms/Conditions Not Agreed to by Applicant**

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

### **Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

### **Action taken by EGLE, AQD**

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Heidi Hollenbach, Grand Rapids District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

State Registration Number

N1794

**RENEWABLE OPERATING PERMIT**

**November 27, 2023 - STAFF REPORT ADDENDUM**

ROP Number

MI-ROP-N1794-2024

**Purpose**

A Staff Report dated October 23, 2023, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	Tim Van Hoeven, Plant Manager 616-583-1337
AQD Contact:	April Lazzaro, Senior Environmental Quality Analyst 616-558-1092

**Summary of Pertinent Comments**

No pertinent comments were received during the 30-day public comment period.

**Changes to the October 23, 2023 Draft ROP**

No changes were made to the draft ROP.

State Registration Number

N1794

## RENEWABLE OPERATING PERMIT

January 12, 2024 - STAFF REPORT ADDENDUM

ROP Number

MI-ROP-N1794-2024

### Purpose

A Staff Report dated October 23, 2023, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 45-day EPA comment period as described in Rule 214(3). In addition, this addendum describes any changes to the proposed ROP resulting from these pertinent comments.

### General Information

Responsible Official:	Tim Van Hoeven, Plant Manager 616-583-1337
AQD Contact:	April Lazzaro, Senior Environmental Quality Analyst 616-558-1092

### Summary of Pertinent Comments

1. An administrative review found that AQD had listed the incorrect ROP Revision Application Numbers in Appendix 6 of the permit.
2. One comment was received during the 45-day EPA comment period. EPA recommended that General Condition 19 be updated to reflect that annual compliance certifications be submitted electronically through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI).

### Changes to the November 27, 2023 Proposed ROP

1. The permit was changed to include the correct ROP Revision Application Numbers with the approval of the responsible official.
2. General Condition 19 was updated for electronic submissions to the EPA as follows:
  19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The annual compliance certification (pursuant to Rule 213(4)(c)) shall be submitted to the USEPA through the USEPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through CDX (<https://cdx.epa.gov/>), unless it contains confidential business information then use the following address: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507. **(R 336.1213(4)(c))**