

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
N7238

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N7238-2011

Polytech Moulding Industries Inc.

SRN: N7238

Located at

1609 Biddle Avenue, Wyandotte, Michigan 48192

Permit Number: MI-ROP-N7238-2011

Staff Report Date: February 28, 2011

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) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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FEBRUARY 28, 2011 STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to 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 report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit 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:	1609 Biddle Avenue Wyandotte, Michigan 48192
Source Registration Number (SRN):	N7238
North American Industry Classification System (NAICS) Code:	326121
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	200900134
Responsible Official:	Ms. Danielle Béliveau, Vice President 405-378-9093
AQD Contact:	Jeff Korniski 313-456-4681
Date Permit Application Received:	August 18, 2009
Date Application Was Administratively Complete:	August 18, 2009
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	February 28, 2011
Deadline for Public Comment:	March 30, 2011

Source Description

Polytech Moulding Industries Inc. is located in the City of Wyandotte, County of Wayne on Biddle Avenue. The facility is co-located with the BASF Corporation and Abbott Laboratories on an industrial site bounded at the north by Perry Place, at the east by the Detroit River, at the south by Mulberry Street, and at the west by Biddle Avenue. The nearest residence is located directly west of the site, on Biddle Avenue, 120 feet from the fence line.

Until April 30, 2003, this facility was a part of the industrial site's BASF Corporation operations. On April 30, 2003, the facility was sold to Concepp Technologies Inc. and on August 1, 2009, Polytech Moulding Industries Inc. assumed ownership of the plant.

The facility comprises two expanded polyolefin (EPO) plants; the operations at the two plants, EPO I and EPO II, are virtually identical. Polypropylene raw material is extruded and cut into beads. Water, tricalcium phosphate (TCP), and the polypropylene beads are charged to an impregnation vessel, followed by a nitrogen purge and an addition of butane gas. After agitation under heat and pressure, the butane gas is expanded across an orifice into the rundown vessel, thus expanding the polypropylene beads to a desired density.

Butane and nitrogen in the rundown vessel flash off into an off-gas recovery tank (TK-780 for EPO I and TK-880 for EPO II). Nitric acid is used to wash the beads of TCP and the aqueous solution is pumped out to a settlement tank, where the TCP is precipitated from solution by pH adjustment and reused in the process. After washing, the beads are dried through a spin dryer, a flash dryer, and then stored in batch silos; this equipment vents to a fabric filter control device (i.e., F-780 for EPO I and F-880 for EPO II). After remaining in the batch silos for a sufficient time to allow for the majority of residual butane to off-gas to atmosphere, the beads are transferred to bulk storage silos in the bulk loading facility and thereafter shipped to customers.

The butane from the off-gas recovery tanks passes through a nitrogen condensation system for recovery and reuse in the impregnation vessels; one condensation system serves both EPO I and EPO II. Residual butane lost to off-gassing during the remainder of the process is replaced with fresh butane from storage as needed.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the **2009** submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	0.0
Lead (Pb)	0.0
Nitrogen Oxides (NO _x)	0.0
Particulate Matter (PM)	1.4
Sulfur Dioxide (SO ₂)	0.0
Volatile Organic Compounds (VOCs)	27.8
Total Hazardous Air Pollutants (HAPs)	0.0

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

See Parts C and D in the draft 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.

Wayne County is currently designated by the U.S. Environmental Protection Agency (USEPA) as a non-attainment area with respect to the PM 2.5 standard. Wayne County is currently designated as attainment/unclassified for all other criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit volatile organic compounds (VOC) exceeds 100 tons per year.

No emissions units at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of volatile organic compounds was less than 250 tons per year.

Although EUEPOACIDTK702 were installed after August 15, 1967, this equipment was exempt from New Source Review (NSR) permitting requirements at the time it was installed. However, future modifications of this equipment may be subject to NSR.

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."

The emission limitation for volatile organic compounds (VOC) from FGEPO at the stationary source is exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because the emission limitation meets the CAM exemption for a continuous compliance determination method.

At 40 CFR 64.1 a "continuous compliance determination method" is defined as "a method, specified by the applicable standard or an applicable permit condition, which: (1) Is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and (2) Provides data either in units of the standard or correlated directly with the compliance limit."

For FGEPO, the VOC emission limit is 129 tons per 12-month rolling time period as determined at the end of each calendar month (Condition I.1); butane is the VOC emitted from the process, where butane refers to a hydrocarbon mixture of n-butane, isobutane, and propane, with n-butane as the primary component. As mentioned above, a portion of the butane in the impregnation vessel is condensed downstream in the process and returned for reuse. Fugitive butane is released as VOC emissions and replaced in the impregnation vessel by fresh butane from storage. Condition II.1 limits the addition of fresh butane to FGEPO to 129 tons per 12-month rolling time period and monthly/12-month rolling time period records of fresh butane addition are required under Condition VI.3. This butane material balance provides data in the units of the standard (tons per 12-month rolling time period) on a frequency consistent with the averaging period of the standard (at the end of each calendar month). Therefore, the emission limitation meets the CAM exemption for a continuous compliance determination method and FGEPO is exempt from CAM requirements for VOCs.

No particulate matter emission limits at the stationary source are subject to the federal Compliance Assurance Monitoring rule under 40 CFR, Part 64, because all emission units at the stationary source emitting particulate matter either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

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-N7238-2005a are identified in Appendix 6 of the ROP.

PTI Number
59-02A

Equivalent Requirements

This permit does not include any equivalent requirements pursuant to Rule 212(5). Equivalent requirements are enforceable applicable requirements that are equivalent to the applicable requirements contained in the original PTI, a Consent Order/Judgment, and/or the State Implementation Plan.

Non-applicable Requirements

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

Processes in Application Identified as Exempt by Rule 290

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4)(g). These processes are subject to process-specific emission limits and standards at R 336.1290 and the flexible unit conditions of FGRULE290.

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Rule 290 Flexible Group
EUEPOACIDTK702	Nitric acid storage tank containing 68% nitric acid, controlled by packed bed scrubber, used in EPO I and EPO II plants.	FGRULE290

There were no processes included in the ROP application identified as an exempt device under Rule 212(4) and not subject to any process-specific emission limits or standards in any applicable requirement.

Draft ROP Terms/Conditions Not Agreed to by Applicant

This permit 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 the DNRE

The AQD proposes to approve this permit. 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 U.S. Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit 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 the Southeast Michigan District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the permit 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.

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APRIL 1, 2011 STAFF REPORT ADDENDUM

Purpose

A Staff Report dated February 28, 2011, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). 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 R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Ms. Danielle Béliveau, Vice President 405-378-9093
AQD Contact:	Jeff Korniski 313-456-4681

Summary of Pertinent Comments

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

Changes to the February 28, 2011 Draft ROP

No significant changes were made to the draft ROP. During the 30-day comment period, the Department of Natural Resources and Environment (DNRE) was abolished and the authority to issue this permit transferred to the Department of Environmental Quality (DEQ). The draft ROP was revised to reflect this change.