

TO Eric Gustafson **EAG 6/29/2023**
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FROM David Balog, P.E. **DGB 6/28/2023**
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RE International Waxes Inc. – Farmers Valley facility
RACT II is RACT III Proposal
Title V Operating Permit No. 42-00011
Keating Township, McKean County

Procedural History

As part of the Reasonably Available Control Technology (RACT) regulations codified at 25 Pa. Code §§ 129.111–129.115 (relating to additional RACT requirements for major sources of NO_x and VOCs for the 2015 ozone NAAQS) (RACT III), the Pennsylvania Department of Environmental Protection (Department) has established a method under § 129.114(i) (relating to alternative RACT proposal and petition for alternative compliance schedule) for an applicant to demonstrate that the alternative RACT compliance requirements incorporated under § 129.99 (relating to alternative RACT proposal and petition for alternative compliance schedule) (RACT II) for a source that commenced operation on or before October 24, 2016, and which remain in force in the applicable operating permit continue to be RACT under RACT III as long as no modifications or changes were made to the source after October 24, 2016. The date of October 24, 2016, is the date specified in § 129.99(i)(1) by which written RACT proposals to address the 1997 and 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) were due to the Department or the appropriate approved local air pollution control agency from the owner or operator of an air contamination source located at a major NO_x emitting facility or a major VOC emitting facility subject to § 129.96(a) or (b) (relating to applicability).

The procedures to demonstrate that RACT II is RACT III are specified in § 129.114(i)(1)(i), 129.114(i)(1)(ii) and 129.114(i)(2), that is, subsection (i), paragraphs (1) and (2). An applicant may submit an analysis, certified by the responsible official, that the RACT II permit requirements remain RACT for RACT III by following the procedures established under subsection (i), paragraphs (1) and (2).

Paragraph (1) establishes cost effectiveness thresholds of \$7,500 per ton of NO_x emissions reduced and \$12,000 per ton of VOC emissions reduced as “screening level values” to determine the amount of analysis and due diligence that the applicant shall perform if there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis. Paragraph (1) has two subparagraphs.

Subparagraph (i) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.

Subparagraph (ii) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.
- A new economic feasibility analysis for each technically feasible air cleaning device, air pollution control technology or technique.

Paragraph (2) establishes the procedures that the applicant that evaluates and determines that there is a new or upgraded pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis shall follow.

- Perform a technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b) (relating to RACT proposal requirements).
- Submit that analysis to the Department (or appropriate approved local air pollution control agency) for review and approval.

The applicant shall also provide additional information requested by the Department (or appropriate approved local air pollution control agency) that may be necessary for the evaluation of the analysis submitted under § 129.114(i).

Facility details

International Waxes, Inc. – Farmers Valley facility (“IWI”) operates an existing specialty wax manufacturing facility, producing six different grades of petroleum wax, and is currently permitted by Title V Operating Permit No. 42-00011. For the purposes of RACT, IWI is a major stationary source of NOx and VOCs. IWI reports no modifications were made to the sources in this analysis after October 24, 2016.

RACT II for IWI Farmers Valley was submitted to US EPA on February 21, 2020, and approved on January 24, 2022 [87 FR 3442], that included 2 case by case VOC RACT analyses.

IWI submitted their RACT II is RACT III proposal to the Department on December 30, 2022.

The following VOC emitting sources(s) are subject to § 129.114(i) - RACT II determination assures compliance with RACT III requirements:

Source ID	Source Name	RACT III provision
300	Wastewater Treatment Plant	25 Pa. Code §129.114(i)(1)(ii)
303	Flue Gas Holder	25 Pa. Code §129.114(i)(1)(i)

The RACT II determination/requirements can be found in the attached RACT II review memo and at the following link:

[EPA Approved Pennsylvania Source-Specific Requirements | US EPA](#)

RACT III analysis performed by the Department under § 129.114(j)(1):

Although IWI Farmers Valley is major for NOx under RACT III, their submittal states all NOx sources at the plant fall under presumptive RACT III requirements (except for new Boiler 6, which began operation after August 3, 2018 and is therefore not subject to the RACT III regulation, and a Resin Heater with a Potential to Emit (“PTE”) NOx of < 1 tpy, also making it exempt from RACT III).

All VOC sources, except for the Wastewater Treatment Plant and Flue Gas Holder as identified above, either have existing RACT requirements, presumptive RACT requirements, or are exempt based on a PTE of < 1 ton per year (“tpy”). The Department has reviewed the applicant’s determination that no new VOC control technologies exist for the reduction of VOC for the above 2 sources, and that no significant changes to the technical capabilities or cost of existing control technologies have occurred since the case

by case RACT II analysis was completed on February 21, 2020. Information for this analysis was obtained from (1) the RACT/BACT/LAER Clearinghouse Database (RBLC database); and (2) engineering judgement.

A summary of the cost of VOC control for RACT II is shown in the table below.

Source ID	Source Name	Control Technology	VOC (\$/Ton)
300	Wastewater Treatment Plant	API separator cover system & route vapors to thermal oxidizer	\$8,952
303	Flue Gas Holder	Thermal Oxidizer	\$12,090

Source 300 – Wastewater Treatment Plant

- The Department believes that there are no new control technologies or significant changes to the technical capability of the existing control technology evaluated in RACT II, i.e. covering the API separators at the wastewater treatment plant & routing the vapors to a thermal oxidizer.
- The current VOC PTE for this source, uncontrolled, is 49 tpy.
- Because the RACT II cost effective analysis for the above control technology yielded a value less than \$12,000/ton VOC removed, under §129.114(i)(1)(ii), IWI was required to submit a new/updated economic feasibility analysis, which they did. IWI conducted the new analysis using the latest version of EPA’s OAQPS Control Cost Manual. The updated analysis yielded a cost effectiveness of \$10,015/ton VOC removed, representing a 12% increase compared to the RACT II analysis in 2020. Using current RACT III guidance from DEP’s Central Office, the regional office believes this control technology remains *not* cost effective under RACT III.
- RACT III for this source will be identical to RACT II (i.e. best operating practices), and the existing TV Permit already contains these best operating practices as conditions.

Source 303 – Flue Gas Holder

- The Department believes that there are no new control technologies or significant changes to the technical capability of the existing control technology evaluated in RACT II, i.e. installing a thermal oxidizer to combust the collected gases.
- The current VOC PTE for this source, uncontrolled, is 14 tpy.
- IWI has included a statement as required by §129.114 (i)(1)(i) that a re-visit of the previous RACT II cost effective determination yields the same results today, i.e. the costs to install and operate a thermal oxidizer well exceed \$12,000/ton VOC removed.
- RACT III for this source will be identical to RACT II (i.e. best operating practices), and the existing TV Permit already contains these best operating practices as conditions.

Public discussion

- No discussions occurred with the EPA, the company, or the public after the company submitted the RACT II is RACT III proposal application.

Conclusion

- The Department has analyzed the applicant's proposal for considering RACT II requirements as RACT III. Based on the information provided by the applicant or owner/operator of the facility, the Department determines that the RACT II requirements satisfy the RACT III requirements. The RACT III requirements are identical to the RACT II requirements and are as stringent as RACT II.
- The following work practice conditions were accepted by the PADEP for each subject emission source and incorporated into a modification to Title V Operating Permit #42-00011, effective February 21, 2020, and also carried forward into the renewal to Title V Operating Permit #42-00011, effective February 24, 2022:
 - Source 303 - Flue Gas Holder: 1) The flue gas holder shall be operated in accordance with manufacturer/facility specifications and good engineering practices; 2) A positive pressure nitrogen blanket shall be maintained on the flue gas holder at all times, to minimize volatilization of organic compounds.
 - Source 300 - Wastewater Treatment Plant: Any floating product (i.e., wax) shall be routinely skimmed from the wastewater treatment plant API separators, and the skimmed material shall be returned to the production process.