



SUBJECT: RACT II Equals RACT III Review Memo
First Quality Tissue, LLC
Castanea Township, Clinton County
TVOP 18-00030
PFID 647981

TO: Muhammad Q. Zaman 
Environmental Program Manager
Air Quality Program

FROM: David M. Shimmel, P.E. 
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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

First Quality Tissue, LLC is a paper towel and tissue paper manufacturing facility located in Castanea Township, Clinton County. The main processes at the facility are three paper manufacturing lines which incorporate wet end sections for the initial stage of paper production and dry end sections for drying the produced paper. The dry end sections incorporate large natural gas-fired burners to dry the product before it is rolled on to large drums of finished paper, after which the drums are sent on to additional processing to produce toilet paper or paper towel finished and packaged product. Additional sources supporting the production include two 68 million Btu per hour natural gas-fired boilers.

The facility is major for both NO_x and VOCs. None of the sources are subject to a RACT II as RACT III for NO_x emissions. The facility's RACT III Notification was received on December 29, 2023, in which a RACT II as RACT III evaluation and proposal was also included. The facility received a full compliance evaluation on April 6, 2023, with no violations noted.

The sources subject to a RACT II as RACT III analysis at this facility are P102, P103, P110, P202, and P203 for VOC emissions only. No modification or changes were made to any affected sources after October 24, 2016. Of the three applicable regulatory sections of RACT III, namely, §129.114(i)(1)(i), §129.114(i)(1)(ii), and §129.114(i)(2), only §129.114(i)(1)(i)(a) was utilized.

The First Quality Tissue RACT II revised permit was approved by the US EPA and said approval was incorporated into the PA SIP and published accordingly on October 16, 2020. Please see the *Federal Register* 85 FR65706 for publication of the approval and incorporation into the PA SIP.

Sources subject to § 129.114(i) - RACT II determination assures compliance with RACT III requirements

Source ID	Source Name	RACT III provision
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P102	Paper Machine #1 Dryer	§129.114(i)(1)(i)
P103	Paper Machine #1 Glue Containment Area	§129.114(i)(1)(i)
P110	Wastewater Treatment Operation	§129.114(i)(1)(i)
P202	Paper Machine #2 Dryer	§129.114(i)(1)(i)
P203	Paper Machine #2 Glue Containment Area	§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)

First Quality Tissue has proposed that RACT II satisfies the requirements of RACT III since there have been no changes or modifications to the facility or the remaining affected sources.

To satisfy the proposal, First Quality Tissue referred back to their RACT II analysis for the control of VOC emissions from the Paper Machine Dryers (P102, P202). In their RACT II analysis, they determined that thermal oxidation, condensation/refrigeration, and absorption were not technically feasible methods of controlling VOC emissions. They contend that this determination remains accurate for the sources and that no new technologies have become available to reduce VOC emissions from these types of sources given the very low VOC concentration of, and very high exhaust flow of, the Dryer exhaust stream. To further support their determination, they conducted a search of the US EPA RACT, BACT, LAER Clearinghouse which yielded that no new control methods have become available since their RACT II review in 2017. They also contacted an air pollution control device vendor to see if there were recent technologies developed which were technically feasible for controlling VOC emissions from these types of sources and the vendor concluded they have seen nothing recent that would be applicable to their sources. In the course of the Department's RACT review, and along with web searches and recent control technology webinars provided to the Department by vendors and suppliers, the Department also concludes that there are no technically feasible VOC controls for these sources. Because no new control methods were technically feasible, cost analysis for infeasible methods was not warranted.

As for controlling VOCs from the Glue Containment Areas (P103, P203), First Quality arrived at the same conclusion as was the case for the Paper Machine Dryers. The primary difference between the Dryers and Glue Containment Area is that even though the Glue Containment Area exhaust stream flows are relatively low, the stack tested VOC concentrations of less than 1 ppmvd make it infeasible and impractical to attempt further reductions in VOC concentration. The Department concurs with this conclusion and determination on infeasibility of control methods. Although rotary concentrators in theory are candidates for this type of scenario, the demanding nature of actually constructing and installing such a device at the physical location required at the facility would prove extremely difficult and even if achievable, the high construction cost considerations would yield exorbitant cost per ton reduction values due to the

relatively low VOC emissions. Because no new control methods were technically feasible, cost analysis for these methods was not warranted.

First Quality referenced the RACT II analysis of the Wastewater Treatment System (P110) as the basis for the RACT II as RACT III. The crux of the RACT II analysis was that the large surface area (approximately 17 acres) of the aeration pond make it virtually impossible to collect the VOC emissions and therefore it was technically infeasible. Although it may be possible to design some means to cover the entire multi-acre aeration pond, the air volume to be captured versus the relatively low VOC emission rate would yield a tremendously low VOC concentration that would be technically infeasible to further reduce. The Department concurs with the conclusion and determination on infeasibility of control methods. Because no new control method was technically feasible, cost analysis for a non-existent method was not possible.

The table below summarizes the result of the RACT methods evaluated.

Source ID	Source Name	Control Technology	VOC Emissions before Control	VOC Emissions after Control	Total Annual Cost of Control Eqpt	VOC (\$/Ton) Removal Cost
P102	Paper Machine #1 Dryer	None Feasible	90.55 (See Note)	90.55 (See Note)	N/A	N/A
P103	Paper Machine #1 Glue Containment	None Feasible			N/A	N/A
P202	Paper Machine #2 Dryer	None Feasible			N/A	N/A
P203	Paper Machine #2 Glue Containment	None Feasible			N/A	N/A
P110	Wastewater Treatment	None Feasible	8.93	8.93	N/A	N/A

Note: The total combined emission of volatile organic compounds from both paper machines (combined total from P101, P102, P103, P106, P201, P202, P203 & P206), as per Title V Operating Permit 18-00030, is limited to 90.55 tons per year. Also, the total combined emission of volatile organic compounds from paper machine #1, comprised of Source P101, Source P102, Source P103 and P106, shall not exceed 56.53 tons in any 12 consecutive month period. The total combined emission of volatile organic compounds from paper machine #2, comprised of Source P201, Source P202, Source P203 and P206, shall not exceed 56.53 tons in any 12 consecutive month period, per emission limitations currently established in Title V Operating Permit 18-00030 for the respective sources.

RACT II as RACT III

First Quality Tissue has proposed that RACT II satisfies the requirements of RACT III since there have been no changes or modifications to the facility or affected sources. First Quality satisfied the proposal by conducting an analysis of VOC emissions from Sources P102, P103, P202, P203 and P110. Each source was then evaluated for technical feasibility. First Quality

provided an updated RACT technical feasibility analysis of pollution control devices for the sources noted above and concluded that there are no new technically feasible control technologies at this time.

The Department concurs that the control technologies discussed in the analysis are shown to not be technically feasible for the control of VOCs and therefore the application of any control technologies to the sources to satisfy RACT III requirements is not warranted at this time.

Public Discussion

No discussions occurred with the EPA, the company, or the public beyond the initial application, which materially impacted a decision to include one or more sources under the RACT II is RACT III umbrella.

Conclusion

The Department has analyzed the applicant's proposal for considering RACT II requirements as RACT III and also performed independent analysis. Based on the information provided by the applicant and independently verified by the Department, 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.

File: First Quality Tissue, Permits, TVOP, 18-00030
Cc: Central Office, Air Quality Permits
US EPA Region III