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**CHEROKEE**

A Subsidiary of Merck Sharp & Dohme LLC

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December 20, 2022

Electronic Submittal via PA DEP OnBase application

Mr. Muhammad Zaman  
Environmental Programs Manager  
Air Quality Programs  
Northcentral Regional Office  
PA Department of Environmental Protection  
208 West Third Street, Suite 101, Williamsport, PA 17701

*RE: Additional RACT Requirements for Major Sources of NOx and VOCs*

Dear Mr. Zaman:

Enclosed is a copy of the Additional RACT Requirements for Major Sources of NOx and VOCs form 25 Pa Code 129.114(i)- Demonstrating that compliance with 129.99(e) assures compliance with 129.114(a)-(c) and (e)-(h). This submittal is part of the compliance notification for the new RACT III requirements required by December 31, 2022.

As was communicated to the Department in April of 2022, the Merck Cherokee facility located in Riverside borough, Northumberland County, is planning to cease operations by December 31, 2024.

Additional information is attached related to the methods of compliance with the RACT III requirements for the Merck Cherokee facility

Please contact me should you have any questions or need additional information.

Sincerely,



Frank McKee  
Senior Safety & Environmental Specialist  
Merck Cherokee

Enclosure



12/19/2022

### **Additional RACT Requirements for Major Sources of NO<sub>x</sub> and VOCs**

25 Pa Code § 129.114(i) - Demonstrating that compliance with § 129.99(e) assures compliance with § 129.114(a)-(c) and (e)-(h).

This form is intended to assist applicants in providing the information needed by the Department to evaluate whether a source or sources at a facility demonstrate that compliance with the alternative RACT requirement or alternative RACT emission limitation approved by the Department or the appropriate approved local air pollution control agency under § 129.99(e) (relating to alternative RACT proposal and petition for alternative compliance schedule) assures compliance with the provisions in subsections 25 Pa Code § 129.114(a)-(c) and (e)-(h), except for sources subject to § 129.112(c)(11) or (i)–(k).

This provision allows for RACT III compliance using an abbreviated analysis by providing the Department with the analysis done on the same source for RACT II.

This form must be submitted to the Department as soon as practicable, but no later than December 31<sup>st</sup>, 2022.

Please provide a list of sources that the owner or operator proposes to comply with RACT III through 129.114(i) in Table 1 using the instructions below.

The basic information requested here can be found in section A and H of the facility's operating permit.

If the source was evaluated for multiple control devices, please list the same source multiple times so that every source/control device combination is listed.

If one control device was evaluated to control multiple sources, please list all source ID's which the control device would control in the source ID section while skipping the source name, make, model, and location sections. Please treat the "source group" as a source for the purposes of the rest of this form.

Please choose one of the following provisions of 129.114(i) with which the source/evaluated control device combination will comply with:

- a. 129.114(i)(1)(i) – Please choose this option if no new air pollution control device is available or if the cost analysis done for RACT II (129.99(e)) resulted in a cost-effectiveness equal to or greater than \$7,500 for NO<sub>x</sub> or \$12,000 per ton of VOC reduced. In addition, the owner or operator may choose this option if...
  
- i. A control option during RACT II evaluation was determined to be technically infeasible.

- ii. No cost analysis was performed for another reason, such as a higher ranked control technology was installed.
- b. 129.114(i)(1)(ii) – Please choose this option if the cost analysis done for RACT II (129.99(e)) resulted in a cost-effectiveness less than \$7,500 for NOx emissions reduced or \$12000 per ton of VOC emissions reduced.
- c. 129.114(i)(2) – Please choose this option for any sources which have new or upgraded control device, beyond what was evaluated for RACT II (129.99(e)), which needs to be evaluated.

**Table 1**

Source ID	Source Name	NOx Control device evaluated	Cost per ton of NOx determined	VOC Control device evaluated	Cost per ton of VOC determined	Provision of 129.114(i) which the source/evaluated control device will comply with (a, b or c)
ID 101	Wastewater Treatment Plant	N/A (no combustion or nitrogen emissions associated with this source)	N/A	Equipment Covers	\$23,650	a. 129.114(i)(1)(i)

**For all source/control device combinations listed in Table 1 subject to 129.114(i)(1)(i), please provide the following:**

- 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 copy of the final version of the cost analysis done for RACT II which was approved by the Department. If a copy of the final analysis is not available, you may submit a new cost analysis calculated consistent with the “EPA air pollution control cost manual” (sixth edition), EPA/452/b-02-001, January 2002, as amended.
- A statement that an evaluation of each economic feasibility analysis summarized as required above demonstrates that the cost effectiveness remains equal to or greater than \$7,500 per ton of NO<sub>x</sub> emissions reduced or \$12,000 per ton of VOC emissions reduced.
- If the owner or operator feels that the Department should have any additional information to assist them in evaluating their application, please provide it.

**For all source/control device combinations listed in Table 1 subject to 129.114(i)(1)(ii), please provide the following:**

- 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 copy of the final version of the cost analysis done for RACT II which was approved by the Department. If a copy of the final analysis is not available, the owner or operator may submit a new cost analysis calculated consistent with the "EPA air pollution control cost manual" (sixth edition), EPA/452/b-02-001, January 2002, as amended.
- A new economic feasibility analysis for each source/control device combination.
- A statement that an evaluation of each economic feasibility analysis summarized as required above demonstrates that the cost effectiveness remains less than \$7,500 per ton of NO<sub>x</sub> emissions reduced or \$12,000 per ton of VOC emissions reduced.
- If the owner or operator feels that the Department should have any additional information to assist them in evaluating your application, please provide it.

**For all source/control device combinations listed in Table 1 subject to 129.114(i)(2), please provide the following:**

- A technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b) (this is a standard RACT analysis).
- Submit the RACT analyses to the department or appropriate approved local air pollution control agency for review.
- If the owner or operator feels that the Department should have any additional information to assist them in evaluating your application, please provide it below.

Additional Information – RACT II as RACT III form (12/19/2022)

- Searches were performed using the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) to identify potential air pollution control strategies for the site's Wastewater Treatment Plant (WWTP). No new air pollution control strategies for a WWTP for the control of VOC's were determined from the RBLC searches. Strategies that were evaluated for feasibility under the RACT II analysis included: Tank Covers, Floating Tank Covers, Steam Strippers and Biodegradation.
  - Floating tank covers were found to be infeasible due to the constant turbulence and the water being saturated with oxygen. In this environment, there is little to no surface tension which would create problems in keeping the floating cover in place and cause it to sink.
  - Steam strippers were found to be infeasible due to the low concentration of VOC's and high volume in the site's wastewater stream. This technology is typically utilized in high concentrations of VOC's and low flow volumes.
  - Biodegradation is already utilized in the site's wastewater treatment system.
  - Tank covers were found to be a feasible option and were evaluated and found infeasible due to economic impacts.
- See attached RACT II cost analysis for cover installation
- The economic feasibility analysis summarized in the RACT II evaluation remains equal to or greater than the \$12,000 per ton of VOC emissions reduced. There have been no changes to the equipment configuration that would require installation of tank covers, i.e., the same number of covers would be required. Since the previous analysis, the cost of materials and labor has increased significantly and as such, it is reasonable to conclude that the economic feasibility has not improved from the analysis performed in 2016.

