

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
PETITION OF GREIF PACKAGING, LLC)
FOR AN ADJUSTED STANDARD FROM) **AS 11-01**
35 ILL ADM. CODE PART 218) **Air**
SUBPART TT)

NOTICE

TO: John Therriault, Acting Clerk
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PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the RECOMMENDATION of the Illinois Environmental Protection Agency a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
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DATED: October 11, 2011

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**THIS FILING IS SUBMITTED
ON RECYCLED PAPER**

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
PETITION OF GREIF PACKAGING, LLC)
FOR AN ADJUSTED STANDARD FROM) AS 11-01
35 ILL ADM. CODE PART 218) (Adjusted Standard –Air)
SUBPART TT)

RECOMMENDATION

The Illinois Environmental Protection Agency (“Illinois EPA”) hereby submits its Recommendation in the above captioned matter pursuant to the regulations of the Illinois Pollution Control Board (“Board”) at 35 Ill. Adm. Code 104.416. The Illinois EPA recommends that the Board **GRANT** the Second Amended Petition of Greif, Inc., and Greif Packaging, LLC, (“Greif”) subject to the terms and conditions contained in this Recommendation. In support of this Recommendation, the Illinois EPA states as follows:

BACKGROUND

1. Greif operates a fiber (paper) drum container manufacturing facility located at 5 S 220 Frontenac Road in Naperville, DuPage County, Illinois. (Second Amended Petition at 1). Fiber drums are generally produced by cutting fiber material to the appropriate length, forming the fiber into a cylindrical shape and attaching a top and bottom to the cylinder. Id. Some drums require the addition of a polyethylene liner due to customer specifications, such as when the drum is needed for storage of food-grade products. Id. The quality control (“QC”) system in Greif’s plant involves testing the liners of drums by spraying a test fluid into the interior of the

drums. Id. The test fluid is a denatured alcohol product which is a volatile organic material (“VOM”). Id.

2. For the process at issue in this Adjusted Standard proceeding, Greif uses an automated system to spray the interior of the drum liners with QC test fluid. Id. at 2. The drums move along a conveyor belt and at the proper moment a spray wand descends and sprays the interior of the drum with the VOM--containing test fluid. Id. After the spray wand retracts, the drum moves along the conveyor belt to an inspection station where the drums are visually inspected for pinholes. Id. The ethanol in the test fluid causes a brown spot to appear wherever a pinhole exists. Id. If no pinholes are present, the drum moves along to the drying oven where remaining fluid is evaporated. Id. VOM is emitted throughout the quality control check and in the drying oven. Id.

3. Greif states that it tracks VOM emissions on a monthly basis by “calculating the mass of VOMs used and assuming that all usage is emitted to the atmosphere.” Id. Greif asserts that it calculates the volume of denatured alcohol held as inventory on both the first and last days of the month. Id. Greif notes that it also tracks the volume of denatured alcohol purchased within each month. Id. The difference in volume “is then multiplied by the VOM content (in pounds per gal) of the denatured alcohol to compute the mass (in pounds) of VOM emitted during the month.” Id.

4. The Naperville plant is subject to a Federally Enforceable State Operating Permit (“FESOP”) (No. 9707044). Condition three of the FESOP limits VOM emissions of Greif’s QC test process to 22.8 tons per year. Id. This condition also limits the VOM emissions from the remainder of the plant to 1.4 tons per year. Id. The FESOP generally limits Hazardous Air

Pollutants (“HAPs”) from the Naperville plant to 10 tons per year (“tpy”) of any single HAP or 25 tpy for any combination of HAPs. *Id.* at 3. Greif reported 2010 emissions from the Naperville facility as 9.95 tons of VOM plant-wide and total combined HAP of 1.87 tons. *Id.* However, in previous years the VOM emissions climbed to as high as 46.7 tons. On July 5, 2007, the Illinois EPA issued Violation Notice A-2007-00132 alleging, in part, that Greif’s Naperville facility exceeded condition three of the FESOP, relating to VOM emissions. Greif asserts that the QC test process had emissions in 2006, 2007, 2008, 2009 and 2010 of 35.2, 46.7, 19.1, 7.7 and 8.95 tons, respectively. *Id.* These years of high emissions are the subject of the Illinois EPA’s Violation Notice, A 2007-00132. *Id.* After reviewing the matter, the Illinois EPA agreed that Greif would make changes to the process, as noted elsewhere in this document, and file a Petition for an Adjusted Standard to resolve the alleged violations.

5. Greif filed its Petition for Adjusted Standard on January 27, 2011, pursuant to Section 28.1 of the Illinois Environmental Protection Act (“Act”), 415 ILCS 5/28.1, and the regulation of the Board at 35 Ill. Adm. Code 104.402. An amended petition (“Amended Petition”) was filed on May 31, 2011. On August 10, 2011, a Second Amended Petition for an Adjusted Standard was filed with the Board.

6. Greif properly filed a Proof of Publication of Notice with the Board for each of these Petitions, stating that the various notices appeared in the *Naperville Sun* on January 27, June 10, and August 12, 2011.

7. Pursuant to 35 Ill. Adm. Code Section 104.416, the Illinois EPA is required to file a response to a Petition for Adjusted Standard within 45 days of filing.

8. However, as a result of ongoing discussions, Greif filed an Amended Petition and a

Second Amended Petition. In return, due to ongoing discussions and new information provided by Greif, the Illinois EPA filed several motions to extend the time for filing a response and all of these motions were granted by the Board.

9. This Second Amended Petition covers Greif's fiber drum manufacturing facility in Naperville.

THE REGULATION AT ISSUE

10. The Second Amended Petition requests that the Board grant Greif an adjusted standard from 35 Ill. Adm. Code 218.986(a). This subsection states:

Section 218.986 Control Requirements

Every owner or operator of an emission unit subject to this Subpart shall comply with the requirements of subsection (a), (b), (c), (d), or (e) below.

- a) Emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit, or (Board Note: For the purpose of this provision, an emission unit is any part or activity at a source of a type that by itself is subject to control requirements in other Subparts of this Part or 40 CFR 60, incorporated by reference in Section 218.112, e.g., a coating line, a printing line, a process unit, a wastewater system, or other equipment, or is otherwise any part or activity at a source.)

11. During the years 2006 and 2007, the Illinois EPA alleges Greif became subject to the 81 percent capture and control requirements of Subpart TT. Id. Section 218.986 (a) to (c) are part of Subpart TT which is a "once in-always in" regulation, which is why Greif is still subject to the provision despite reducing its plant-wide emissions to a level below the applicability threshold.

STANDARD OF REVIEW

12. Section 28.1 of the Act states that the Board may grant individual adjusted standards from rules of general applicability whenever the Board determines that an applicant can justify an adjustment. In adopting a rule of general applicability, the Board may specify the level of justification required of a petitioner for an adjusted standard. If a rule of general applicability does not contain a level of justification that the petitioner must meet to obtain an adjusted standard, the requirements of Section 28.1(c) of the Act apply. Section 28.1(c) states that the Board may grant individual adjusted standards whenever the Board determines that:

- (1) Factors relating to that petitioner are substantially and sufficiently different from the factors relied upon by the Board in adopting the general regulations applicable to that petitioner;
- (2) The existence of those factors justifies an adjusted standard;
- (3) The requested standard will not result in environmental or health effects substantially and sufficiently more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- (4) The adjusted standard is consistent with any applicable federal law.

13. The regulation of general applicability from which Greif seeks an adjusted standard, 35 Ill. Adm. Code 218.986(a), does not specify a level of justification that Greif must satisfy to obtain an adjusted standard. Therefore, Greif must satisfy the level of justification set forth in Section 28.1(c) of the Act. As summarized below, the requested adjusted standard for Greif's drum manufacturing operations presents facts sufficiently different from Subpart TT which the Agency agrees justifies the Adjusted Standard .

COMPLIANCE ALTERNATIVES

14. Greif asserts in its Second Amended Petition that its operations were not contemplated

by the Board when it passed Subpart TT, Section 218.986(a). Greif completed a Reasonably Available Control Technology (“RACT”) study in August 2010, revised March 2011, to evaluate compliance alternatives to meet the Section 218.986(a) requirement to reduce VOM emissions by 81%. Id. at 4. Greif states that one complicating factor for any capture system is that a tunnel enclosure would be needed for the entire length of the QC process. Id. at 10. The QC process is long, and completed at several points in the factory. Id. As Greif must have access to the drums for inspection, the tunnel system would be more complex than a normal system. Id. Greif asserts the RACT study compared three capture and control systems: capture plus recuperative thermal oxidizers, capture plus carbon adsorbers and capture plus biofilters and material substitutions. Id. That is, a capture system is assumed for all add-on control technologies. Id.

15. Concerning the three add-on control options, recuperative thermal oxidizers, carbon adsorbers, and biofilters and material substitutions, Greif asserts that all will be prohibitively expensive. Id. at 10 - 11. In addition, some will “have potentially harmful safety impacts.” Id. A recuperative thermal incinerator requires large amounts of natural gas for fuel and according to Greif, “[f]requent operation cycles in thermal oxidizers cause condensation corrosion and thermal deterioration of the insulation which requires ongoing maintenance costs.” Id. at 11. Carbon adsorbers use two or more beds of activated charcoal with one treating emissions while the other is regenerating. Id. at 12. Greif states that these work best with insoluble VOM as the recovery process uses steam to recover VOM from the carbon beds. Id. In Greif’s case, however, the QC test fluid is water soluble so recovery of the VOM would be more expensive. Id. The regeneration fluid would, in Greif’s estimation, likely be sent to the local sewage treatment facility which often results in the VOM still entering the atmosphere. Id. The creation of

ketones would create another safety hazard. Id.

16. Biofilters and material substitution presents its own set of problems. First, Greif asserts that a biofilter proposed to be installed at another Greif facility would only reduce VOM emissions by 70%. Thus either another technology must also be used or “the reductions in VOM emissions from the use of the water diluted test fluid” would have to be considered “as a capture and control technology.” Id. at 13. Biofilters must also be heated during winter months, thus increasing usage of electricity, natural gas or steam. Id.

17. Greif also attempted to dilute the QC test fluid with acetone. Id. Dilution with acetone, however, can “cause the gasket material sealing the bottom to the drum walls to dissolve.” Id. This results in damage to the product and is considered technically infeasible by Greif. Id. at 14.

Water was then tested to see if diluting the QC fluid with water would work. Id. Varying combinations of QC fluid and water were tested. Id. Greif asserts that the maximum amount of water that allowed Greif’s employees to properly check the quality of the drums was a dilution of 55% water, 45% QC fluid. Id. at 15. Greif then tested to see if the amount of diluted QC fluid could be reduced. Based on testing, Greif determined that at least 48 grams of test fluid can be used during the QC process. Id.

ENVIRONMENTAL IMPACT

18. Greif asserts that the granting of the petition will have minimal impact on air quality. Id. at 18. Greif states that even at the highest emissions level allowed Greif by its FESOP, emissions from the QC process would only equal 0.04% of the state-wide point source emissions. Id. at 19. It should be noted that the Agency does not accept this argument on its face, as almost any individual source could make the same claim, and it is the aggregate of sources in the area that causes ozone

nonattainment. However, the technical factors in this instance and the emission reductions Greif has already made offset the Agency's concern in this regard.

19. Greif then notes that the Board has granted adjusted standards from Subpart TT where the emissions were much higher than at Greif's plant. Id.

20. Greif asserts that no cross-media impact is expected from the granting of the adjusted standard. Id. at 20.

CONSISTENCY WITH FEDERAL LAW

21. The Board may grant the proposed adjusted standard consistent with federal law under Section 110 of the Clean Air Act, 42 U.S.C. §7410, which grants the individual states the authority to promulgate a plan for the implementation, maintenance, and enforcement of air quality standards, subject to approval by the United States Environmental Protection Agency ("USEPA"). Pursuant to federal law, states also have the authority to revise such a plan, subject to USEPA approval. By following its adjusted standard procedure with respect to the Board's federally authorized and approved air emission regulations, the Board is exercising the authority granted to the states through Section 110 of the Clean Air Act. If the requested adjusted standard is adopted by the Board, Illinois EPA has the authority and will submit the adjusted standard to USEPA as a State Implementation Plan revision, thus complying with federal law. Illinois EPA and Greif have discussed this proposed adjusted standard with USEPA, and USEPA has provided comments.

PROPOSED ADJUSTED STANDARD

22. Greif has requested an Adjusted Standard from the Board's air pollution control

requirements found at 35 Ill. Adm. Code 218.986(a), insofar as that regulation applies to the VOM emissions from the automatic QC test line at Greif's manufacturing facility in Naperville, Illinois. The Illinois EPA recommends that the Board **GRANT** Greif's Second Amended Petition as its factors are sufficiently different from the factors in Section 28.1(c), and requests that the Board allow Greif to operate its facility subject to the following conditions:

1. The proposed adjusted standard applies to the emission of VOM into the atmosphere from the automated QC Test Process line at Greif's fiber drum manufacturing facility located at 5 S 220 Frontenac Road in Naperville, DuPage County, Illinois (the Facility). The Facility manufactures fiber drums. Some of the fiber drums are lined with polyethylene to meet customer specifications, particularly for storage and transport of food-grade products. Lined drums must be tested to ensure the integrity of the polyethylene lining. That testing is performed at the QC Test Process, which consists of the following equipment and steps:
 - a. An automated, mechanical wand is lowered into each lined drum on a conveyor system. The wand is calibrated so that each spray releases about the same amount of QC test fluid into each drum.
 - b. The drums then are conveyed to the QC inspection station where the interior of the drum is visually inspected for pinholes.
 - c. The drum next is conveyed to a drying oven where most of the remaining QC test fluid is evaporated. After leaving the drying oven any remaining QC test fluid is vacuumed from the drum and then the drum is wiped dry. VOM in the QC test fluid is emitted throughout the QC Test Process as well as in the drying oven.
2. The Facility will reduce VOM emissions from its automated QC Test Process by using a test fluid composed of no more than 45 percent denatured alcohol by weight and no less than 55 percent water by weight.
3. The Facility will calibrate the automated QC Test Process equipment to spray an average of no more than 48 grams of QC test fluid per drum with compliance to be measured at least once per calendar quarter by the following procedure.
 - a. Weigh a plastic bag on a gram scale to determine the weight of the bag.
 - b. Place the plastic bag over the spray head of the wand of the QC Test Process and secure it in place with a rubber band or binder clip.
 - c. Cycle the QC Test Process by passing a drum through the process in the normal manner of operation with the plastic bag capturing the QC test fluid. Remove the plastic bag from the spray head of the wand of the QC Test Process and weigh it on the same gram scale used in step a.
 - d. Calculate the weight of QC test fluid sprayed as the difference between the weight determined in step c and the weight determined in step a.

- e. Repeat steps a. through d. for five cycles of the QC Test Process. Calculate the average weight of QC test fluid sprayed per cycle and compare that average to the standard of an average of no more than 48 grams of QC test fluid per drum.
4. All records and logs required by this adjusted standard shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (*e.g.*, computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
5. The Facility will maintain records of its QC test fluid usage that will allow the monthly calculation of the amount of QC test fluid used during the month and the calculation of VOM emissions on a 12-month rolling total basis for comparison to annual VOM limits in the FESOP. To allow these calculations, the Facility will:
- a. Record the volume of QC test fluid held as inventory on the first and last day of each month.
 - b. Maintain records of the volume of QC test fluid received at the Facility during each month.
 - c. The volume of QC test fluid used for a month shall equal the inventory volume on the first day of the month plus the volume received at the Facility during the month, less the volume in inventory on the last day of the month.
 - d. The volume used during a month calculated in step c shall be multiplied by the VOM content of the QC test fluid (in pounds per unit of volume) to compute the weight (in pounds) of VOM emitted during the month.
 - e. Using the emissions of VOM in pounds calculated for each month in step d, the Facility will compute the 12-month rolling VOM emissions for the QC Test Process and report those results to Facility management.
6. Greif will continue to investigate the availability of alternative QC test fluids with lower VOM content. Greif will incorporate such lower VOM QC test fluids into its automated QC Test Process provided that the lower VOM QC test fluids allow visual detection of pinholes or other tears or imperfections in the drum linings within an acceptable period of time and does not result in any negative product quality impacts.
7. The proposed adjusted standard will not affect the calculation of Greif's potential Emissions Reduction Market System ("ERMS") baseline or its ERMS allotment if Greif's Naperville plant should participate in the ERMS program.
8. Environmental staff of Greif's parent company will conduct a formal training session for Naperville facility personnel on the requirements of the FESOP and the internal procedures for tracking compliance with FESOP conditions.

9. Emissions and operation of the QC Test Process shall not exceed the following limits:

	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
VOM Usage	2.3	22.8
VOM Emissions	2.3	22.8

These limits are based on the maximum material usage and the maximum VOM content. Compliance with the annual limit for the QC Test Process shall be determined from a running total of 12 months of data.

23. Although the Illinois EPA believes that the alternative compliance methods and add-on options investigated by Greif have costs which are not RACT, the Illinois EPA strongly disputes Greif's definition of RACT. The Petitioner relies upon the case of *In re: Petition of Louis Berkman*, AS 97-5 (Dec. 4, 1997) *aff'd sub nom EPA v. PCB*, 308 Ill. App. 3d 741, 746 & 752-53, 721 N.E.2d 723, 726-27 & 731 (2nd Dist. 1999) for the proposition that costs exceeding \$1,734 (in 1996 dollars) per ton of reductions were economically unreasonable. In addition, in its RACT study, Greif goes so far as to say that the "Board's RACT cost threshold was a maximum of \$1,734 per ton of VOM controlled" (1996 dollars). Reasonably Available Control Technology Study, p. 4 – 5.

24. However, in *Berkman*, the Board clearly stated that the \$1,734 figure represents an *average* figure based upon certain factors, and that "costs cannot be deemed unreasonable simply because they exceed the average." *Berkman*, AS 97-5, December 4, 1997, p 10. The \$1,734 figure is nowhere listed as the maximum cost for RACT. The Board even noted that as an average figure, it assumes that some facilities will exceed the cost. *Id.* It is also worth pointing out that the costs at issue in the *Berkman* case greatly exceeded the average figure of \$1,734 (the costs were over five times the \$1,734 figure in 1996 dollars). *Id.* Finally, the Board was

discussing the figure in the context of various miscellaneous metal parts and products coating facilities cases. *Id.* at 10-11. It is not clear if the figure should be used to calculate RACT for every category of sources. *Berkman's* relevance to this proceeding is therefore questionable at best.

25. More importantly, the \$1,734 figure is not even relevant or accurate for this matter. The \$1,734 figure was derived from an original figure of \$1,032 per ton in 1980 dollars and was for facilities located in *attainment* areas. *Berkman*, 10. Greif is located in a *non-attainment* area. The proper average figure at the time for a *non-attainment* area was \$1,434.70 in unadjusted dollars. *In the Matter of: RACT II Rules, Chapter 2, Air Pollution, R80-5, Proposed Opinion for Second Notice of October 5, 1982, at 19; adopted as the Final Opinion in the order of December 30, 1982.* This figure has not been updated to 1996, let alone 2011, dollars, and the cost of RACT has continued to increase as tighter control requirements have been required. The \$1,734 figure is thus not even relevant to the present matter.

26. Just as important, RACT is not a cost issue alone. Each case has unique factors which are part of the conditions. Similarly, each adjusted standard is case specific. Two plants may both produce the same product in the same quantity but RACT will be different for each. The conditions at each plant guide the Board in determining RACT. In addition, Subpart TT is different from the regulations at issue in the other cases cited. The particulars of each regulation help to determine RACT. The Illinois EPA believes that Greif qualifies for an adjusted standard based upon its calculation of RACT, but it is the RACT for this facility, not RACT for all sources which have the same costs. A specific dollar figure for RACT is also unwarranted. Any dollar figure would only obscure the site-specific nature of each RACT decision.

HEARING

27. Greif has requested a hearing before the Board.

WHEREFORE, the Illinois EPA recommends that Greif's Second Amended Petition for Adjusted Standard be **GRANTED**, and an order be entered adopting the adjusted standard with the specific language presented in this Recommendation.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

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Dated: October 11, 2011

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