



State of Ohio Environmental Protection Agency

Southeast District Office

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June 7, 2010

Certified Mail #7006 3450 0001 9055 9024

Joni Mathias
Convertapax Inc.
5539 Gundy Drive
Midvale, OH 44653

Re: Tuscarawas County
Convertapax Inc. – Facility ID 0679000259
Warning Letter (non-HPV)

Dear Ms. Mathias:

On April 29, 2010, Ohio EPA staff from the Division of Air Pollution Control, Southeast District Office, observed two runs of the volatile organic compound (VOC) stack testing conducted at your facility located at 5539 Gundy Drive in Midvale, Ohio. This stack test was conducted on the heat seal coating line (emissions unit (EU) K004) to comply with the emissions testing requirement in the permit-to-operate (PTO) that expires on March 23, 2011. Additional emissions testing that the company had planned for December 29, 2009 and March 31, 2010 was not conducted because of high VOC concentrations observed during pre-testing. Prior to the April 2010 test date, the company identified and addressed several problems with the incinerator system that were thought to be causing reduced incinerator efficiency.

Although Ohio EPA has not yet received the official results of the April 2010 stack test, I have been working on revisions to the EU K004 PTO with the primary goal of re-establishing the synthetic minor limitations that are needed to restrict the emissions of hazardous air pollutants (HAPs) from EU K004, primarily toluene, to levels that would exempt the company from the Title V permitting requirements in Ohio Administrative Code (OAC) Chapter 3745-77 and 40 CFR Part 63 Subpart JJJJ, the National Emission Standards for Hazardous Air Pollutants for Paper and Other Web Coating (MACT). As part of the evaluation process, I have been reviewing the applicable air pollution rules and your company's files. Unfortunately, I have discovered several additional concerns and permit errors that will need to be addressed to ensure that the company is in compliance with state and federal air pollution control rules and the permit for EU K004 is correct. Specifically:

- 1) **Confirmation of potential to emit (PTE).** As we discussed in March, the VOC limits in the permit for EU K004 were calculated based on the information in the company's August 1999 Permit-to-Install (PTI) and PTO applications. These applications list the maximum substrate speed for EU K004 of 18.6 reams per hour, and a maximum hourly use rate of 9.8 gallons of Adcote 33R4G. Based on the information provided while we were discussing the results of the company's

voluntary stack test in May 2009, the coating line actually has a maximum operating rate of 8.26 reams per hour (based on 162.5 linear feet/minute) and a use rate of 30.56 pounds per hour (or ~4.24 gallons per hour with a coating density of 7.2 pounds per hour). A review of the stack test report for the April 8, 2003 emissions test on EU K004 created additional uncertainty about the PTE for EU K004 as it included a fax from Convertapax dated April 21, 2003 that indicated that 876 pounds of coating were applied during the 3-hour test at 3.54 pounds per ream running at 162 feet per minute (~122 gallons total or 40 gallons per hour). It is critical that the true PTE be determined for this emissions unit at its maximum operating rate because the applicability of federal and state air pollution control rules is based upon this amount. Please review this information and confirm which of the maximum rates are correct as it applies to the worst-case coating (Adcote 33R4G).

- 2) **VOC rule applicability.** In the air permits Ohio EPA has issued for EU K004, Ohio Administrative Code (OAC) rule 3745-21-09(Y)(2) has been cited as the applicable VOC rule. However, when I looked more closely at the definitions in OAC rule 3745-21-01(D), I discovered that the rule cited in your permits is not the correct applicable rule. Instead of paragraph (Y), this EU is actually subject to OAC rule 3745-21-09(F) because the heat seal coating line is considered a paper coating line and not a printing line. Paper coating is defined in paragraph 85 of OAC rule 3745-21-01(D) as "a coating applied by dipping or by means of a knife, roll or extrusion coater to paper, paperboard, pressure sensitive tapes or labels, plastic film, or metal foil. Excluded from this definition are coatings used in substrate formation within a papermaking system and coatings applied within a printing line which is in compliance with the emission requirements contained in paragraph (Y) of rule 3745-21-09 of the Administrative Code."

OAC rule 3745-21-09(Y) applies to flexographic, packaging rotogravure and publication rotogravure **printing** lines. Printing lines are defined as "an operation consisting of a series of one or more roll printers and any associated in-line roll coaters, in-line extrusion coaters, drying areas and ovens wherein one or more surface coatings are applied, dried, and/or cured. It is not necessary for an operation to have an oven or drying area in order to be included within this definition." While your heat seal coating line is considered a "roll coater", which is defined in paragraph 96 of OAC rule 3745-21-01(D) as "an apparatus in which a uniform layer of coating material is applied by means of a roll or rolls across the entire width of a moving substrate, which is fed from an unwinding roll.", there is no "roll printer" on this line. A roll printer is defined in paragraph 97 of OAC rule 3745-21-01(D) as "an apparatus in which a surface coating is applied by means of a roll or rolls with only partial coverage across the width of a moving substrate, which is fed from an unwinding roll. The partial coverage results in the formation of words, designs or pictures on the substrate." Because EU K004 does not form words, designs or pictures on the substrate, it does not meet the definition of a roll printer, and if it is not a roll printer and therefore not a printing line, it cannot meet the definitions of any of the printing line types to which OAC rule 3745-21-09(Y) would apply.

The requirements of OAC rule 3745-21-09(F) are different from the requirements for printers in OAC rule 3745-21-09(Y). Convertapax was able to claim exemption from OAC rule 3745-21-09(Y) due to a facility-wide use limitation on coatings and inks used each year of <148 tons which is required to be tracked per Part II.C.3 of the PTO for EU K004. There is no similar exemption in OAC rule 3745-21-09(F) except for OAC rule 3745-21-09(A)(3) that specifies the rule only applies to sources installed or modified after October 19, 1979 or those at a facility that has facility-wide PTE of greater than 100 tons of VOC per year. Paragraph (F)(1) specifies that "no owner or operator of a paper coating line which has a maximum application of coating materials greater than three gallons in any one day may cause, allow or permit the discharge into the ambient air of any volatile organic compounds after the date specified in paragraph (C)(5) of rule 3745-21-04 of the Administrative Code in excess of 2.9 pounds of VOC per gallon of coating, excluding water and exempt solvents, or, if a control system is employed, 4.8 pounds of VOC per gallon of solids from such paper coating line."

Based on the coating information that has been provided, both types of coatings that are used in K004 would exceed these VOC content levels and would not comply with this rule. Specifically, the Adcote 33R4G contains 5.26 pounds of VOC/gallon and the Adcote 33-131 contains 65% VOC or ~4.88 pounds VOC/gallon if the coating has a density of 7.5 pounds per gallon. The company has indicated that coating reformulation is not an option, but fortunately, OAC rule 3745-21-09(B)(6) provides the following alternative limit:

"In lieu of complying with the pounds of VOC per gallon of solids limitations contained in paragraphs (D), (E), (F)(1), (G), (I)(1), (J), (K)(1), (U), and (HH) of this rule, any owner or operator of a coating line that employs a control system may choose to demonstrate that the capture and control equipment provide not less than an eighty one per cent reduction, by weight, in the overall VOC emissions from the coating line and that the control equipment has an efficiency of not less than ninety per cent, by weight, for the VOC emissions vented to the control equipment. In such cases, the owner or operator shall comply with the certification and permit application requirements specified in paragraph (B)(3) of rule 3745-21-04 of the Administrative Code and shall achieve compliance with the overall VOC emission reduction and control efficiency requirements in accordance with the applicable compliance schedules contained in paragraph (C) of rule 3745-21-04 of the Administrative Code. Also, in such cases, the owner or operator of the coating line shall be subject to the recordkeeping and reporting requirements contained in paragraph (B)(3)(I) of this rule."

This rule-based limit will need to be incorporated into your revised permit, and it will be the company's responsibility to demonstrate compliance with the limit after the permit is issued as detailed in item 4, below. However, I am concerned that compliance with this alternative limit is not currently achievable as described in item 3, below.

- 3) **Capture and control efficiency issues.** During my site visits, I have evaluated the capture efficiency of the incinerator system (i.e., how much of the VOC emissions generated on the K004 line are vented to the incinerator) and have observed the presence of three "pick up" points that do not vent to the incinerator but instead are vented through another stack without any control. Although this separate venting system was not in operation during my December 2009 and March 2010 site visits, it was operating during the stack test on April 29, 2010. This may have been the source of the strong solvent odors we observed on the roof of the building during the test.

The current permit for EU K004 assumes that 100% of the VOC emissions generated on the line are vented to the incinerator. However, we know that a portion of the VOC emissions generated on the line were not measured during the April 29, 2010 stack test because the separate venting system was in use. Part II.E.2.c. of the PTO for EU K004 specifies that the control efficiency is to be calculated by dividing the outlet emission rate by the total VOC input rate. The VOC input rate at the 100 feet/minute substrate speed achieved during the April 29, 2010 test would be 13.72 pounds of VOC per hour, and the average stack outlet rate was measured at 2.36 pounds of VOC (as carbon) based on the test results provided on June 1, 2010. This rate represents an overall control efficiency of 82.8% if you assume 100% capture which would equal 3.84 pounds per hour at a full machine speed of 162.5 feet per minute of substrate (assuming this speed is the correct maximum substrate rate).

It is important to note that the target emission rate from the incinerator stack during emissions testing to demonstrate compliance with the rule will vary depending on the substrate speed and associated coating use rate, which are in direct proportion to meet coating thickness specifications for the finished product. To comply with the minimum capture requirement of 90% and a minimum incinerator destruction efficiency of 90% (overall control efficiency of 81%), the measured outlet rate running at 100 feet per minute would need to be 1.24 pounds per hour with another 1.37 pounds per hour vented directly to the atmosphere, for a total emission rate of 2.61 pounds per hour. Even if we were to assume 95% of the emissions were captured during the April 29, 2010 stack test, the destruction efficiency of the incinerator would have been only 81.9% (less than 90%) for a total emission rate of 3.05 pounds of VOC per hour which represents an overall control efficiency rate of only 77.8% (less than 81%). As you can see, the current VOC emission rates do not meet the minimum capture and overall control efficiencies required by OAC rule 3745-21-09(B)(6).

Since it appears that Convertapax cannot currently meet the allowable emission rates based on the capture and control efficiencies demonstrated to date, Ohio EPA cannot issue a corrected permit at this time and the company will remain out of compliance with the applicable state VOC rules until the problem is satisfactorily addressed. To attain compliance with the correct applicable rule requirements, Convertapax must ensure that at least 90% of the VOC emissions generated by EU K004 are vented to the incinerator, and must ensure that at least 90% of the VOC emissions vented to the incinerator are destroyed. The total allowable VOC

emission rate that complies with the minimum capture and destruction efficiency requirements in OAC rule 3745-21-09(B)(6) at a maximum substrate speed of 162.5 linear feet per minute and 22.31 pounds VOC per hour use rate are calculated as follows:

$$\begin{aligned} \text{Potential allowable VOC emission rate} \\ \text{(pounds per hour)} &= (\text{VOC use rate} \times 90\% \text{ capture} \\ &\quad \text{efficiency} \times 90\% \text{ destruction} \\ &\quad \text{efficiency}) + (\text{VOC use rate} \times 10\% \\ &\quad \text{fugitive VOC emissions}) \\ &= (22.31 \text{ lbs/hr} \times 0.90 \times (1-.90)) + \\ &\quad (22.31 \text{ lbs/hr} \times 0.1) \\ &= 2.01 \text{ lbs/hour (from the incinerator} \\ &\quad \text{stack)} + 2.23 \text{ lbs per hour (from the} \\ &\quad \text{direct vent stack)} \\ &= 4.24 \text{ pounds per hour} \end{aligned}$$

Please note that, if the company were in compliance with the capture and control requirements in OAC rule 3745-21-09(B)(6), the potential toluene emission rate at the maximum substrate speed of 162.5 feet per minute would be 3.43 pounds per hour considering 81% of the total VOC rate (4.24 pounds per hour) is toluene (59.2% toluene out of a total 73% VOC in the coating). This represents potential toluene emissions of 15.04 tons per year (3.43 pounds per hour X 8,760 hours per year X 1 ton/2000 pounds), which is greater than the 10 ton per year threshold at which 40 CFR Part 63 Subpart JJJJ, the National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating (copy of rule enclosed), as well as Title V operating permit requirements in OAC Chapter 3745-77, would apply.

The toluene emission rate achieved during the April 29, 2010 stack test at an overall control efficiency of 77.8% was 2.47 pounds per hour (at 100 ft. per minute and assuming 95% capture), which would equate to 10.8 tons of toluene per year if the company operated 100% of the time, which it does not. While there is currently no limit in the installation or operating permits for EU K004 to restrict toluene emissions to less than 10 tons per year, a review of the permit application for the reconstruction of EU K004 revealed that the company had requested a federally enforceable restriction to avoid being subject to 40 CFR Part 63 Subpart JJJJ and Title V requirements. In addition, actual toluene emissions calculated from the last several years of VOC data do not appear to have ever exceeded 10 tons. Therefore, Ohio EPA should be able to prevent the need for the company to comply with the federal requirements as originally intended by re-establishing a limit on toluene of less than 10 tons per year in the EU K004 permit.

Within thirty (30) days of your receipt of this letter, please prepare and submit to Ohio EPA, SEDO, a compliance plan and schedule that outlines the steps Convertapax will take to attain compliance with OAC rule 3745-21-09(B)(6).

The plan must also address the operating restrictions (e.g., maximum line speed or hours of operation) the company is willing to accept to limit toluene emissions from EU K004 to less than ten tons per year.

To comply with OAC rule 3745-21-09(B)(6), the company will most likely need to purchase and install a new incinerator system that provides a higher and more reliable rate of VOC capture and destruction than the current system. Not only will this reduce overall VOC emissions from the facility, it should optimize the amount of natural gas that must be used to destroy the VOC emissions from EU K004. Also, as you evaluate ways to comply with the 90% capture efficiency requirement, you should focus on limiting fugitive VOC emissions that are not controlled by the incinerator and are currently being directly vented to the atmosphere. Possible options would include re-direction of the gas stream that is now being directly vented so that it instead vents through the incinerator system, or permanently disabling that direct venting system if it will not create a worker exposure problem and the current incinerator system can still achieve a 90% capture rate. Enclosed is a brief list of vendors that you may want to contact for assistance. The enclosure also includes a link to the The Ohio Air Quality Development Authority website which you may want to investigate as that organization provides low interest loans and grants to small businesses for pollution control projects.

- 4) ***Permit corrections and new testing requirements.*** If the company does not elect to accept an operating restriction to restrict potential toluene emissions to less than ten tons per year, the modified permit for EU K004 will be a permit-to-install (PTI) and the company will need to submit an application for a Title V operating permit. Alternatively, if an operating restriction is requested to limit HAP emissions to levels that will allow avoidance of Title V and MACT requirements, Ohio EPA will issue a federally enforceable permit-to-install and operate (FEPTIO). The following corrections and changes to the permit must be made:

- the capture, destruction and overall control requirements of OAC rule 3745-21-09(B)(6) must be added;
- the reference to OAC rule 3745-21-09(Y)(2)(b), as well as the exemption from this rule in Part II.A.2.a., must be removed;
- the short term (pound per hour) VOC limit considered Best Available Technology (BAT) under OAC rule 3745-31-05(A)(3) must be changed to reflect the correct PTE of EU K004 and the hourly VOC emission rate that represents 90% capture efficiency and 90% control efficiency, and separate stack and fugitive pound per hour limits will be established;
- if no operating restriction is requested, a BAT limit on tons of VOC per year must be added that corresponds to the total maximum allowable hourly VOC emission rate multiplied by 8,760 hours of operation per year;
- if no operating restriction is requested, the requirements of 40 CFR Part 63 Subparts A and JJJJ must be incorporated;

- if an operating restriction is requested, rolling, 12-month average VOC and HAP emissions limits (for both individual HAPs and total HAPs) will be added under OAC rule 3745-31-05(D) that correspond to the restricted substrate rate or restricted hours of operation;
- the operational restriction on incinerator operating temperature will need to be removed and replaced with language that requires the company to monitor the incinerator system and operate at the minimum incinerator temperature recorded during a stack test where compliance with the applicable requirements was demonstrated;
- the monitoring and recordkeeping requirements in Part II.C. of the PTO for EU K004 must be revised to: (1) replace the current VOC tracking methods required by the permit (tracking of gallons of coating used) with the method used by the company (tracking of reams of substrate processed and pounds of coating used) and (2) add the requirement to track HAP emissions and any other information necessary to demonstrate compliance with requested operational limitations and associated emissions limits;
- the reporting requirements in Part II.D. must be revised to remove the reporting requirements that correspond to the printing VOC rule (OAC rule 3745-21-09(Y)) and add the requirements associated with OAC rules 3745-21-09(F) or 3745-21-09(B)(6) and to add the annual permit evaluation report requirement and a quarterly deviation reporting requirement if an operating restriction is requested to limit facility-wide HAP emissions; and
- the testing requirements in Part II.E must be revised to include the requirements of OAC rule 3745-21-10(C). This will require the company to demonstrate the VOC content of the coating using EPA method 24, the capture efficiency using EPA method 204, and the VOC emission rate from the incinerator stack using EPA method 25 (note that EPA method 25A was cited in error in the current EU K004 PTO).

Enclosed is a document that details the types of permit requirements that would be incorporated into Convertapax's permit for EU K004 to comply with OAC rule 3745-21-09(B)(6).

Should you have any questions or wish to schedule a meeting to discuss these issues, please contact me at (740) 380-5245 or via email at kim.reinbold@epa.state.oh.us.

Sincerely,



Kimbra L. Reinbold
Division of Air Pollution Control
Southeast District Office

KLR/mlm

Enclosures