Appendix J: VOC and HAP Synthetic Minor Source Determination

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CLCM must use the following methodology to calculate its VOCs emissions. This methodology must also be used to calculate individual and total HAP emissions by substituting HAPs in all locations that use the term VOC.

a. Steel Drum Process Line

i. Actual monthly emissions shall be calculated using the following equation:

$VOC_{STEEL} = E_{STEEL} \times (1 - ((CE_{STEEL}/100) \times (DE_{STEEL}//100))) \times T_{STEEL}$

Where:

VOC_{STEEL} = Monthly VOC emissions from the steel line, in pounds

E_{STEEL} = Emission factor for the uncontrolled emissions from the steel line based on emissions testing, in pounds of VOC per drum processed (TE_{st} + $Scrubber_{outlet}$ from Appendix I)

CE_{STEEL}[1] = Capture efficiency of the steel line determined from performance test or the capture efficiency necessary to achieve the overall control required by this consent decree, whichever is less efficient.

DE_{STEEL} = Destruction efficiency of the RTO determined from performance test of the Steel Drum Process Line[2] or 98%, whichever is less efficient.

T_{STEEL} = Number of steel drums processed each month

ii. CLCM must monitor steel drum throughput on a monthly basis.

b. Poly Drum Process Line

i. Actual monthly emissions shall be calculated using the following equation:

$VOC_{POLY} = E_{POLY} \times (1- ((CE_{POLY}/100) \times (DE_{POLY}/100))) \times T_{POLY}$

Where:

VOC_{POLY} = Monthly VOC emissions from the poly line, in pounds

[1] Use of CE and DE in this methodology is contingent on CLCM complying with the parametric set points required by the Consent Decree.

[2] The Painting Process Line will be operating concurrently during the performance test.

E_{POLY} = Emission factor for the uncontrolled emissions from the poly line based on emissions testing, in pounds of VOC per drum processed (TE_{pl} + RTO_{inlet} from Appendix I)

CE_{POLY} = Capture efficiency of the poly line determined from performance test or the capture efficiency necessary to achieve the overall control required by this consent decree, whichever is less efficient.

DE_{POLY} = Destruction efficiency of the RTO determined from performance test of the Poly Drum Process Line or 98%, whichever is less efficient.

T_{POLY} = Number of poly drums processed each month

ii. CLCM must monitor poly drum throughput on a monthly basis.

c. Poly Drum Label Stripping Process Line, P44

i. Actual monthly emissions from P44 shall be calculated using the following equation.

$VOC_{P44} = \sum_{i=1}^{n} VOL_{si} \times Cs_{si}$

Where:

VOC_{P44}= Monthly VOC emissions from P44, in pounds

VOL_{si} = Volume of solvent i used per month, in gallons.

C_{si} = VOC content of solvent i, in pounds per gallon.

ii. CLCM shall identify and track the amount of each VOC-containing solvent used each month

iii. For each solvent used, CLCM shall keep and maintain a unique name or identification number and a SDS or equivalent document to demonstrate the VOC content of the material.

d. Fuel Combustion

i. Emissions from fuel combustion shall be determined based on the quantity of fuel consumed, as reported on the utility bills and emission factors published in AP-42.

ii. CLCM shall keep a record of the quantity of fuel consumed each month and of its calculation of monthly VOC emissions from fuel combustions, VOC_{FUEL}, in pounds.

e. Painting Process Line

i. Actual monthly emissions from the painting process line shall be calculated using the following equation.

$VOC_{PAINT} = (\sum_{i=1}^{n} VOL_{si} \times C_{si} + \sum_{i=1}^{m} VOL_{ci} \times C_{ci}) \times (1 - ((CE_{PAINT}/100) \times (DE_{PAINT}/100)))$

Where:

VOC_{PAINT} = Monthly VOC emissions from painting process line, in pounds

VOL_{si} = Volume of solvent i used per month, in gallons.

C_{si} = VOC content of solvent i, in pounds per gallon.

VOL_{ci} = Volume of coating i used per month, in gallons.

C_{ci} = VOC content of coating i, in pounds per gallon.

CE_{PAINT} = Capture efficiency of the paint line as determined by either a performance test or an engineering assessment.

DE_{PAINT} = Destruction efficiency of the RTO determined from performance test of the Painting Process Line[3] or 98%, whichever is less efficient.

ii. CLCM shall identify and track the amount of each VOC-containing solvent and coating used each month

iii. For each solvent and coating used, CLCM shall keep and maintain a unique name or identification number and a SDS or equivalent document to demonstrate the VOC content of the material.

iv. Any value for CEPAINT based on an engineering assessment shall be submitted to EPA and DNR for review and approval.

f. Wastewater System

i. CLCM shall use an emission model such as WATER9, referenced in section NR 419.045, Wisconsin Administrative Code, to calculate VOC emissions from the wastewater system.

ii. CLCM shall keep a record of its calculation of monthly VOC emissions from the wastewater system, VOC_{WW}, in pounds per month.

[3] Steel Drum Process Line will be operating concurrently during the performance test.

g. Wash Water Tanks

i. Emissions from the wash water tanks when the process lines are not operating shall be determined based on VOC-sampling of the wash water and emission calculation procedures such as those contained in Chapter 7 of AP-42, "Liquid Storage Tanks."

ii. CLCM shall keep a record of its calculation of monthly VOC emissions from the wash water tanks, VOC_{WWT}, in pounds per month.

h. Total Emissions

The resulting facility-wide emission rates would then be calculated as follows:

$VOC_{TOTAL} = VOC_{STEEL} + VOC_{POLY} + VOC_{P44} + VOC_{FUEL} + VOC_{WW} + VOC_{PAINT} + VOC_{WWT}$

Where:

VOC_{TOTAL} = Monthly VOC emissions from the facility, in pounds
VOC_{STEEL} is determined as previously described
VOC_{POLY} is determined as previously described
VOC_{P44} is determined as previously described.
VOC_{FUEL} is determined as previously described
VOC_{WW} is determined as previously described
VOC_{PAINT} is determined as previously described
VOC_{WWT} is determined as previously described