



1/30/2015

Mr. Scott Bobst
Hydrodec of North America, LLC
2012 Steinway Boulevard, SE
Canton, OH

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 1576051998
Permit Number: P0117927
Permit Type: Initial Installation
County: Stark

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- How to appeal this permit
• How to save money, reduce pollution and reduce energy consumption
• How to give us feedback on your permitting experience
• How to get an electronic copy of your permit

How to appeal this permit

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

Certified Mail

Table with 2 columns: Yes/No and various permit conditions like TOXIC REVIEW, SYNTHETIC MINOR TO AVOID MAJOR NSR, CEMS, MACT/GACT, NSPS, NESHAPS, NETTING, MODELING SUBMITTED, SYNTHETIC MINOR TO AVOID TITLE V, FEDERALLY ENFORCABLE PTIO (FEPTIO), SYNTHETIC MINOR TO AVOID MAJOR GHG.

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Canton City Health Department at (330)489-3385 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Erica R. Engel-Ishida, Manager
Permit Issuance and Data Management Section, DAPC

Cc: Canton



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
Hydrodec of North America, LLC**

Facility ID:	1576051998
Permit Number:	P0117927
Permit Type:	Initial Installation
Issued:	1/30/2015
Effective:	1/30/2015
Expiration:	1/30/2020



Division of Air Pollution Control
Permit-to-Install and Operate
for
Hydrodec of North America, LLC

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Final Permit-to-Install and Operate
Hydrodec of North America, LLC
Permit Number: P0117927
Facility ID: 1576051998
Effective Date: 1/30/2015

Authorization

Facility ID: 1576051998
Application Number(s): A0051689
Permit Number: P0117927
Permit Description: Initial installation of six hydrotreating reactors, six scrubbers, and four polishing columns to refine and degas used transformer oil for the manufacture of refined mineral oil.
Permit Type: Initial Installation
Permit Fee: \$2,250.00
Issue Date: 1/30/2015
Effective Date: 1/30/2015
Expiration Date: 1/30/2020
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Hydrodec of North America, LLC
2021 Steinway Blvd., SE
Canton, OH 44707

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

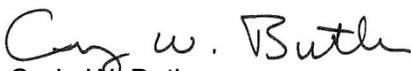
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Authorization (continued)

Permit Number: P0117927

Permit Description: Initial installation of six hydrotreating reactors, six scrubbers, and four polishing columns to refine and degas used transformer oil for the manufacture of refined mineral oil.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P004
Company Equipment ID:	Non Treated Oil Polishing Columns
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: Transformer Oil Refining Plants

Emissions Unit ID:	P001
Company Equipment ID:	Oil Refining Plant #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P002
Company Equipment ID:	Oil Refining Plant # 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P003
Company Equipment ID:	Oil Refining Plant # 3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
Hydrodec of North America, LLC
Permit Number: P0117927
Facility ID: 1576051998
Effective Date: 1/30/2015

A. Standard Terms and Conditions



1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the [DO/LAA] in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.



13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



Final Permit-to-Install and Operate
Hydrodec of North America, LLC
Permit Number: P0117927
Facility ID: 1576051998
Effective Date: 1/30/2015

B. Facility-Wide Terms and Conditions



1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) B.2.a)(2), B.4.e) through B.4.h) and B.5.c).
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) B.2.a)(1), B.2.b)(1), B.3., B.4.a) through d), B.5.b), and B.6.

2. Applicable Facility-Wide Emissions Limitations and/or Control Requirements

- a) The following applicable rules and/or requirements and applicable emissions limitations and/or control measures apply to the following 4 emissions units combined P001, P002, P003, and P004. The combined emissions from these units shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
(1)	OAC rule 3745-31-05 (D) [Synthetic Minor to Avoid Title V]	<p>Emissions of any individual hazardous air pollutant (HAP) shall not exceed 8.00 tons per year, based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Emissions of all hazardous air pollutants (HAPs) combined shall not exceed 23.00 tons per year, based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Emissions of volatile organic compounds (VOC) shall not exceed 95.00tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p>See sections B.2.b)(1) and B.3.</p>
(2)	ORC 3704.03 (F)(4)(c) and OAC rule 3745-114-01	See sections B.4.e) through B.4.h), and B.5.b).

b) Additional Terms and Conditions

- (1) All emissions from P001, P002, P003, and P004 shall be vented to a regenerative thermal oxidizer (RTO) control device to control emissions of HAP and VOC. The following conditions shall be achieved:



- a. The RTO shall have at least 90% control efficiency; and
- b. The RTO shall be operated at least 90% of the time while emissions units P001, P002, P003, and/or P004 are operating. Therefore, there is a maximum of 10% of the time that P001, P002, P003, and/or P004 are allowed to operate uncontrolled (including startup, shutdown, and malfunction periods of the RTO).

3. Operational Restrictions

- a) To ensure enforceability during the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the following emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions from Emissions Units P001, P002, P003, and P004, combined (tons)		
	Individual HAP	Total HAP	VOC
1	0.66	1.91	7.91
1-2	1.32	3.82	15.82
1-3	1.98	5.73	23.73
1-4	2.64	7.64	31.64
1-5	3.30	9.55	39.55
1-6	3.96	11.46	47.46
1-7	4.62	13.37	55.37
1-8	5.28	15.28	63.28
1-9	5.94	17.19	71.19
1-10	6.60	19.10	79.10
1-11	7.26	21.01	87.01
1-12	8.00	23.00	95.00



After the first 12 calendar months of following the issuance of this permit, compliance with the annual emission limitations for Individual HAP, Total HAP, and VOC shall be based upon a rolling, 12-month summation of the emissions.

4. Monitoring and/or Recordkeeping Requirements

- a) The permittee shall calculate and record the following information each month for emissions units P001, P002, P003, and P004 combined:
- (1) the company identification for each material processed;
 - (2) the number of gallons of material processed per emissions unit;
 - (3) the total hours of operation per emissions unit;
 - (4) the total hours of operation per emissions unit when the RTO was in operation (i.e. controlled hours), excluding periods of startup, shutdown, and malfunction periods of the RTO;
 - (5) The total percentage of hours the RTO was operated while the emissions unit was in operation, per emissions unit, i.e. the value from 4.a)(4) divided by 4.a)(3),
 - (6) The average percentage of hours the RTO was operated while emissions units were operated, i.e. average of the values from 4.a)(5);
 - (7) the number of gallons of material processed combined for emissions units P001, P002, P003, and P004;
 - (8) the number of regeneration cycles for each polishing column per emissions unit;
 - (9) the total monthly emissions of each individual HAP, in tons, from emissions units P001, P002, P003, and P004 combined (see calculation approach in section 6.a)(1));
 - (10) the total monthly emissions of all HAPs combined, in tons, from emissions units P001, P002, P003, and P004 combined (see calculation approach in section 6.a)(2));
 - (11) the total monthly VOC emissions, in tons, from emissions units P001, P002, P003, and P004 combined (see calculation approach in section 6.a)(3));
 - (12) the rolling, 12-month summation of emissions of each individual HAP, in tons, from emissions units P001, P002, P003, and P004, combined, i.e., the summation of the facility-wide monthly emissions of each individual HAP from (9) above for the most recent month and the previous 11 months;
 - (13) the rolling, 12-month summation of all HAP emissions, in tons, from emissions units P001, P002, P003, and P004, combined, i.e., the summation of the facility-wide monthly emissions of total HAP from (10) above for the most recent month and the previous 11 months; and
 - (14) the rolling, 12-month summation of the VOC emissions, in tons, from emissions units P001, P002, P003, and P004, combined, i.e., the summation of the facility-wide monthly



emissions of VOC from (11) above for the most recent month and the previous 11 months.

- b) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable combustion temperature within the RTO, during any period of time when emissions units controlled by the RTO are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions units were in compliance. Until compliance testing has been conducted, the RTO shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual.
- c) The permittee shall properly install, operate, and maintain continuous temperature monitors and record(s) that measure and record(s) the combustion temperature within the RTO when the emissions units are in operation, including periods of startup and shutdown. The permittee shall record the combustion temperature on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable temperature setting shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate temperature range is established to demonstrate compliance. These records shall be maintained at the facility for a period of no less than 3 years.
- d) Whenever the monitored average combustion temperature within the RTO deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
 - (1) the date and time when the deviation began;
 - (2) the magnitude of the deviation at the time;
 - (3) the date the investigation was conducted;
 - (4) the name(s) of the personnel who conducted the investigation; and
 - (5) the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- (6) a description of the corrective action;
- (7) the date corrective action was completed;
- (8) the date and time the deviation ended;
- (9) the total period of time (in minutes) during which there was a deviation;



- (10) the temperature readings immediately after the corrective action was implemented; and
- (11) the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the a Canton City Health Department, Air Pollution Control Division. The permittee may request revisions to the permitted temperature range based upon information obtained during future performance tests that document compliance with the allowable emission rates for the controlled pollutants. In addition, approved revisions to the temperature range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated in this permit by means of an administrative modification.

- e) The permit-to-install and operate (PTIO) application for these emissions units, P001, P002, P003, and P004, was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-.1, using data from the permit application, and modeling was performed for each toxic air contaminant emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result from the approved air dispersion model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
 - (1) the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound emitted from the emissions units, (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - a. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices", or
 - b. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices", the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - (2) The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
 - (3) This standard is then adjusted to account for the duration of the exposure or the operating hours of the emissions units, i.e., 24 hours per day and 7 days per week, from



that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$\frac{TLV}{10} * \frac{8}{24} * \frac{5}{7} = \left(\frac{4 * TLV}{24 * 7} \right) = MAGLC$$

(4) The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or “worst case” toxic contaminant:

a. Toxic Contaminant: C6 as Hexane

TLV (mg/m³): 176.24

Maximum Hourly Emission Rate (lbs/hr): 18.680 lbs/hr (uncontrolled)

Predicted 1-Hour Maximum Ground-Level Concentration (µg/m³): 2,031

MAGLC (µg/m³): 4,196

b. Toxic Contaminant: Toluene

TLV (mg/m³): 75.36

Maximum Hourly Emission Rate (lbs/hr): 5.08 lbs/hr (uncontrolled)

Predicted 1-Hour Maximum Ground-Level Concentration (µg/m³): 553

MAGLC (µg/m³): 1,794

c. Toxic Contaminant: m-Xylene and p-Xylene

TLV (mg/m³): 434.19

Maximum Hourly Emission Rate (lbs/hr): 3.79 lbs/hr (uncontrolled)

Predicted 1-Hour Maximum Ground-Level Concentration (µg/m³): 413

MAGLC (µg/m³): 10,338

The permittee, has demonstrated that emissions of C6 as Hexane, Toluene, and Xylene, from emissions units P001, P002, P003, and P004 combined, are calculated to be less than eighty percent of the maximum acceptable ground-level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F).

f) Prior to making any physical changes to or changes in the method of operation of the emissions units, that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the



parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- (1) changes in the composition of the materials used or the use of new materials that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- (2) changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- (3) physical changes to the emissions units or their exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground-level concentration, and he/she may require the permittee to submit a permit application for the increased emissions.

- g) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
 - (1) a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - (2) the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - (3) a copy of the computer model run(s) that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions units to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - (4) the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions units or the materials applied.
- h) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute",



ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

5. Reporting Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- b) The permittee shall submit quarterly deviation (excursion) reports for the following emissions units that identify:
 - (1) all deviations (excursions) of the following emissions limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
 - a. all exceedances of the facility-wide rolling, 12-month individual HAP emission limitation specified in 2.a)(1) as recorded in 4.a)(12) above;
 - b. all exceedances of the facility-wide rolling, 12-month total combined HAPs emission limitation specified in 2.a)(1) as recorded in 4.a)(13) above;
 - c. all exceedances of the facility-wide rolling, 12-month VOC emission limitation specified in 2.a)(1) as recorded in 4.a)(14) above;
 - d. all exceedances of the operating time of the RTO limitation specified in 2.b)(1)b., as recorded in 4.a)(6)
 - e. each period of time (start time and date, and end time and date) when the average combustion temperature within the RTO was outside of the range specified by the manufacturer and/or outside the acceptable range following any required compliance demonstration;
 - f. each incident of deviation described in term 5.b)(1)e. above where a prompt investigation was not conducted;



- g. each incident of deviation described in term 5.b)(1)e. above where prompt corrective action, that would bring the emissions units into compliance and/or the temperature within the RTO into compliance with the acceptable range, was determined to be necessary and was not taken; and
- h. each incident of deviation described in term 5.b)(1)e. above where proper records were not maintained for the investigation and/or the corrective action(s).

(2) the probable cause of each deviation (excursion);

(3) any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

(4) the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted each year by January 31 (covering October - December), April 30 (covering January - March), July 31 (covering April - June), and October 31 (covering July - September), unless an alternative schedule has been established and approved by the Canton City Health Department, Air Pollution Control Division.

- c) The permittee shall submit an annual Permit Evaluation Report (PER) to the Canton City Health Department, Air Pollution Control Division by the due date identified in the Authorization section of this permit. The annual PER shall cover a reporting period of no more than 12 months for each air contaminant source identified in this permit. The permittee shall include in the annual PER any changes made during the calendar year to a parameter or value entered into the dispersion model that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

6. Testing Requirements

- a) Compliance with the Emissions Limitations and/or Control Requirements specified in sections B.2.a) and B.2.b) of these terms and conditions shall be determined in accordance with the following methods:



(1) Emission Limitation:

Emissions of any individual hazardous air pollutant (HAP) shall not exceed 8.00 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in term B.4.a)(12) and the testing requirements in term 6.b).

The emission limitation was established based on the maximum potential to emit from the facility calculated as shown below. The following calculation methods shall be employed for each of the identified individual HAPs to generate the records for term B.4.a)(12), by substituting actual operating values (gallons processed, # of regeneration cycles, operating hours of emissions unit, and % of RTO operation recorded per B.4.a)), versus potential operating values.

P001, P002, and P003 are 3 identical reactor plants which each consist of 2 reactors and a polishing column. P004 is a non-treated polishing column, in which the emissions have been estimated to be equivalent to a reactor plant polishing column.

Using data from a self-evaluation study stack test conducted by the facility on November 12-13, 2013, the following uncontrolled emissions factors were determined in order to calculate emissions of each individual HAP. The emission factors for the 2 reactors were determined by dividing the average emissions test result (lbs) by the production rate during the stack test which took place over a 1 hour period while 875 gals of transformer oil was processed. The polishing columns only generate emissions during regeneration cycles, so the average emissions test result (lbs/hr) was assumed to represent one regeneration cycle.

Hazardous Air Pollutant (HAP)	Emission Factor for the 2 Reactors per each emissions unit P001, P002, and P003 (lb/gal processed)	Emission Factor for each Polishing Column per each emissions unit P001, P002, P003, and P004 (lb/regeneration cycle)
Benzene	6.7429E-06	0.4830
C6 as Hexane*	2.2514E-05	4.6700
Carbon Disulfide	1.7143E-08	1.3900E-04
Cyclohexane	4.4571E-05	0.5870
Ethylbenzene	2.1714E-06	0.2030
Hexane	1.2571E-05	0.1670
m-Xylene and p-Xylene	8.4571E-06	0.9480
o-Xylene	4.1143E-06	0.3830
Toluene	1.8057E-05	1.2700



*This is the HAP that produces the highest individual HAP emissions, which was used to establish the restrictions within this permit.

The emission factor for each individual HAP was multiplied by the maximum potential production rate to find the maximum hourly uncontrolled emissions for each emissions unit. The emissions from the 2 reactors and the polishing column are calculated separately.

The following calculation demonstrates how the C6 as Hexane emissions were determined for the 2 reactors per each emissions unit. This calculation was used to determine the emissions for each individual HAP.

$$\frac{2.2514 * 10^{-5} \text{ lb}}{\text{gal}} * \frac{527 \text{ gals}}{\text{hr}} = 0.011865 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane}$$

Where:

$\frac{2.2514 * 10^{-5} \text{ lb}}{\text{gal}}$	=	Uncontrolled C6 as Hexane emission factor for 2 reactors per each emissions unit P001, P002, and P003, lb/gal transformer oil processed, from the emission factor table above.
$\frac{527 \text{ gals}}{\text{hr}}$	=	Maximum potential production rate for 2 reactors per each emissions unit P001, P002, and P003, gals/hr, as provided in permit application #A0051689.
$\frac{0.011865 \text{ lb}}{\text{hr}}$	=	Calculated uncontrolled C6 as Hexane emissions maximum potential to emit from 2 reactors per each emissions unit P001, P002, and P003, lb/hr

The calculated hourly emissions was then multiplied by the maximum operating schedule of 8,760 hrs/yr and divided by 2,000 lbs/ton to determine the uncontrolled annual emissions of C6 as Hexane from the 2 reactors per each emissions unit.

$$\frac{0.011865 \text{ lb}}{\text{hr}} * \frac{8,760 \text{ hrs}}{\text{yr}} * \frac{\text{ton}}{2,000 \text{ lbs}} = 0.051969 \frac{\text{ton}}{\text{yr}} \text{ C6 as Hexane}$$

The C6 as Hexane emissions from the polishing columns were determined using the following calculation. The regeneration emission factor was multiplied by the maximum number of regeneration cycles that occur during each day. This value was then multiplied by the operating schedule of 365 days/yr and divided by 2,000 lbs/ton. Per PTIO Application #A0051689, each polishing column was determined to regenerate 10 times per day, which equates to a maximum of one regeneration cycle per hour. However, 12 regenerations per day were used to estimate emissions for the purposes of this permit.

$$\frac{4.6700 \text{ lb}}{\text{regeneration}} * \frac{1 \text{ regeneration}}{\text{hr}} = 4.6700 \frac{\text{lbs}}{\text{hr}} \text{ C6 as Hexane}$$



$$\frac{4.6700 \text{ lb}}{\text{regeneration}} * \frac{12 \text{ regenerations}}{\text{day}} * \frac{365 \text{ days}}{\text{yr}} * \frac{\text{ton}}{2,000 \text{ lbs}} = 10.22730 \frac{\text{tons}}{\text{yr}} \text{ C6 as Hexane}$$

Where:

$\frac{4.6700 \text{ lb}}{\text{regeneration}}$	=	Uncontrolled C6 as Hexane emission factor for polishing column regeneration processes of each emissions unit, lb/regeneration, from the emission factor table above.
$\frac{12 \text{ regenerations}}{\text{day}}$	=	Regeneration cycles per day. Per Application #A0051689, 12 regeneration cycles were estimated to occur during one 24-hour period of operation.
$\frac{10.22730 \text{ tons}}{\text{yr}}$	=	Calculated uncontrolled annual maximum potential to emit emissions of C6 as Hexane from each polishing column per each emissions unit P001, P002, P003, and P004, tons/yr

The total uncontrolled emissions per emissions unit P001, P002, and P003 were calculated by adding together the uncontrolled emissions from the 2 reactors and the uncontrolled emissions from each polishing column.

$$\frac{0.011865 \text{ lb}}{\text{hr}} + \frac{4.6700 \text{ lb}}{\text{hr}} = 4.6820 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane Uncontrolled}_{P001,2,or3}$$

$$\frac{0.051969 \text{ tons}}{\text{yr}} + \frac{10.22730 \text{ tons}}{\text{yr}} = 10.2793 \frac{\text{tons}}{\text{yr}} \text{ C6 as Hexane Uncontrolled}_{P001,2,or3}$$

The total uncontrolled emissions for P004 are equal to the uncontrolled emissions for a polishing column above.

The controlled emissions from the 2 reactors per each emissions unit and the controlled emissions from each polishing column were determined by multiplying the uncontrolled hourly emissions by one minus the control efficiency of the regenerative thermal oxidizer (RTO).

The controlled C6 as Hexane emissions from the 2 reactors per each emissions unit were determined using the following calculation:

$$\frac{0.011865 \text{ lb}}{\text{hr}} * (1 - 0.90) = 0.001187 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane}$$

Where:

$\frac{0.011865 \text{ lb}}{\text{hr}}$	=	Uncontrolled emissions of C6 as Hexane from 2 reactors per each emissions unit P001, P002, and P003 , lb/hr
0.90	=	Minimum control efficiency of RTO, 90%, expressed as a decimal fraction.



$\frac{0.001187 \text{ lb}}{\text{hr}}$	=	Controlled emissions of C6 as Hexane from 2 reactors per each emissions unit P001, P002, and P003, lb/hr
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The controlled C6 as Hexane emissions from each polishing column were determined using the following calculation:

$$\frac{4.6700 \text{ lb}}{\text{hr}} * (1 - 0.90) = 0.4670 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane}$$

Where:

$\frac{4.6700 \text{ lb}}{\text{hr}}$	=	Uncontrolled emissions of C6 as Hexane from each polishing column, lb/hr
0.90	=	Minimum control efficiency of RTO, 90%, expressed as a decimal fraction.
$\frac{0.4670 \text{ lb}}{\text{hr}}$	=	Controlled emissions of C6 as Hexane from each polishing column per each emissions unit P001, P002, P003, and P004, lb/hr

The calculated controlled hourly emissions from the 2 reactors were then multiplied by the operating schedule of 8,760 hrs/yr and divided by 2,000 lbs/ton to determine the controlled annual emissions of C6 as Hexane from the 2 reactors per each emissions unit with the RTO operating 100% of the time.

$$\frac{0.001187 \text{ lb}}{\text{hr}} * \frac{8,760 \text{ hrs}}{\text{yr}} * \frac{\text{ton}}{2,000 \text{ lbs}} = 0.005197 \frac{\text{ton}}{\text{yr}} \text{ C6 as Hexane}$$

The controlled annual C6 as Hexane emissions from the polishing columns were determined by multiplying the controlled hourly emissions from the polishing columns by the number of regeneration processes that occur during each day. This value was then multiplied by the operating schedule of 365 days/yr and divided by 2,000 lbs/ton with the RTO operating 100% of the time.

$$\frac{0.4670 \text{ lb}}{\text{regeneration}} * \frac{12 \text{ regenerations}}{\text{day}} * \frac{365 \text{ days}}{\text{yr}} * \frac{\text{ton}}{2,000 \text{ lbs}} = 1.0227 \frac{\text{tons}}{\text{yr}} \text{ C6 as Hexane}$$

Since the permittee requested to be able to operate the emissions unit without the RTO during some of the time during the year, the below calculations were used to establish that limitation.

The total percentage of hours the RTO was operated while the emissions unit(s) were in operation was determined by dividing the hours of operation when emissions were vented to the RTO divided by the total hours of operation per emissions unit (including time when emissions were vented to the RTO when it was not in operation). For the purposes of restricting emissions in this permit, 90% was used as the total percentage of hours the RTO was operated while emissions were being vented to it.

To determine the total emissions for each individual HAP from each emissions unit, the total controlled-time emissions were added to the total uncontrolled-time emissions from



each emissions unit. The total controlled-time emissions were determined by multiplying the controlled hourly emissions by the total percentage of hours the RTO was operated while the emissions units was in operation. The total uncontrolled-time emissions were determined by multiplying the uncontrolled hourly emissions by one minus the total percentage of hours the RTO was operated while the emissions unit was in operation.

$$\left(\frac{0.001187 \text{ lb}}{\text{hr}} * 0.90\right) + \left(\frac{0.4670 \text{ lb}}{\text{hr}} * 0.90\right) + \left(\frac{0.011865 \text{ lb}}{\text{hr}} * (1 - 0.90)\right) + \left(\frac{4.6700 \text{ lb}}{\text{hr}} * (1 - 0.90)\right) = 0.8896 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane}_{P001,2,or3}$$

$$\left(\frac{0.4670 \text{ lb}}{\text{hr}} * 0.90\right) + \left(\frac{4.6700 \text{ lb}}{\text{hr}} * (1 - 0.90)\right) = 0.8873 \frac{\text{lb}}{\text{hr}} \text{ C6 as Hexane}_{P004}$$

Where:

$\frac{0.001187 \text{ lb}}{\text{hr}}$	=	Controlled hourly emissions from the 2 reactors per each emissions unit, lb/hr
0.90	=	Total percentage of hours the RTO was operated while the emissions unit was in operation, expressed as a decimal fraction.
$\frac{0.4670 \text{ lb}}{\text{hr}}$	=	Controlled hourly emissions from each polishing column per each emissions unit, lb/hr
$\frac{0.011865 \text{ lb}}{\text{hr}}$	=	Uncontrolled hourly emissions from the 2 reactors per each emissions unit, lb/hr
$\frac{4.6700 \text{ lb}}{\text{hr}}$	=	Uncontrolled emissions from each polishing column per each emissions unit, lb/hr
(1 - 0.90)	=	Total percentage of hours the RTO was not operated while emissions were being vented to it, expressed as a decimal fraction.
$\frac{0.8896 \text{ lb}}{\text{hr}}$	=	Total C6 as Hexane emissions for each emissions unit P001, P002, and P003, lb/hr, with minimum RTO operation.
$\frac{0.8896 \text{ lb}}{\text{hr}}$	=	Total C6 as Hexane emissions for emissions unit P004, lb/hr, with minimum RTO operation.

The annual total emissions for each individual HAP from each emissions unit were determined using the same approach as for the hourly emissions, but instead substituting the annual tons/year values for the hourly lbs/hr value, as shown below.

$$\left(\frac{0.005197 \text{ ton}}{\text{yr}} * 0.90\right) + \left(\frac{1.0227 \text{ ton}}{\text{yr}} * 0.90\right) + \left(\frac{0.051969 \text{ ton}}{\text{yr}} * (1 - 0.90)\right) + \left(\frac{10.22730 \text{ ton}}{\text{yr}} * (1 - 0.90)\right) = 1.9531 \frac{\text{ton}}{\text{yr}} \text{ C6 as Hexane}_{P001,2,or3}$$



$$\left(\frac{1.0227 \text{ ton}}{\text{yr}} * 0.90\right) + \left(\frac{10.22730 \text{ ton}}{\text{yr}} * (1 - 0.90)\right) = 1.9432 \frac{\text{tons}}{\text{yr}} \text{C6 as Hexane}_{P004}$$

Where:

$\frac{0.005197 \text{ ton}}{\text{yr}} =$	Annual controlled emissions from the 2 reactors per each emissions unit, ton/yr
0.90 =	Total percentage of hours the RTO was operated while the emissions unit was in operation, expressed as a decimal fraction.
$\frac{1.0227 \text{ ton}}{\text{yr}} =$	Annual controlled emissions from each polishing column per each emissions unit, ton/yr
$\frac{0.051969 \text{ ton}}{\text{yr}} =$	Annual uncontrolled emissions from the 2 reactors per each emissions unit, ton/yr
$\frac{10.22730 \text{ ton}}{\text{yr}} =$	Uncontrolled emissions from each polishing column per each emissions unit, ton/yr
(1 - 0.90) =	Total percentage of hours the RTO was not operated while emissions were being vented to it, expressed as a decimal fraction.
$\frac{1.9531 \text{ tons}}{\text{yr}} =$	Total C6 as Hexane emissions for each emissions unit P001, P002, and P003, ton/yr, with minimum RTO operation.
$\frac{1.9432 \text{ tons}}{\text{yr}} =$	Total C6 as Hexane emissions for emissions unit P004, ton/yr, with minimum RTO operation.

Total C6 as Hexane emissions for emissions units P001, P002, P003, and P004, combined, in lbs/hr and ton/yr, with 90% (minimum) RTO operation is as follows:

$$\left(\frac{0.8896 \text{ lb}}{\text{hr}} * 3\right) + \frac{0.8873 \text{ lb}}{\text{hr}} = 3.5560 \frac{\text{lb}}{\text{hr}} \text{C6 as Hexane}_{90\% \text{ RTO}}$$

$$\left(\frac{1.9531 \text{ tons}}{\text{yr}} * 3\right) + \frac{1.9432 \text{ tons}}{\text{yr}} = 7.8024 \frac{\text{tons}}{\text{yr}} \text{C6 as Hexane}_{90\% \text{ RTO}}$$

The 7.8024 tons/yr value was rounded up to 8.00 tons/yr. There is approximately 0.11 tons/yr of additional C6 as Hexane emissions from the facilities 14-8,200 gallon and 9-100,000 gallon permit exempt tanks and the RTO natural gas combustion at 1.02 mmBTU/hr maximum firing rate. Therefore, the total facility-wide restricted potential to emit equals 8.00 + 0.11 = 8.11, which is less than the major source threshold of 10 tons/yr of individual HAP.

The emission limitation was set equal to a normal synthetic minor emission limitation of 9.00 minus the additional HAP emissions of 0.11, and rounded down to get the 8.00 limitation, which also equates to the restricted potential to emit of C6 as Hexane.



(2) Emission Limitation:

Emissions of all hazardous air pollutants (HAPs) combined shall not exceed 23.00 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the record keeping requirements specified in B.4.a)(13) and the testing requirements in 6.b).

The emission limitation was established based on the maximum potential to emit from the facility calculated as shown below. The following calculation methods shall be employed to generate the records for term B.4.a)(13), by substituting actual operating values recorded per B.4.a) versus potential operating values.

Using the emission factors, calculation method, and maximum potential values detailed in section B.6.a)(1) above, the following information represents the maximum potential to emit for P001, P002, P003, and P004 combined:

Hazardous Air Pollutant (HAP)	Uncontrolled Emissions for emissions units P001, P002, P003, and P004 combined		Controlled with RTO 90% of the time Emissions for emissions units P001, P002, P003, and P004 combined	
	Lbs/hr	Tons/yr	Lbs/hr	Tons/yr
Benzene	1.9427	4.2778	0.3691	0.8128
C6 as Hexane	18.7156	41.0651	3.5560	7.8024
Carbon Disulfide	0.0006	0.0013	0.0001	0.0003
Cyclohexane	2.4185	5.4508	0.4595	1.0356
Ethylbenzene	0.8154	1.7933	0.1549	0.3407
Hexane	0.6879	1.5500	0.1307	0.2945
m-Xylene and p-Xylene	3.8054	8.3630	0.7230	1.5890
o-Xylene	1.5385	3.3836	0.2923	0.6429
Toluene	5.1085	11.2502	0.9706	2.1375
Total HAPs	35.0331	77.1351	6.6562	14.6557

The 14.6557 tons/yr value was rounded up to 15.00 tons/yr. There is approximately 0.11 tons/yr of additional total HAP emissions from the facilities 14-8,200 gallon and 9-100,000 gallon permit exempt tanks and the RTO natural gas combustion at 1.02



mmBTU/hr maximum firing rate. Therefore, the total facility-wide restricted potential to emit equals $15.00 + 0.11 = 15.11$, which is less emission limitation of 23.0 and less than the major source threshold of 25 tons/yr of total HAP.

The emission limitation was set equal to a normal synthetic minor emission limitation of 24.00 minus the additional HAP emissions of 0.11 and rounded down to get the 23.0 limitation.

Note: This value is limited by the individual HAP emission limitation.

(3) Emission Limitation:

Emissions of volatile organic compounds (VOC) shall not exceed 95.00 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the record keeping requirements specified in B.4.a)(14) and the testing requirements in 6.b).

The emission limitation was established based on the maximum potential to emit from the facility calculated as shown below. The following calculation methods shall be employed to generate the records for term B.4.a)(14), by substituting actual operating values recorded per B.4.a) versus potential operating values.

Using data from a self-evaluation study stack test conducted by the facility on November 12-13, 2013, the following uncontrolled emissions factors were determined in order to calculate VOC emissions. The emission factors for the 2 reactors were determined by dividing the average emissions test result (lbs) by the production rate during the stack test which took place over a 1 hour period while 875 gals of transformer oil was processed. The polishing columns only generate emissions during regeneration cycles, so the average emissions test result (lbs/hr) was assumed to represent one regeneration cycle.

Volatile Organic Compound (VOC)	Emission Factor for the 2 Reactors per each emissions unit P001, P002, and P003 (lb/gal processed)	Emission Factor for each Polishing Column per each emissions unit P001, P002, P003, and P004 (lb/regeneration cycle)
Benzene	6.7429E-06	0.4830
Butane	1.1314E-04	0.2600
C4 as Butane	1.4971E-03	2.6200
Cyclohexane	4.4571E-05	0.5870
Ethylbenzene	2.1714E-06	0.2030
Hexane	1.2571E-05	0.1670



Volatile Organic Compound (VOC)	Emission Factor for the 2 Reactors per each emissions unit P001, P002, and P003 (lb/gal processed)	Emission Factor for each Polishing Column per each emissions unit P001, P002, P003, and P004 (lb/regeneration cycle)
C6 as Hexane	2.2514E-05	4.6700
Isooctane	6.4000E-06	0.4660
m-Xylene and p-Xylene	8.4571E-06	0.9480
o-Xylene	4.1143E-06	0.3830
Pentane	3.5429E-05	0.202
C5 as Pentane	3.7714E-05	0.235
Propane	4.6286E-04	0.452
C3 as Propane	0	0.0001
Toluene	1.8057E-05	1.2700
Total VOCs	0.002272	12.9300

Using the above emission factors, and the calculation method and maximum potential values detailed in section B.6.a)(1) above, the following information represents the maximum potential to emit for P001, P002, P003, and P004 combined:

Volatile Organic Compound (VOC)	Uncontrolled Emissions for emissions units P001, P002, P003, and P004 combined		Controlled with RTO 90% of the time Emissions for emissions units P001, P002, P003, and P004 combined	
	Lbs/hr	Tons/yr	Lbs/hr	Tons/yr
Total VOCs	55.3156	129.0156	9.4626	24.513

The 24.513 tons/yr value was rounded up to 25.00 tons/yr. There is approximately 0.20 tons/yr of additional total HAP emissions from the facilities 14-8,200 gallon and 9-100,000 gallon permit exempt tanks and the RTO natural gas combustion at 1.02 mmBTU/hr maximum firing rate. Therefore, the total facility-wide restricted potential to emit equals $25.00 + 0.20 = 35.20$, which is less emission limitation of 95.00 and less than the major source threshold of 100 tons/yr of total VOC.



The emission limitation was set equal to a normal synthetic minor emission limitation of 99.00 minus the additional HAP emissions of 0.20 and rounded down to the nearest divisible by 5 value to get the 95.00 limitation.

Note: This value is limited by the individual HAP emission limitation.

(4) Control Measure:

Reduce VOC and HAPs emissions using a regenerative thermal oxidizer (RTO) with a control efficiency of at least 90%

Applicable Compliance Method:

The permittee shall determine compliance with the control measures above in accordance with the testing requirements in term 6.b).

b) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

(1) The emission testing shall be conducted within 60 days of achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup and as required by the Canton City Health Department, Air Pollution Control Division.

(2) The emission testing shall be conducted to demonstrate compliance with the overall control efficiency limitation for VOCs and HAPs. The same regenerative thermal oxidizer (RTO) is used to control emissions from emissions units P001, P002, P003, and P004.

(3) The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

a. The mass emissions of spectated VOCs and VOC-HAPs shall be employed in the control efficiency determination; for VOC concentration in the inlet gas stream and exhaust vent:

Method 18* from 40 CFR Part 60, Appendix A

*Note: This is the test method used to develop the emission factors that were used in the permit application and in the development of the emission limitations in this permit.

b. For sampling and velocity traverses:

Method 1, from 40 CFR Part 60, Appendix A

c. For stack gas velocity and volumetric flow rate:

Method 2, from 40 CFR Part 60, Appendix A



- d. For gas analysis for carbon dioxide, oxygen, excess air, and dry molecular weight:

Method 3, from 40 CFR Part 60, Appendix A

- e. For moisture content in the stack gases:

Method 4, from 40 CFR Part 60, Appendix A

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- (4) The VOC emissions rate, used for control efficiency measurement, shall be based upon the average of three test runs. Each run shall have a minimum duration of one hour and minimum sample volume of 0.003 dry standard cubic meter. Gas stream samples shall be taken simultaneously at the inlet and the outlet of the RTO.
- (5) The test(s) shall be conducted while all the emissions units controlled by the common RTO (P001, P002, P003, and P004) are operating per 6.b)(5), and the measurement of the operating rates shall be made in a manner acceptable to the Canton City Health Department, Air Pollution Control Division.
- (6) The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the Canton City Health Department, Air Pollution Control Division. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.
- (7) The operating temperature of the RTO shall be continuously measured and recorded per term 4.c). The operating temperature measurements should be averaged every 15 minutes (15-minute blocks of time) during emission testing. A copy of the complete temperature monitoring data, and the 15-minute averages for the day that the emission test was conducted, shall be included with the test report required in term f)(1)h. below. The 15-minute average data will be used to establish the minimum operating temperature of the RTO referenced in term 4.b).
- (8) Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Canton City Health Department, Air Pollution Control Division. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Canton City Health Department, Air Pollution Control Division's refusal to accept the results of the emission test(s).



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- (9) Personnel from the Canton City Health Department, Air Pollution Control Division shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - (10) A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Canton City Health Department, Air Pollution Control Division.
7. The Ohio EPA has determined that this facility may be subject to U.S. EPA standards for control of hazardous air pollutants (HAPs) for Area Sources, the National Emission Standards for Hazardous Air Pollutants (NESHAP), found in the Code of Federal Regulations, Title 40 Part 63. At this time the Ohio EPA is not accepting the delegating authority to enforce NESHAP standards for area sources. The requirements of this NESHAP, that are applicable to the area source(s) (for HAPs) identified in this permit, shall be enforceable by U.S. EPA Region 5. The complete requirements of the applicable rule (including the Part 63 General Provisions) may be accessed via the Internet from the Electronic Code of Federal Regulations (e-CFR) website <http://www.ecfr.gov/> or by contacting the appropriate Ohio EPA District Office or Local Air Agency.



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C. Emissions Unit Terms and Conditions



1. P004, Non Treated Oil Polishing Columns

Operations, Property and/or Equipment Description:

Non-treated oil polishing column with maximum throughput of 900 gallons per hour that vents to a common regenerative thermal oxidizer that has a design control efficiency of 99%.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T) OAC rule 3745-31-05(A)(3) [Best Available Technology (BAT) for pollutants greater than 10 tons per year]	The emission limitations established pursuant to this rule are equivalent to the emission limitations established pursuant to OAC rule 3745-31-05(D) for volatile organic compound (VOC) emissions. See b)(2)a.
b.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving the regenerative thermal oxidizer (RTO) shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
c.	OAC rule 3745-17-11	The particulate emissions from the stack servicing this emissions unit shall not exceed 9.26 pounds per hour (lbs/hr). See b)(2)b.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	ORC 3704.03(F) OAC rule 3745-114	See B.2.a)(2).
e.	OAC rule 3745-31-05(D)	See B.2.a)(1).

(2) Additional Terms and Conditions

- a. The uncontrolled potential emissions of Particulate Emissions less than 10 microns in diameter (PM₁₀), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), and Carbon Monoxide (CO) for this emissions unit are negligible (less than 1 ton per year). Therefore, emission limits pursuant to Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) for these pollutants have not been established in this permit.
- b. The emissions unit's uncontrolled potential to emit for particulate matter (PE) emissions is less than the emission limitation listed in term b)(1)c. above. Therefore monitoring, recordkeeping, and reporting requirements are not necessary to ensure ongoing compliance with the emission limitation.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving the RTO. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emissions incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under term d)(1)d. above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the



emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (2) The permittee may, upon receipt of written approval from the Canton City Health Department, Air Pollution Control Division, modify the above-mentioned frequencies for performing the visible emissions checks if operating experience indicates that less frequent visible emissions checks would be sufficient to ensure compliance with the above-mentioned applicable requirements.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Canton City Health Department, Air Pollution Control Division by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
 - a. At a minimum, the permittee shall identify in the annual permit evaluation report the following information in accordance with the monitoring requirements for visible particulate emissions in term d)(1) above:
 - i. all days during which any visible particulate emissions were observed from the stack serving the RTO; and
 - ii. any corrective actions taken to minimize or eliminate the visible particulate emissions.

An exceedance of the visible particulate emissions limitations specified in OAC rule 3745-17-07(A)(1) that is caused by a malfunction is not a violation and does not need to be reported as a deviation if the permittee complies with the



requirements of OAC rule 3745-15-06 and none of the conditions listed in OAC rule 3745-15-06(C) are applicable to the source.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible particulate emissions from the stack serving the RTO shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method

If required, compliance with the visible particulate emission limitation above shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

The particulate emissions from the stack servicing this emissions unit shall not exceed 9.26 pounds per hour (lbs/hr).

Applicable Compliance Method:

The permittee shall comply with the more restrictive requirement of either Table 1 or Figure II of OAC rule 3745-17-11. Based on calculations provided by permittee in the permit application, Figure II does apply because the uncontrolled mass rate of emissions (UMRE) for all similar EUs was determined to be 0.013 pounds per hour (lbs/hr), which is less than the 10 lbs/hr requirement from OAC rule 3745-17-11(A)(2)(a)(ii). Therefore, the allowable particulate emission limitation was determined from Table 1, based on the maximum process weight rate (PWR) provided by the permittee and the following equation from Table 1:

$$E = 4.10 \times (P)^{0.67} = 4.10 \times (3.375)^{0.67} = 9.26 \text{ lbs PM/hr}$$

Where,

E = allowable emission rate in lbs PM/hr

P = PWR in tons/hr

$$PWR = 6750 \text{ lbs/hr} = 3.375 \text{ tons/hr}$$

UMRE = combined total PM (filterable + condensable) rate for P001, P002, P003, and P004 since they are units in close proximity per OAC rule 3745-17-11(A)(3) = 0.0032 + 0.0032 + 0.0032 + 0.0035 = 0.013 lbs PM/hr

$$0.013 \text{ lbs PM/hr} < 9.26 \text{ lbs PM/hr}$$



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g) Miscellaneous Requirements

- (1) None.



2. Emissions Unit Group -Oil Refining Plant: P001, P002, P003,

EU ID Operations, Property and/or Equipment Description

- P001 Plant #1: Transformer oil refining plant that consists of 2 hydrotreating reactors vented to 2 vent scrubbers with a design efficiency of 95% for SO2 control, and polishing column unit, with a maximum throughput of 527 gallons per hour. All units are vented to a common regenerative thermal oxidizer (RTO) that has a design control efficiency of 99%
- P002 Plant #2: Transformer oil refining plant that consists of 2 hydrotreating reactors vented to 2 vent scrubbers with a design efficiency of 95% for SO2 control, and polishing column unit, with a maximum throughput of 527 gallons per hour. All units are vented to a common regenerative thermal oxidizer (RTO) that has a design control efficiency of 99%
- P003 Plant #3: Transformer oil refining plant that consists of 2 hydrotreating reactors vented to 2 vent scrubbers with a design efficiency of 95% for SO2 control, and polishing column unit, with a maximum throughput of 527 gallons per hour. All units are vented to a common regenerative thermal oxidizer (RTO) that has a design control efficiency of 99%

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T) OAC rule 3745-31-05(A)(3)	The emission limitations established pursuant to this rule are equivalent to the emission limitations established pursuant to OAC rule 3745-31-05(D) for volatile organic compound (VOC) emissions.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	[Best Available Technology (BAT) for sources greater than 10 tons per year]	
b.	OAC rule 3745-31-05(A)(3), as effective 06/30/2008 [BAT for pollutants less than 10 tons per year]	Carbon Monoxide (CO) emissions shall not exceed 0.40 ton per month averaged over a rolling, 12-month period. See b)(2)a., c., and d.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 06/30/2008 [Less than 10 tons per year BAT exemption]	See b)(2)b.
d.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack serving the regenerative thermal oxidizer (RTO) shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
e.	OAC rule 3745-17-11	The particulate emissions from the stack servicing this emissions unit shall not exceed 6.47 pounds per hour (lbs/hr). See b)(2)e.
f.	ORC 3704.03(F) OAC rule 3745-114	See B.2.a)(2)
g.	OAC rule 3745-31-05(D)	See B.2.a)(1).

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of Ohio's State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of Ohio's SIP:
 - i. The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to the Carbon Monoxide (CO) emissions from this air contaminant source since the uncontrolled potential to emit for CO is less than 10 tons/yr.
- c. The uncontrolled potential emissions of Particulate Emissions less than 10 microns in diameter (PM₁₀), Sulfur Dioxide (SO₂), and Nitrogen Oxide (NO_x) for



this emissions unit are negligible (less than 1 ton per year). Therefore, emission limits pursuant to Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) for these pollutants have not been established in this permit.

- d. The emission limitation for Carbon Monoxide (CO) is based on the emissions unit's uncontrolled potential to emit. Therefore, monitoring, recordkeeping, and reporting requirements are not necessary to ensure ongoing compliance with the emission limitation.
- e. The emissions unit's uncontrolled potential to emit for particulate matter (PE) emissions is less than the emission limitation listed in b)(1)e. above. Therefore monitoring, recordkeeping, and reporting requirements are not necessary to ensure ongoing compliance with the emission limitation.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving the RTO. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emissions incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under term d)(1)d. above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

- (2) The permittee may, upon receipt of written approval from the Canton City Health Department, Air Pollution Control Division, modify the above-mentioned frequencies for performing the visible emissions checks if operating experience indicates that less



frequent visible emissions checks would be sufficient to ensure compliance with the above-mentioned applicable requirements.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Canton City Health Department, Air Pollution Control Division by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
 - a. At a minimum, the permittee shall identify in the annual permit evaluation report the following information in accordance with the monitoring requirements for visible particulate emissions in term d)(1) above:
 - i. all days during which any visible particulate emissions were observed from the stack serving the RTO; and
 - ii. any corrective actions taken to minimize or eliminate the visible particulate emissions.

An exceedance of the visible particulate emissions limitations specified in OAC rule 3745-17-07(A)(1) that is caused by a malfunction is not a violation and does not need to be reported as a deviation if the permittee complies with the requirements of OAC rule 3745-15-06 and none of the conditions listed in OAC rule 3745-15-06(C) are applicable to the source.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

CO emissions shall not exceed 0.40 ton per month as a rolling, 12-month summation of emissions

Applicable Compliance Method:

The tons/month CO emissions limit was established based on the company supplied design estimate as supplied in the Permit-to-Install and Operate (PTIO) application #A0051689, and summarized below.

Using the emission factors of 2.743E-05 lbs CO/gal for the 2 reactors and 2.15 lbs CO/regeneration for the polishing column, and the calculation method for uncontrolled emission and maximum potential values detailed in section B.6.a)(1) above, the total CO emissions are:

4.78 tons CO/year uncontrolled for P001, P002 and P003 each.

4.78 tons CO/year ÷ 12 months/year = 0.40 tons CO/month.

b. Emission Limitation:

Visible particulate emissions from the stack serving the RTO shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance with the visible particulate emissions limitation above shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1)

c. Emission Limitation:

The particulate emissions from the stack servicing this emissions unit shall not exceed 6.47 pounds per hour (lbs/hr).

Applicable Compliance Method:

The permittee shall comply with the more restrictive requirement of either Table 1 or Figure II of OAC rule 3745-17-11. Based on calculations provided by permittee in the permit application, Figure II does apply because the uncontrolled mass rate of emissions (UMRE) for all similar EUs was determined to be 0.013 pounds per hour (lbs/hr), which is less than the 10 lbs/hr requirement from OAC rule 3745-17-11(A)(2)(a)(ii). Therefore, the allowable particulate emission limitation was determined from Table 1, based on the maximum process weight rate (PWR) provided by the permittee and the following equation from Table 1:

$$E = 4.10 \times (P)^{0.67} = 4.10 \times (1.976)^{0.67} = 6.47 \text{ lbs PM/hr}$$



Where,

E = allowable emission rate in lbs PM/hr

P = PWR in tons/hr

PWR = 3953 lbs/hr for P001, P002, and P003 each = 1.976 tons/hr

UMRE = combined total PM (filterable + condensable) rate for P001, P002, P003, and P004 since they are units in close proximity per OAC rule 3745-17-11(A)(3) = 0.0032 + 0.0032 + 0.0032 + 0.0035 = 0.013 lbs PM/hr

0.013 lbs PM/hr < 6.47 lbs PM/hr

g) Miscellaneous Requirements

(1) None.