John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

4/3/2013

Certified Mail

Thomas Steib
DETREX CORPORATION, ASHTABULA PLANT
1100 STATE RD
ASHTABULA, OH 44004

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0204010192
Permit Number: P0084094
Permit Type: Renewal
County: Ashtabula

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

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/dapc/permitsurvey.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.

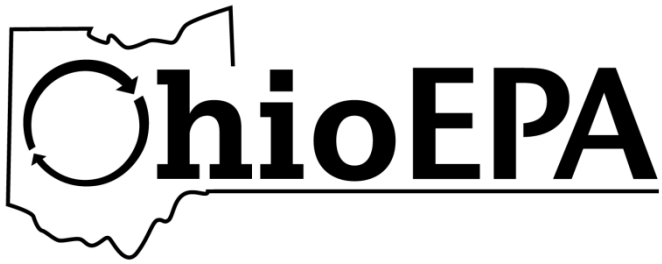
If you have any questions, please contact Ohio EPA DAPC, Northeast District Office at (330)425-9171or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-NEDO



FINAL

Division of Air Pollution Control
Permit-to-Install and Operate
for
DETREX CORPORATION, ASHTABULA PLANT

Facility ID:	0204010192
Permit Number:	P0084094
Permit Type:	Renewal
Issued:	4/3/2013
Effective:	4/3/2013
Expiration:	4/3/2023

Division of Air Pollution Control
Permit-to-Install and Operate
for
DETREX CORPORATION, ASHTABULA PLANT

Table of Contents

Authorization

Facility ID:	0204010192
Application Number(s):	A0014598, A0014599, A0046001, A0046002
Permit Number:	P0084094
Permit Description:	Renewal permit for (P101) Hydrochloric acid production and (J001) Hydrochloric acid bulk truck loading. Each unit exhausts to a physically inherent packed bed scrubber to control hydrochloric acid emissions.
Permit Type:	Renewal
Permit Fee:	$0.00
Issue Date:	4/3/2013
Effective Date:	4/3/2013
Expiration Date:	4/3/2023

Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

DETREX CORPORATION, ASHTABULA PLANT
1100 STATE RD
Ashtabula, OH 44004

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:

Ohio EPA DAPC, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)425-9171

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

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0084094
Permit Description: Renewal permit for (P101) Hydrochloric acid production and (J001) Hydrochloric acid bulk truck loading. Each unit exhausts to a physically inherent packed bed scrubber to control hydrochloric acid emissions.

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

Emissions Unit ID:	**J001**
Company Equipment ID:	HCl Loading
Superseded Permit Number:	02-21877
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P101**
Company Equipment ID:	HCl Acid Burner/Reactor
Superseded Permit Number:	02-21877
General Permit Category and Type:	Not Applicable

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. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement.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 takenby 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 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 Ohio EPA DAPC, Northeast District Office 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[1] 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 emissions 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.

[1] Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

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.

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) None.

   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) None.

C. Emissions Unit Terms and Conditions

1. J001, HCl Loading

Operations, Property and/or Equipment Description:

Hydrochloric acid (HCl) bulk truck loading with a physically inherent, packed bed scrubber to control HCl emissions.The maximum loading rate is 18,000 gal. HCl/day as noted in the application.

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.	OAC rule 3745-31-05(A)(3)	The hydrochloric acid (HCl) emissions shall not exceed 1.37lbs/day from the stack egress. The HCl emissions shall not exceed0.43 ton/year from the stack and fugitive egress points, combined. See c)(1) through c)(3).

(2) Additional Terms and Conditions

a. None.

c) Operational Restrictions

(1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable scrubber liquid flow rate, that shall be maintained in order to demonstrate compliance, shall not be less than 36.0 gallons per minute while the

emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

(2) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range for the pH of the scrubber liquid, that shall be maintained in order to demonstrate compliance, shall be at least a pH of 6 while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

(3) The permittee shall maintain the bulk HCl plant's tanks, delivery vessels, and transfer lines using the following operational practices:

a. Any loading rack that transfers HCl to a delivery vessel shall be equipped for top submerged filling or bottom filling for the transfer of HCl.

b. All HCl loading lines, unloading lines, and vapor lines shall be equipped with fittings which are vapor tight.

c. The delivery vessel hatches shall be closed at all times during the loading of the delivery vessel.

d. There shall be no leaks in the delivery vessel pressure/vacuum relief valves and hatch covers.

e. There shall be no leaks in the vapor and liquid lines during the transfer of HCl.

f. The permittee shall not allow HCl to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the scrubber liquid flow rate (in gallons per minute) and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the scrubber liquid's pH and flow rate on a once per shift 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.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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:

f. a description of the corrective action;

g. the date the corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the flow rate and pH readings immediately after the corrective action was implemented; and

k. 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.

These range(s) and/or limit(s) for the liquid flow rate and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA NortheastDistrict Office. The permittee may request revisions to the permitted range or limit for the liquid flow rate or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable HCl emission rate for this emissions unit. In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

(1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPANortheast District Office 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

(2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this emissions unit:

a. each period of time (start time and date, and end time and date)when the liquid flow rate or the liquid pH was/were outside of the appropriate range or exceeded the applicable limit contained in this permit;

b. each incident of deviation described in “a” (above) where a prompt investigation was not conducted;

c. each incident of deviation described in “a”where prompt corrective action, that would bring the liquid flow rateand/or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and

d. each incident of deviation described in “a” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

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. Emissions Limitation

The HClemission rate shall not exceed 1.37lbs/day from the stack egress.

Applicable Compliance Method:

Compliance may be based on the following equation:

$HCl_{LOAD}(DAY) = Q \times L_L \times (1 – CE)$.

Where:

$HCl_{LOAD}(DAY)$ = the estimated HCl emissions from loading operations exhausted to the stack egress, in lbs/day, which is estimated to be 0.1631lbs/day.

Q = the maximum loading rate, which is 18,000 gal HCl/dayas specified in the application for this PTIO.

L_L = the factor for uncontrolled loading loss emissions, which is 0.9060lbsHCl per 1000 gal HCl loaded as determined from Equation 1 found in of AP42, Chap. 5.2 (06/2008):

$L_L = 12.46 \times SPM/T$.

where:

S = a saturation factor, which is 0.6 for submerged loaded, dedicated normal service as found in Table 5.2-1, AP42 Chap. 5.2 (06/2008).

P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia), which is 1.7psia.

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole), which is 36.5 lbs/lb-mole.

T = temperature of bulk liquid loaded, °R (°F + 460), which is (52 °F + 460) or 512°R.

CE = the efficiency of the control device as a decimal fraction, which is 0.99 (99%) as specified in the application for this PTIO.

If required pursuant to OAC rule 3745-15-04(A), the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A-4, Methods 1 through 4, and Method 26 or equivalent, alternative method(s), as approved by Ohio EPA.

b. Emissions Limitation

The HClemission rate shall not exceed 0.43 ton/year from the stack and fugitive egress points, combined.

Applicable Compliance Method:

Compliance may be based on the following equation(s):

i. Determination of the maximum, controlled, annual emissions from the stack egress:

$HCl_{LOAD}(YR) = HCl_{LOAD}(DAY)$ x Days/year.

Where:

$HCl_{LOAD}(YR)$ = maximum emissions from the loading operation, in tons/year, which is estimated to be 59.52 lbsHCl/year.

$HCl_{LOAD}(DAY)$ = maximum, daily controlled pollutant emissions, in lbs/day, as specified in f)(1)a.; and

Days/year = the maximum annual operating days, which is 365days/year.

ii. Determination of the maximum, controlled, annual emissions from the fugitive egresses:

$HCl_{FUGITIVE}(YR) = \{\sum(F_{Ai} \text{ X } WF_{HCl} \text{ x } N_i)$kg HCl/hour}
xlbHCl/kg HCl x ton HCl/2000 lbsHClx 8760 hours/year.

Where:

$HCl_{FUGITIVE}(YR)$ = total fugitive HCl emissions from equipment leaks, which is estimated to be 354.368718 lbsHCl/year, as determined from the

average emission factor approach found in "Protocol for Equipment Leak Estimates" U.S. EPA, Office of Air Quality Planning and Standards, (EPA 453/R-95-017), November 1995, p. 2-11.

F_{Ai} = applicable average emission factor for the equipment type, in kg/hour/source, as found in Table 2-4 of "Protocol for Equipment Leak Estimates".

WF_{HCl}= average weight fraction of HCl in the exhaust streams;

N_i = number of pieces of equipment of the applicable equipment type in the stream.

iii. Determination of the maximum, controlled, annual emissions from the stack and fugitive egresses, combined:

Compliance may be based on the following equation:

$HCl_{TOTAL}(YR) = [HCl_{LOAD}(YR) + HCl_{FUGITIVE}(YR)]$ x ton HCl/2,000 lbsHCl.

Where:

$HCl_{TOTAL}(YR)$ = maximum emissions from stack and fugitive egresses, combined, in tons/year, which is estimated to be 0.207 ton HCl/year.

g) Miscellaneous Requirements

(1) The automatic, interlock controls the loading arm throughput associated with this emissions unit, J001. If the scrubber conditions(a scrubber liquid inflow of at least 36 gal/min and at least a pH of 6)are not met for 10 minutes after the start of city water flow, the whole system goes into shutdown mode so that this emissions unit cannot operate without the packed bedscrubber in operational mode. The scrubber interlock system is a physically inherent design limitation so that the potential to emit for this emissions unit is based on the maximum, controlled rate of HCl emissions.

(2) The Detrex Corporation, Ashtabula Plant is an area (minor) source of hazardous air pollutant (HAP) emissions. This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) Hydrochloric Acid Production in 40 CFR Part 63, Subpart NNNNN (40 CFR 63.8980 – 63.9075).

2. P101, HCl Acid Burner/Reactor

Operations, Property and/or Equipment Description:

Hydrochloric acid (HCl) production: an HCl reactor, and a product absorber, tails tower, and vacuum jet (steam venturi) with an interlocked, packed bed scrubber to control HCl and chlorine emissions from HCltransfer tostoragetanks.The maximum production rate is 600 gal. HCl/hour as noted in the application.

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.	OAC rule 3745-31-05(E)	The hydrochloric acid (HCl) emissions shall not exceed 0.44 lb/hour and 1.93 tons/year. See c)(1) and c)(2).

(2) Additional Terms and Conditions

a. None.

c) Operational Restrictions

(1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable scrubber liquid flow rate, that shall be maintained in order to demonstrate compliance, shall not be less than 36.0 gallons per minute while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

(2) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range for the pH of the scrubber liquid, that shall be maintained in order to demonstrate compliance, shall be at least a pH of 6 while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the scrubber liquid's pH and flow rate on a once per shift 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.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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:

f. a description of the corrective action;

g. the date the corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the flow rate and pH readings immediately after the corrective action was implemented; and

k. 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.

These range(s) and/or limit(s) for the liquid flow rate and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPANortheast District Office. The permittee may request revisions to the permitted range or limit for the liquid flow rate or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable HCl emission rate for this emissions unit. In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

(1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA NortheastDistrict Office 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.

(2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this emissions unit:

a. each period of time (start time and date, and end time and date)when the liquid flow rate or the liquid pH was/were outside of the appropriate range or exceeded the applicable limit contained in this permit;

b. each incident of deviation described in "a" (above) where a prompt investigation was not conducted;

c. each incident of deviation described in "a"where prompt corrective action, that would bring the pressure drop, liquid flow rate,and/or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and

d. each incident of deviation described in "a" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

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. Emissions Limitation

The HClemissionrate shall not exceed 0.44 lb/hour.

Applicable Compliance Method:

Compliance may be based on the following equation:

HCl(HR) = Q x D x ton HCl/2000 lbsHCl x EF x (1 – CE).

Where:

HCl (HR) = the estimated HCl emissions, in lbs/hour, which is estimated to be 0.0523lbs/hr.

Q = the maximum production rate, which is 600 gal HCl/hour as specified in the application for this PTIO.

D = the density of HCl product, which is 9.68 lbsHCl/gal HCl as specified in the application for this PTIO.

EF = the factor for uncontrolled emissions, which is 1.8 lbsHCl_{UNCTRL}/ton HClproduced as found in Table 8.6-1, AP-42 Chap. 8.6 (7, 1993).

CE = the efficiency of the process (vacuum jet) device as a decimal fraction, which is 0.99 (99%) as specified in the application for this PTIO. [Note: the efficiency may be better than declared since the vacuum jet exhausts gases to the cooling tower sump.]

If required pursuant to OAC rule 3745-15-04(A), the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A-4, Methods 1 through 4, and Method 26 or equivalent, alternative method(s), as approved by Ohio EPA.

b. Emissions Limitation

The HClemission rate shall not exceed 1.93 tons/year.

Applicable Compliance Method:

Compliance may be based on the following equation:

Determination of the maximum, controlled, annual emissions may be made by the following equation:

HCl(YR) = HCl(HR) x Hrs/year x ton HCl/2,000 lbsHCl.

where:

HCl(YR) = maximum emissions, in tons/year, which is estimated to be 0.229 ton HCl/year.

HCl(HR) = maximum, hourly controlled pollutant emissions, in lbs/hour, as specified in f)(1)a.; and

Hrs/year = the maximum annual operating hours, which is 8,760 hours/year.

g) Miscellaneous Requirements

(1) Any HCl gas that is not absorbed in the absorber is vented to the "tails tower" where most of it is returned back to the absorber. Any HCl gas that escapes the tails tower goes to the vacuum jet and eventually the cooling tower sump. There is no egress to the ambient air.

The automatic interlock controls the pumps for HCl product transfer to storage tanks associated with this emissions unit, P101. If the scrubber conditions(a scrubber liquid inflow of at least 36 gal/min and at least a pH of 6) are not met within 10 minutes after the start of city water flow, the whole system goes into shutdown mode so that this emissions unit cannot operate without the packed bedscrubber in operational mode. If liquid HCl input to the storage tanks has been locked out by the lockout device controlling the main scrubber, the burner is shut down and acid production will stop. During a production lockout there is no HCl gas going to the absorber, there is no acid input to the acid storage tanks, the acid pumps can't pump, etc., until the proper parameters have been met. The scrubber interlock system is a physically inherent design limitation so that the potential to emit for this emissions unit is based on the maximum, controlled rate of HCl emissions.

(2) The Detrex Corporation, Ashtabula Plant is an area (minor) source of hazardous air pollutant (HAP) emissions. This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) Hydrochloric Acid Production in 40 CFR Part 63, Subpart NNNNN (40 CFR 63.8980 – 63.9075).