



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
FRANKLIN COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 01-08668

DATE: 5/8/2003

GFS Chemicals Inc
Dave Gannon
851 McKinley Ave
Columbus, OH 43222

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging 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 Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA

CDO



**Permit To Install
Terms and Conditions**

**Issue Date: 5/8/2003
Effective Date: 5/8/2003**

FINAL PERMIT TO INSTALL 01-08668

Application Number: 01-08668
APS Premise Number: 0125040109
Permit Fee: **\$1400**
Name of Facility: GFS Chemicals Inc
Person to Contact: Dave Gannon
Address: 851 McKinley Ave
Columbus, OH 43222

Location of proposed air contaminant source(s) [emissions unit(s)]:
**851 McKinley Avenue
Columbus, Ohio**

Description of proposed emissions unit(s):
Chapter 31 mod. for 4 chemical reactors.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized

representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions

and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

6

GFS Chemicals Inc
PTI Application: 01-08668
Issued: 5/8/2003

Facility ID: 0125040109

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
Acid Gases	4.1
Chlorine	0.21
PM	16.9

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P005 - reactor 11 (Building 2) controlled by the North wet scrubber.	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 2.41 tons per year.
		Total acid gas emissions from emissions units P005, P020, and P022 shall not exceed 2.6 pounds per hour.
		Total acid gas emissions from emissions unit P005 shall not exceed 0.58 ton per year.
		See A.2.c below.
	OAC rule 3745-17-07(A)	Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).
	OAC rule 3745-17-11(B)(1)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
		PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a** The permittee shall vent emissions to and shall operate a scrubber with a control efficiency

of 98% by weight for acid gases while this emissions unit is operating.

2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.

2.c Acid gas emissions from emissions unit P005 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to

alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.

3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and

Emissions Unit ID: P005

operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.

4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.

5. The permit to install for this emissions unit (P005) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 2.6

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 92.8

MAGLC (ug/m³): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.
6. The permittee shall also maintain the following monthly records:
- a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most

Emissions Unit ID: P005

- recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
- e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate, chlorine and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation - total acid gas emissions from emissions units P005, P020 and P022 shall not exceed 2.6 pounds per hour; acid gas emissions from emissions unit P005 shall

not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P020 and P022 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. 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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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

Emissions Unit ID: P005

characterization of the emissions from the emissions unit and/or the performance of the control equipment.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P005 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P017 - Reactor 5 (Building 2) controlled by the South wet scrubber	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 2.41 tons per year. Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour. Total acid gas emissions from emissions unit P017 shall not exceed 0.58 ton per year. See A.2.c below. Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P017 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed,

Emissions Unit ID: P017

- calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.
3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
 4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
 5. The permit to install for this emissions unit (P017) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 3.4

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 121.3

MAGLC (ug/m3): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall also maintain the following monthly records:
 - a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These

reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour; Acid gas emissions from emissions unit P017 shall not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P018-P019 and P021 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to

Emissions Unit ID: P017

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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P017 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix

23

GFS C

PTI A

Issued: 5/8/2003

Emissions Unit ID: **P017**

A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P018 - Reactor 3 (Building 3) controlled by the South wet scrubber	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 2.41 tons per year. Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour. Total acid gas emissions from emissions unit P018 shall not exceed 0.58 ton per year. See A.2.c below. Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, recordkeeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P018 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations,

instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.

3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
5. The permit to install for this emissions unit (P018) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 3.4

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 121.3

MAGLC (ug/m3): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall also maintain the following monthly records:
 - a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate, NOx and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These

reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour; Acid gas emissions from emissions unit P018 shall not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P017, P019 and P021 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. 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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P018 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix

GFS Chemicals Inc
PTI Application: 01 09660
Issued

Facility ID: 0125040109

Emissions Unit ID: **P018**

A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P019 - Reactor 6 (Building 2) controlled by the South wet scrubber	OAC rule 3745-31-05(A)(3)	<p>Particulate emissions (PE) shall not exceed 2.41 tons per year.</p> <p>Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour.</p> <p>Total acid gas emissions from emissions unit P019 shall not exceed 0.58 ton per year.</p> <p>See A.2.c below.</p> <p>Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).</p>
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P019 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed,

Emissions Unit ID: P019

calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.

3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
5. The permit to install for this emissions unit (P019) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 3.4

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 121.3

MAGLC (ug/m3): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall also maintain the following monthly records:
 - a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These

reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour; Acid gas emissions from emissions unit P019 shall not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P017-P018 and P021 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to

Emissions Unit ID: P019

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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P019 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix

A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P020 - Reactor 15 (Building 2) controlled by the North wet scrubber	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 2.41 tons per year. Total acid gas emissions from emissions units P005, P020 and P022 shall not exceed 2.6 pounds per hour. Total acid gas emissions from emissions unit P020 shall not exceed 0.58 ton per year. See A.2.c below. Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P020 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations,

instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.

3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
5. The permit to install for this emissions unit (P020) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 2.6

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 92.8

MAGLC (ug/m3): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall also maintain the following monthly records:
 - a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These

reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P005, P020 and P022 shall not exceed 2.6 pounds per hour; Acid gas emissions from emissions unit P020 shall not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P005 and P022 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. 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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P020 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

Emissions Unit ID: **P020**

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P021 - Reactor 4 (Building 2) controlled by the South wet scrubber	OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) shall not exceed 2.41 tons per year. Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour. Total acid gas emissions from emissions unit P021 shall not exceed 0.58 ton per year. See A.2.c below. Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).
	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule
	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P021 shall not exceed 6.42 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record the static pressure drop across the scrubber once per shift while the source is in operation.
2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed,

Emissions Unit ID: P021

calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.

3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
5. The permit to install for this emissions unit (P021) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m³): 5.2

Maximum Hourly Emission Rate (lbs/hr): 3.4

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m³): 121.3

MAGLC (ug/m3): 123.8

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that

show the results of the application of the "Air Toxic Policy" for the change.

6. The permittee shall also maintain the following monthly records:
 - a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitation, as well as the corrective actions that were taken to achieve compliance. These

reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P017-P019 and P021 shall not exceed 3.4 pounds per hour; Acid gas emissions from emissions unit P021 shall not exceed 6.42 pounds per batch. The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P017-P018 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. The "Intent to

Emissions Unit ID: P021

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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P021 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- d. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- e. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	OAC rule 3745-17-07(A)
P022 - Reactor 13 (Building 2) controlled by the North wet scrubber	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11(B)(1)

Applicable Emissions
Limitations/Control Measures

Particulate emissions (PE) shall not exceed 2.41 tons per year.

Total acid gas emissions from emissions units P005, P020 and P022 shall not exceed 2.6 pounds per hour.

Total acid gas emissions from emissions unit P022 shall not exceed 0.58 ton per year.

Total chlorine emissions from emissions unit P022 shall not exceed 1.0 pound per hour.

Total chlorine emissions from emissions unit P022 shall not exceed 0.21 ton per year.

See A.2.c-d below.

Compliance with this rule also includes compliance with the requirements of OAC rules 745-17-11(B)(1) and 3745-17-07(A).

Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule

PE shall not exceed 0.551 pound per hour.

2. Additional Terms and Conditions

- 2.a The permittee shall vent emissions to and shall operate a scrubber with a control efficiency of 98% by weight for acid gases and chlorine while this emissions unit is operating.
- 2.b Compliance with the hourly allowable emissions limitations established through BAT is met through use of the scrubber and the associated monitoring, record keeping and reporting requirements identified below and verified through the required emissions testing. Therefore, it is not necessary to develop additional record keeping and/or reporting requirements to ensure compliance with these limits.
- 2.c Acid gas emissions from emissions unit P022 shall not exceed 6.42 pounds per batch.
- 2.d Chlorine emissions from emissions unit P022 shall not exceed 5.55 pounds per batch.

B. Operational Restrictions

1. The pressure drop across the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 0.5 and 6.0 inches of water at all times while this emissions unit is in operation.
2. The pH of the scrubbing liquid of the scrubber controlling emissions from this emissions unit shall be continuously maintained at a value between 7.5 and 13.5 at all times while this emissions unit is in operation and processing acids.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than 25 gallons per minute at all times while this emissions unit is in operation.
4. The maximum annual production rate for this emissions unit shall not exceed 182 acid gas producing batches per reactor.
5. The maximum annual production rate for this emissions unit shall not exceed 73 chlorine emissions producing batches per reactor.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the static pressure drop across the scrubber falls outside of the required operating parameters. In addition, the permittee shall record

the static pressure drop across the scrubber once per shift while the source is in operation.

2. The permittee shall properly install, operate and maintain equipment to continuously monitor the water flow rate while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the water flow rate falls outside of the required operating parameters. In addition, the permittee shall record the water flow rate once per shift while the source is in operation.
3. The permittee shall properly install, operate and maintain equipment to continuously monitor the pH while the emissions unit is in operation. The monitoring devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The monitoring equipment shall sound an audible alarm to alert the permittee in the event the pH falls outside of the required operating parameters. In addition, the permittee shall record the pH once per shift while the source is in operation.
4. The permittee shall maintain the following monthly records:
 - a. Date of alarm activation.
 - b. Specific parameter being monitored that triggered the alarm.
 - c. Length of time the alarm sounded.
 - d. Cause of alarm activation.
 - e. Corrective action taken to bring the affected parameter back into the appropriate operating range.
5. The permit to install for this emissions unit (P022) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Nitric Acid

TLV (mg/m3): 5.2

60

GFS Chemicals Inc
PTI Application: 01 09660
Issued

Facility ID: 0125040109

Emissions Unit ID: **P022**

Maximum Hourly Emission Rate (lbs/hr): 2.6

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 92.8

MAGLC (ug/m3): 123.8

Pollutant: Chlorine

TLV (mg/m3): 1.5

Maximum Hourly Emission Rate (lbs/hr): 1.0

Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 35.61

MAGLC (ug/m3): 35.7

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used, or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" 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(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required.

If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.
6. The permittee shall also maintain the following monthly records:
- a. number of each type of batch produced in this emissions unit;
 - b. identification of each batch produced;
 - c. uncontrolled emission rate of each pollutant, in pounds per batch, for each batch produced;
 - d. controlled emission rate of each pollutant, in pounds per batch(based upon the most recent emissions testing that demonstrated that the emissions unit was in compliance), for each batch produced; and
 - e. the total controlled emission rate of each pollutant, i.e., the sum of (d) for all batches produced.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify:
 - a. all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - i. The static pressure drop across the scrubber.
 - ii. The scrubber water flow rate.
 - iii. The pH of the scrubbing liquid.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when this emissions unit was in operation. These reports shall be submitted in accordance with the General Terms and Conditions of this permit.
3. The permittee shall submit annual reports which specify the total emissions of particulate, chlorine and each acid gas from this emissions unit for the previous calendar year in tons per year. These reports shall be submitted by January 31 of each year.
4. The permittee shall submit annual reports that identify any exceedances of the annual production rate limitations, as well as the corrective actions that were taken to achieve compliance. These reports shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation- Total acid gas emissions from emissions units P005, P020 and P022 shall not exceed 2.6 pounds per hour; Acid gas emissions from emissions unit P022 shall not exceed 6.42 pounds per batch: The control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for acid gases.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for acid gases.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60,

Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P005 and P020 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Central District Office. 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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- b. Emission Limitation- Total acid gas emissions from emissions unit P022 shall not exceed 0.58 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.a.

- c. Emission Limitation- total chlorine emissions from emissions units P005, P020 and P022 shall not exceed 1.0 pound per hour; chlorine emissions from emissions unit P022 shall not

Emissions Unit ID: P022

exceed 5.55 pounds per batch; the control efficiency of the scrubber controlling emissions from this emissions unit shall be 98% by weight for chlorine.

Applicable Compliance Method-

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

- i. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.
- ii. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for Chlorine.
- iii. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-4 and 26/26A of 40 CFR Part 60, Appendix A.

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

- iv. The test(s) shall be conducted while this emissions unit and emissions units P005 and P020 are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central District Office. This emissions test also shall be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of determining compliance with the 98% control requirement.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA, Central District Office. 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 Ohio EPA, Central District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Central District Office 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.

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 Ohio EPA, Central District Office 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 Ohio EPA, Central District Office.

- d. Emission Limitation- Total chlorine emissions from emissions unit P022 shall not exceed 0.21 ton per year.

Applicable Compliance Method- Compliance may be demonstrated through the records required pursuant to Section C.6 and the emissions testing required section E.1.c.

- e. Emission Limitation: PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- f. Emission Limitations: PE shall not exceed 2.41 tons per year.

Applicable Compliance Method: Compliance with the annual limitations shall be assumed as long as compliance with the hourly limitations is maintained (the annual limitations were calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

- g. Emission Limitations - Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method - If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

F. Miscellaneous Requirements

none