



North Carolina Department of Environment and Natural Resources
Division of Air Quality

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
B. Keith Overcash, P.E., Director

DRAFT

Mr. Richard Steinert
Plant Manager
National Starch and Chemical Company
485 Cedar Springs Road
Salisbury, North Carolina 28147

Dear Mr. Steinert:

SUBJECT: Air Quality Permit No. 05279T47
Facility ID: 8000055
National Starch and Chemical Company
Salisbury, Rowan County
Fee Class: Title V

In accordance with your completed Air Quality Permit Applications for a significant modification of the Title V permit received January 17, 2008, we are forwarding herewith Air Quality Permit No. 05279T47 to National Starch and Chemical Company – Cedar Springs Plant, Salisbury, Rowan County, North Carolina authorizing the construction and operation, of the emission source(s) and associated air pollution control device(s) specified herein.

Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 2Q .0503(8) have been listed for informational purposes as an "ATTACHMENT." Please note the requirements for the annual compliance certification are contained in General Condition P in Section 3 of Part I. **The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.**

As the designated responsible official it is your responsibility to review, understand, and abide by all of the terms and conditions of the attached permit. It is also your responsibility to ensure that any person who operates any emission source and associated air pollution control device subject to any term or condition of the attached permit reviews, understands, and abides by the condition(s) of the attached permit that are applicable to that particular emission source.

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to request a formal adjudicatory hearing within 30 days following receipt of this permit, identifying the specific issues to be contested. This hearing request must be in the form of a written petition, conforming to NCGS (North Carolina General Statutes) 150B-23, and filed with both the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27699-6714 and the Division of Air Quality, Permitting Section, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641. The form for requesting a formal

adjudicatory hearing may be obtained upon request from the Office of Administrative Hearings. Please note that this permit will be stayed in its entirety upon receipt of the request for a hearing. Unless a request for a hearing is made pursuant to NCGS 150B-23, this Air Quality Permit shall be final and binding 30 days after issuance.

You may request modification of your Air Quality Permit through informal means pursuant to NCGS 150B-22. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which the modification is sought. Please note that this Air Quality Permit will become final and binding regardless of a request for informal modification unless a request for a hearing is also made under NCGS 150B-23.

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to the emission source(s) and air pollution control device(s) described in this permit must be covered under an Air Quality Permit issued by the Division of Air Quality prior to construction unless the Permittee has fulfilled the requirements of GS 143-215-108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of GS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in GS 143-215.114A and 143-215.114B.

This Air Quality Permit shall be effective from **DRAFT** until November 30, 2008, is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein. Should you have any questions concerning this matter, please contact Ms. Jenny Kelvington at (919) 715-6254.

Sincerely,

Donald R. van der Vaart, Ph.D., P.E.
Chief

Attachments

cc: Gregg Worley, EPA Region 4 (Permit Only)
Mooresville Regional Office
Central Files

ATTACHMENT 1:

INSIGNIFICANT ACTIVITIES

| Source ID No. | Source Description |
|----------------------|---|
| ISTG-60 | storage tank with packed tower wet scrubber (30 gallons per minute caustic solution injection) (ID No. EP-ST60-SC) |
| IST-52 | sulfur trioxide storage tank with counter-current packed-tower acid scrubber (15 gallons per minute Injection rate or sulfuric acid) (ID No. EP-ST52-SO3-SC) |
| IB7 | natural gas-fired hot oil heater (4.2 million Btu heat input) built in 1978 |
| IB8 | natural gas-fired hot oil heater (5.76 million Btu heat input) built in 1975 |
| ITUM-1 | water-based materials tumble dryer |
| IES-WST | 5,300-gallon waste storage tank in pilot plant area |

1. Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.
2. When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 2D .1100 "Control of Toxic Air Pollutants" or 15A NCAC 2Q .0711 "Emission Rates Requiring a Permit".

ATTACHMENT 2:**Summary of Changes Made to the Previous Permit (ID No. 05379T46):**

| Page(s) | Section | Description of Change(s) |
|----------------|----------------------|--|
| Cover | - | Amend permit revision numbers and issuance/effective dates. |
| 8 and 9 | Sec. 1, Table Area 8 | Add thermal oxidizer (ID No. CD-TO1) venting to packed bed scrubber (ID No. CD-TO1S) as control devices for Area 8 sources. |
| 18 | Sec. 1, Table | Remove footnote 2 for control device (ID No. A3FDCD2) |
| 26 | Sec. 2.1. D | Add thermal oxidizer (ID No. CD-TO1) venting to packed bed scrubber (ID No. CD-TO1S) as control devices for Area 8 sources. |
| 40 | Sec. 2.2. A.5.c. | Add n-hexane to the table of TAPs not exceeding the TPER. |
| 41 | Sec. 2.2.B.1.a. | <ul style="list-style-type: none">- Change the “Hushpuppy” process limit from 550 to 1,000 batches per 12-month period- Require all Area 8 – PSA tanks and process equipment, with the exception of the heat-up of the reactor, the addition of monomer, catalyst, and solvent feed, and the removal of reactants, to be controlled by thermal oxidizer (ID No. CD-TO1).- Add requirement to maintain the minimum combustion bed temperature of thermal oxidizer (ID No. CD-TO1) at least 1,650°F at all times emissions from Area 8 operations are routed to the device for emission control. |
| 41 | Sec. 2.2.B.1.d | Require the operation of the thermal oxidizer (ID No. CD-TO1) to be monitored as provided in Section 2.1 F.5.c |
| 50 | Part II | Delete Part II. |



AIR QUALITY PERMIT

| Permit No. | Replaces Permit No. | Effective Date | Expiration Date |
|------------|---------------------|----------------|-------------------|
| 05279T47 | 05279T46 | DRAFT | November 30, 2008 |

Until such time as this permit expires or is modified or revoked, the below named Permittee is permitted to construct and operate the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations within this permit. This permit is issued under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and Title 15A North Carolina Administrative Codes (15A NCAC), Subchapters 2D and 2Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 2Q, the Permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete Air Quality Permit Application to the permitting authority and received an Air Quality Permit, except as provided in this permit.

Permittee: **National Starch and Chemical Company**
Cedar Springs Plant

Facility ID: **8000055**

Facility Site Location: **485 Cedar Springs Road**
City, County, State, Zip: **Salisbury, Rowan County, North Carolina 28147**

Mailing Address: **485 Cedar Springs Road**
City, State, Zip: **Salisbury, North Carolina 28147**

Application Number: **8000055.07A**
Complete Application Date: **March 26, 2008**
Primary SIC Code: **2869**

Division of Air Quality,
Regional Office Address: **Mooresville Regional Office**
610 East Center Street, Suite 301
Mooresville, North Carolina 28115

Permit issued this the **DRAFT, 2008**

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(Including specific requirements, testing, monitoring, recordkeeping, and reporting requirements)

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(Including specific requirements, testing, monitoring, recordkeeping, and reporting requirements)

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ATTACHMENT

List of Acronyms

PART II

This permit does not include a Part II.

PART I

The Division of Air Quality (DAQ), the United States Environmental Protection Agency (EPA), and citizens as defined under the Federal Clean Air Act have the authority to enforce the terms, conditions, and limitations contained in Part I of this permit unless otherwise specified.

Under Title 15A NCAC 2Q, the operation of emission source(s) and associated air pollution control device(s) and appurtenances listed in Part I of this permit is based on plans, specifications, operating parameters, and other information as submitted in the Air Quality Permit Application.

SECTION 1 - PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S) AND APPURTENANCES

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|---|--|---|
| Area I | | | |
| ES-A1-1 | Littleford Drying System No.1 | CD-A1-LDF-BF1, CD-A1-LDF-C1a, and CD-A1-LDF-C1b | internal fabric filter (43 square feet of filter area) venting to two parallel condensers (75 and 25 square feet of surface area, respectively) |
| ES-A1-2 | Littleford Drying System No.2 | CD-A1-LDF-BF2 and CD-A1-LDF-C2 | internal fabric filter (24 square feet of filter area) venting to a condenser (220 square feet of surface area) |
| ES-A1-3 | Littleford packout system | CD-A1-LDF-BF3 | internal fabric filter (33 square feet of filter area) |
| C-1 | centrifuge process | CD-A3-2-X2-C-1 | condenser |
| CP-12 | process vessel | N/A | N/A |
| R1 | chemical reactor vessel (5,500 gallons capacity) | R1C | condenser (125 square feet of surface area) |
| R2 | chemical reactor vessel (5,500 gallons capacity) | R2C | condenser (125 square feet of surface area) |
| R5 | chemical reactor vessel (2,000 gallons capacity) with process condenser R5C-1 | R5C-2 | condenser (104 square feet of surface area) |
| R6 | chemical reactor vessel (1,500 gallons capacity) with process condenser R6C-1 | R6C-2 | condenser (80 square feet of surface area) |
| 7R | mixing vessel (6,000 gallons) | N/A | N/A |
| 8R | reactor (4,000 gallons) with process condenser 8RC-1 | 8RC-2 | condenser (125 square feet of surface area) |
| B2 | natural gas/No. 2 fuel oil-fired boiler (12.5 million Btu heat input) built in 1970 | N/A | N/A |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|---|---|--|--|
| B3 | natural gas/No. 2 fuel oil-fired boiler (12.5 million Btu heat input) built in 1978 | N/A | N/A |
| B6 | natural gas/No. 2 fuel oil-fired boiler (12.5 million Btu heat input) built in 1978 | N/A | N/A |
| Area II | | | |
| MV1 | reactor vessel (4,000 gallons) with process condenser MV1C-1 | MV1C-2 <u>OR</u> V-VRU1 | condenser (150 square feet of surface area) <u>OR</u> refrigerated vapor recovery unit |
| MV2 | reactor vessel (4,000 gallons) with process condenser MV2C-1 | MV2C-2 <u>OR</u> V-VRU1 | condenser (250 square feet of surface area) <u>OR</u> refrigerated vapor recovery unit |
| MV3 | chemical reactor vessel (4,000 gallons) with reflux column/condenser MV3C-1 and/or process condenser MV3C-2 | CD-A2-2-MV3C-3 | condenser (250 square feet of surface area) |
| MV4 | chemical reactor vessel (4,000 gallons) with process condenser MV4C-1 | CD-A2-2-MV4C3 <u>OR</u> CD-A2-2-T20PS (optional) | condenser (80 square feet of surface area) <u>OR</u> packed-tower scrubber (7 gallons per minute liquid injection of caustic solution) |
| S4V, S7V, and S10V | Three lacquer tanks | V-VRU1 | refrigerated vapor recovery unit |
| S12V | DCE stripper | | |
| S9V | neutralizing stripper vent | | |
| S11V | neutralizing stripper vent | | |
| S25V | neutralizer vessel | | |
| T16V, ST46, ST47, ST49, and T30V | five storage tanks | | |
| DCE-1 | DCE distillation column S23 bottoms receiver (wet receiver tank) | | |
| S23 | distillation column with condenser/ overheads receiver (dry receiver tank) | | |
| S20V | batch distillation vessel | | |
| S12 | distillate tank for S20V | | |
| SAT-1-1, SAT-1-2, SAT-1-3, SAT-2-1, SAT-2-2, SAT-2-3, and D14 | Seven slow add tanks | V-VRU1 | refrigerated vapor recovery unit |
| T18 and T27 | Two storage tanks | | |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|--|--|--|
| S22V | water/DCE storage vessel | | |
| T13 | water/DCE flashing unit | | |
| RCV-1 | distillate receiver for reactors (ID Nos. MV1 and MV2 when used as stripping vessels) | V-VRU1 | refrigerated vapor recovery unit |
| T20V | sulfonated polystyrene (SPS) stripper vessel (4,000 gallons capacity) with process condenser T20VC-1 | T20VC-2 <u>OR</u> CD-A2-2-T20PS <u>OR</u> V-VRU1 | condenser (360 square feet of surface area) venting to atmosphere <u>OR</u> packed-tower scrubber (7 gallons per minute liquid injection of caustic solution) <u>OR</u> refrigerated vapor recovery unit |
| S-13-V | Chemical reactor with process condenser S-13-VC1 | S-13-VC2 | condenser (100 square feet of surface area) |
| S5V | sulfonation vessel venting to atmosphere <u>OR</u> reactor; 4,000 gallons with process condenser A2-1-1S5V-C | N/A <u>OR</u> S5VC-2 | N/A <u>OR</u> condenser (30 square feet of surface area) |
| S1R and S6V | Two sulfonation vessels | N/A | N/A |
| R12 | chemical reactor vessel (2,000 gallons capacity) with process condenser R12C-1 | R12C-2 | condenser (104 square feet of surface area) |
| T-13V | chemical reactor vessel (4,000 gallons capacity) with process condenser T13VC-1 | T13VC-2 | condenser (250 square feet of surface area) |
| Area III | | | |
| R04 | process tank | CD-A3-1-R04C | condenser (250 square feet of surface area) |
| R-02 | chemical reactor | R-02-C | condenser (282 square feet of surface area) |
| V09 | Process Tank | N/A | N/A |
| HOOD ¹ | process development laboratory exhaust hood | N/A | N/A |
| ES-EH2 ¹ | quality control laboratory exhaust hood | N/A | N/A |
| R20 | chemical batch reactor (300 gallon) with process condenser R20-X1 | CD-R20-X2 | vent condenser (cooling tower water, 100 square feet of surface area) |
| R21 | chemical batch reactor (300 gallon) with process condenser R21-X1 | CD-R21-X2 | vent condenser (cooling tower water, 100 square feet of surface area) |
| V70, V71, V72, V73 | Four slow blend tanks (200, 150, 100, and 50 gallons respectively) for reactor R21 | N/A | N/A |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------------|--|------------------------------|---|
| V40, V41, V42, V43 | Four slow blend tanks (200, 150, 100, and 50 gallons; respectively) for R20 | N/A | N/A |
| DR-1 | chemical reactor vessel (400 gallons capacity) | C-400 | condenser (41 square feet of surface area) |
| ES-V20 | ethyl acetate cleaning solution tank (6,000 gallons) | N/A | N/A |
| B4, B5 | two natural gas/No. 2 fuel oil-fired boilers (12.5 million Btu per hour maximum heat input each) built in 1978 | N/A | N/A |
| ES-A3-2-B7 NSPS Dc | natural gas/No. 2 fuel oil-fired boiler (16.3 million Btu per hour maximum heat input) | N/A | N/A |
| Area 4 - Cosmetics and Resyn | | | |
| A3FD | fluid bed dryer with product receiver cyclone | A3FD1 <u>OR</u> A3FD2 | rotoclone scrubber; 3.5 gallon per minute minimum water injection (6,500 cfm) <u>OR</u> fabric filter, 1,320 square feet of filter area |
| A4SD | spray dryer with two parallel product receiver cyclones | A4SD1 | vortex scrubber; 110 gallon per minute minimum water injection (20,000 cfm) |
| A4CAHS | crotonic acid pneumatic transfer system weigh bin to receiving hopper (work bin) | CDA4CAHS | fabric filter; 60 feet of filter area |
| CP1 | 12,000 gallon reactor with process condenser | CD-A3-2-X2-CP-1 | condenser |
| CP-4 | pearlization process | CD-A3-2-X2-CP-4 | condenser |
| CP-6 | pearlization process | CD-A3-2-X2-CP-6 | condenser |
| CP-2, CP-13 | two 4,000-gallon monomer slow add tanks | N/A | N/A |
| CP-3, CP-14 | two 750-gallon catalyst slow add tanks | N/A | N/A |
| CP-11 | process vessel | N/A | N/A |
| CP103, CP112, CP113 | three 10,000 gallon storage tanks (VOC) | N/A | N/A |
| CP104, CP105 | two 6,000 gallon storage tanks (VOC) | N/A | N/A |
| CP115, CP116 | two 1,377 gallon storage tanks (VOC) | N/A | N/A |
| CP101 | 15,000 gallon storage tank (HAPs) | N/A | N/A |
| CP108, CP109 | two 20,000 gallon storage tanks (VOC) | N/A | N/A |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|--|--|------------------------------|---|
| CP124 | 20,000 gallon storage tank (HAPs) | N/A | N/A |
| CP102 | 10,000 gallon storage tank (acrylic acid) | N/A | N/A |
| Area 4 - Ethyl Acetate Recovery System | | | |
| DEC1 | decanter; 250 gallons | N/A | N/A |
| DEC2 | decanter; 125 gallons | N/A | N/A |
| V15 | rich phase tank; 1,200 gallons | N/A | N/A |
| S01 | ethyl acetate azeotrope 200 gallon still with reflux condenser (overheads to DEC-2, bottoms to CP-107) | CDS01 | condenser; 100 square feet of surface area |
| CP107 | 10,000 gallon reclaim tank (ethyl acetate) | N/A | N/A |
| CP106 | 30,000 gallon reclaim tank (ethyl acetate) | N/A | N/A |
| V18 | water rich phase tank; 1,200 gallons | N/A | N/A |
| S02 | wastewater still with reflux condenser (overheads to DEC-2, bottoms to wastewater treatment plant) | CDS02 | condenser; 75 square feet of surface area |
| Area 4 – Isopropyl Acetate/ Ethanol Recovery System | | | |
| CP-300SC1 | isopropyl acetate/ethanol stripping column with reflux condenser and tank | CD-A3-2-X3-DC51 | vent condenser |
| CP-300DC2 | ethanol/water distillation column/reflux condenser and tank | CD-A3-2-X3-DC53 | vent condenser |
| CP-300EC3 | isopropyl acetate/ethanol liquid extraction column with associated phase tanks | N/A | N/A |
| Area 8 – PSA Process | | | |
| CP123 | 20,000 gallon 2-ethylhexyl acrylate storage tank | CD-TO1 | regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ST31 | 10,000 gallon vinyl acetate storage tank | CD-TO1S | |
| HP107 | isopropanol storage tank | | |
| HP105 | xylene storage tank | | |
| HP101 | 10,000 gallon butyl acrylate storage tank | | |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|---|---------------------------------|--|
| HP102 | 10,000 gallon ethyl acrylate storage tank | | |
| HP103 | 10,000 gallon toluene storage tank | | |
| ST38 | 10,000 gallon heptane storage tank | | |
| HP108 | 10,000 gallon methyl acrylate storage tank | | |
| HP200, HP201 | two 10,000 gallon bulk process tanks | | |
| V800 | catalyst shot pot | | |
| V801 | 2,500 gallon tackifier tank | | |
| V802, V803 | two crosslinker tanks; 500 gallons each | | |
| V811, V821 | two monomer slow add tanks; 400 gallons each | | |
| V812, V822 | two solvent slow add tanks; 2,000 gallons each | | |
| V813, V823 | two catalyst slow add tanks; 1,400 gallons each | | |
| V814 | 5,200 gallon blend tank | CDV814 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| V815 | 2,300 gallon blend tank | CDV815 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| V824 | 9,000 gallon blend tank | CDV824 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| V825 | 9,000 gallon blend tank | CDV825 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|---|---|---|
| R81 | 2,000 gallon reactor with process condenser R81X1 | CDR81X2 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| | heat-up of the reactor, the addition of monomer, catalyst, and solvent feed, and the removal of reactants | N/A | N/A |
| R82 | 6,000 gallon reactor with process condenser R82X1 | CDR82X2 CD-TO1 CD-TO1S | condenser venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| | heat-up of the reactor, the addition of monomer, catalyst, and solvent feed, and the removal of reactants | N/A | N/A |
| EEM Organics Plant 1 | | | |
| 50GL | 50 gallon glass-lined reactor with process condenser (PP-50GLC1) | CD-PP-50GLC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (3.9 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| PP400SS ¹ | old pilot plant reactor | N/A | N/A |
| PP275MT ¹ | old pilot plant reactor | N/A | N/A |
| LUWA | wiped film evaporator | LUWAC | condenser (5.0 square feet of surface area) with cold trap (0.2 square feet of area) |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|--|---|---|
| 60SS | 60 gallon stainless steel reactor with process condenser (PP-60SSC1) | CD-PP-60SSC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (4.7 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| 250SS | 250 gallon stainless steel reactor with process condenser (250SSC1) | CD-250SSC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (23 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| 300GL | 300 gallon glass-lined reactor with process condenser (300GLC1) | CD-300GLC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (12.8 square feet of surface area) venting to Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|---|---|--|
| 500SS | 500 gallon stainless steel reactor with process condenser (500SSC1) | CD-500SSC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (23 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| 1000SS | 1,000 gallon stainless steel reactor with process condenser (1000SSC1) | CD-1000SSC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (39.1 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| 2000SS | 2,000 gallon stainless steel reactor with process condenser (PP-2000SSC1) | CD-PP-2000SSC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (39.5 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|--|--|--|
| ES-20HA | one Hastalloy reactor vessel (20 gallon capacity) with process condenser (20HAC1) | CD-20HAC2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (7.8 square feet of surface area) venting to: Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ES-2500HAS | one Hastalloy reactor vessel (2,500 gallon capacity) with process condenser (20HAC1) | CD-2500HAS2 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | condenser (59.4 square feet of surface area), venting to: Nash vacuum pump after condenser (30 square feet of surface area), or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection), venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input, venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ESWFE | wiped film evaporator with internal process condenser WFEC1 and vacuum pump VP3 [Note: Only emissions associated with cleaning the evaporator require control as these contain methanol and toluene.] | CD-VP3C1 CD-VP1C1 (optional) CD-VP2C2 (optional) CD-PPS-1 CD-TO1 CD-TO1S | cold trap (0.33 square feet of surface area) venting to Nash vacuum pump after condenser (30 square feet of surface area) or liquid ring vacuum pump after condenser (30 square feet of surface area) and/or packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection), venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input, venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|--|---|---|
| 20GLSA | glass-lined slow add tank (20 gallons capacity) | CD-PPS-1 | packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection), venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input, venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| 20SSSA | stainless steel slow add tank (20 gallons capacity) | CD-TO1 | |
| ES-300SSSA | stainless steel slow-add tank (300 gallon capacity) | CD-TO1S | |
| 300SSMIX | stainless steel mix tank (300 gallons capacity) | | |
| 100SSSA | stainless steel slow add tank (100 gallons capacity) | | |
| 200SSSA | stainless steel slow add tank (200 gallons capacity) | | |
| 500SSSA | stainless steel slow add tank (500 gallons capacity) | | |
| ES-TD300 | pan-dryer (300 liters capacity) | CD-TD300C1 CD-TD100C2 CD-PPS-1 CD-TO1 CD-TO1S | condenser (water-cooled with 43 square feet of surface area) venting to: condenser (propylene glycol/water mixture-cooled with 5.8 square feet of surface area) venting to: packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ES-TD17/25 | pan-dryer (1,700 liters capacity) | CD-TD17/25C1 CD-PPS-1 CD-TO1 CD-TO1S | condenser (propylene glycol/water mixture-cooled with 59.4 square feet of surface area) venting to: packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ES-PP-Mill | Pilot Plant Milling System | CD-PP-Mill3 CD-PP-Mill1 | cyclone (5.1 inches body diameter) venting to: fabric filter (cartridge-type, 100 square feet of filter area) |
| ES-PP-FDCS | fugitive dust collection system for milling and air classification systems | CD-PP-FCDS1 CD-PP-FCDS2 | cartridge-type fabric filter (2,100 square feet of filter area) venting to fabric filter (HEPA filter, 1350 square feet of surface area) |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|--|--|--|
| EDS-BDS | One batch distillation system (35-50 gallon per hour) with one dirty solvent tank (500 gallon capacity) and one clean solvent tank (500 gallon capacity) with process condenser BDS1 | CD-BDS2 CD-PPS-1 CD-TO1 CD-TO1S | condenser (4.2 square feet of surface area) venting to: packed-tower wet scrubber system (8.5 gallons per minute at 30 psi phosphoric acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| ES-PP-Mill2 | Milling system consisting of one mill loading system, one milling unit, and one product collector (cyclone) | CD-PP-Mill2 | fabric filter (2,496 square feet of surface area) |
| PILOT | pilot plant mobile arm fugitive dust collection system for reactor loading and dryer unloading | CD-PP-Dust1 | fabric filter (480 square feet of filter area) in series with HEPA filter (1,350 square feet of filter area) |
| EEM Organics Plant 2 | | | |
| T610 | toluene storage tank; 9,000 gallons | N/A | N/A |
| T620 | methyl tertbutyl ether storage tank; 9,000 gallons | N/A | N/A |
| T630 | methylene chloride storage tank with nitrogen suppression system for filling operations; 9,000 gallons | N/A | N/A |
| T650 | heptane storage tank; 9,000 gallons | N/A | N/A |
| T660 | heptane/methyl tertbutyl ether storage tank; 9,000 gallons | N/A | N/A |
| T750 | slow add tank; 200 gallon | N/A | N/A |
| T760 | slow add tank; 300 gallons | N/A | N/A |
| R730 | strip vessel; 500 gallon with process condenser (C730)/500 gallon receiver (T730), and in line molecular sieve | C731 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|---|--|---|
| R710 | reactor; 500 gallons with process condenser (C710)/150 gallon receiver (T710) and in-line molecular sieve | C711 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| R720 | wash tank; 1,000 gallons with process condenser (C720) | C721 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| T850 | slow add tank; 300 gallons | CD-EM2S CD-TO1 CD-TO1S | packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| T860 | slow add tank; 500 gallons with process condenser (C861, 227 sq ft) | C862 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|---|--------------------------------------|---|
| R810 | reactor; 1,000 gallons with process condenser (C811) | C812 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| R830 | strip vessel; 1,000 gallon with process condenser (C831, 227 sq ft) | C832 CD-EM2S CD-TO1 CD-TO1S | condenser; 23 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| R820 | wash tank; 2,500 gallons | CD-EM2S CD-TO1 CD-TO1S | packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| T950 | slow add tank; 35 gallons | CD-EM2S CD-TO1 CD-TO1S | packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|--|---|--|---|
| R910 | reactor; 60 gallons with process condenser (C910, 5.8 sq ft) | C911 CD-EM2S CD-TO1 CD-TO1S | condenser; 30 square feet of surface area venting to packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| T920 | wash tank; 200 gallons | CD-EM2S CD-TO1 CD-TO1S | packed-tower wet scrubber system (5 gallons per minute minimum acid solution, caustic solution, or water injection) venting to regenerative thermal oxidizer; natural gas-fired, four million Btu per hour heat input venting to packed bed HCl scrubber; 75 gallons per minute caustic solution injection |
| E-350A NSPS Dc | natural gas-fired boiler (14.28 million Btu per hour maximum heat input) | N/A | N/A |
| Wastewater Treatment Plant | | | |
| 1 ¹ , 2 ¹ , and 3 ¹ | Three aerated effluent lagoons located in the facility wastewater treatment plant | N/A | N/A |
| CERCLA-1 ¹ | CERCLA cleanup project air stripper | CD-CERCLA-1a and CD-CERCLA-1b | catalytic oxidizer (900 cubic feet per minute gas flow rate) and one packed-column scrubber (22 gallons per minute of 50% NaOH scrubbing medium) |

¹ These emission sources are insignificant for Title V purposes; however, they are permitted pursuant to state-enforceable only requirements.

SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

2.1-Emission Source(s) and Control Devices(s) Specific Limitations and Conditions

The emission source(s) and associated air pollution control device(s) and appurtenances listed below are subject to the following specific terms, conditions, and limitations, including the testing, monitoring, recordkeeping, and reporting requirements as specified herein:

A. Area I

Littleford drying system No.1 (ID No. ES-A1-1) venting to fabric filter (ID No. CD-A1-LDF-BF1) then to parallel condensers (ID Nos. CD-A1-LDF-C1a, and CD-A1-LDF-C1b);

Littleford drying system No.2 (ID No. ES-A1-2) venting to fabric (ID No. CD-A1-LDF-BF2) then to condenser (ID No. CD-A1-LDF-C2);

Littleford packout system (ID No. ES-A1-3) with fabric filter (ID No. CD-A1-LDF-BF3); centrifuge (ID No. C-1) with condenser (ID No. CD-A3-2-X2-C-1);

process vessel (ID No. CP-12);
 reactor (ID No. R1) with condenser (ID No. R1C);
 reactor (ID No. R2) with condenser (ID No. R2C);
 reactor/process condenser R5C-1 (ID No. R5) with condenser (ID No. R5C-2);
 reactor/process condenser R6C-1 (ID No. R6) with condenser (ID No. R6C-2);
 mixing vessel (ID No. 7R); and
 reactor/process condenser 8RC-1 (ID No. 8R) with condenser (ID No. 8RC-2).

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|--|
| Particulate matter | Affected Sources: ID Nos. ES-A1-1, ES-A1-2, and ES-A1-3, only $E=4.10P^{0.67}$ Where; E = allowable emission rate in pounds per hour P = process weight in tons per hour | 15A NCAC 2D .0515 |
| Visible emissions | Affected Sources: ID Nos. ES-A1-1, ES-A1-2, and ES-A1-3, only 20 percent opacity | 15A NCAC 2D .0521 |
| Volatile organic compounds | Affected Sources: ID No. ES-A1-2, only PSD Avoidance Condition - VOC emissions shall be less than 40 tons per consecutive 12-month period | 15A NCAC 2Q .0317 |
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 <i>(Avoidance of 15A NCAC 2D .1111)</i> |
| Volatile organic compounds | Work Practice Standards – See Multiple Emission Sources Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Requirements for Odor Control – See Multiple Emissions Sources Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – See Multiple Emissions Sources Section 2.2 A.4. | 15A NCAC 2D .1100 |
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from the affected sources (**ID Nos. ES-A1-1, ES-A1-2, and ES-A1-3**) shall not exceed an allowable emission rate as calculated by the following equation:

$$E = 4.10 \times P^{0.67} \quad \text{Where:} \quad \begin{array}{l} E = \text{allowable emission rate in pounds per hour} \\ P = \text{process weight in tons per hour} \end{array}$$

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 2D .0501 (c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. Particulate matter emissions from the emissions sources listed above shall be controlled with fabric filters as delineated in the permit equipment list. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
- i. a monthly visual inspection of the system ductwork and material collection unit for leaks;
 - ii. an annual (for each 12 month period following the initial inspection) internal (if possible) inspection of the structural integrity of each baghouse including bag condition;
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork and bagfilters are not inspected and maintained.
- d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- i. the date and time of each recorded action;
 - ii. the results of each inspection;
 - iii. the results of any maintenance performed on the control devices; and
 - iv. any variance from manufacturer's recommendations, if any, and corrections made.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit the results of any maintenance performed on the control devices within 30 days of a written request by the DAQ.
- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the affected sources (**ID Nos. ES-A1-1, ES-A1-2, and ES-A1-3**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. If visible emissions from this source are observed to be above normal, the Permittee shall either:
- i. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) (Method 9) for 12 minutes is below the limit given in Section 2.1 A.2. a. above.
- If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- i. the date and time of each recorded action;
 - ii. the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. the results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

**3. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION
for 15A NCAC 2D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION**

- a. In order to avoid applicability of this regulation, the Littleford drying system No. 2 (**ID No. ES-A1-2**) shall discharge into the atmosphere less than 40 tons of VOCs per consecutive 12-month period.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- b. Calculations of VOC emissions per month shall be made at the end of each month. VOC emissions shall be determined by mass balance calculations comparing the masses entering and leaving the Littleford drying system No. 2 (**ID No. ES-A1-2**). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the amounts of VOC containing materials or the VOC emissions are not monitored and recorded.
- c. Calculations and the total amount of VOC emissions shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the VOC emissions exceed this limit.

Reporting [15A NCAC 2Q .0508(f)]

- d. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and for July 30 for the preceding six-month period between January and June. The report shall contain the following:
- i. The monthly VOC emissions for the previous 17 months. The emissions shall be calculated for each of the six 12-month periods over the previous 17 months,
 - ii. The total hours of operation and total monthly VOC emissions of the Littleford drying system No. 2 (**ID No.ES-A1-2**), and
 - iii. The control efficiency for VOC emissions of the Littleford drying system No. 2 (**ID No.ES-A1-2**).

B. Area II

reactor/process condenser MV1C-1 (ID No. MV1) with vent condenser (ID No. MV1C-2) or refrigerated recovery unit (ID No. V-VRU1);

reactor/process condenser MV2C-1 (ID No. MV2) with vent condenser (ID No. MV2C-2) or refrigerated recovery unit (ID No. V-VRU1);

reactor/reflux column and condenser MV3C-1 and/or process condenser MV3C-2 (ID No. MV-3) with vent condenser (ID No. CD-A2-2-MV3C-3);

reactor/process condenser MV4C-1 (ID No. MV4) with vent condenser (ID No. CD-A2-2-MV4C-3) or scrubber (ID No. CD-A2-2-T20PS);

Refrigerated Recovery Unit (ID No. V-VRU1) on:

three lacquer tanks (ID Nos. S4V, S7V, and S10V);

Dichloroethylene (DCE) stripper (ID No. S12V);

three process tanks (ID Nos. S9V, S11V, and S25V);

five storage tanks (ID Nos. T16V, ST46, ST47, ST49, and T30V);

DCE distillation column bottoms (dry) receiver (ID No. DCE-1);

DCE distillation column/condenser/overheads (dry) receiver (ID No. S23);

batch distillation vessel (ID No. S20V);

distillate tanks for S20V;

seven slow add tanks (ID Nos. SAT-1-1, SAT-1-2, SAT-1-3, SAT-2-1, SAT-2-2, SAT-2-3, and D14);

two storage tanks (ID Nos. T18 and T27);

water/DCE storage vessel (ID No. S22V);

water/DCE flashing unit (ID No. T13); and

distillate receivers for reactors MV1 and MV2 used as strippers (ID No. RCV-1);

reactor/process condenser T20VC-1 with vent condenser (ID No. T20VC-2) or scrubber (ID No. CD-A2-2-T20PS), or refrigerated recovery unit (ID No. V-VRU1);
 reactor/process condenser S-13-VC1 (ID No. S-13-V) with vent condenser (ID No. S-13-VC2);
 sulfonation vessel or reactor/process condenser (ID No. S5V) with vent condenser (ID No. S5VC-2);
 two sulfonation vessels (ID Nos. S1R and S6V);
 reactor/process condenser R12C-1 (ID No. R12) with vent condenser (ID No. R12VC-2); and
 reactor/process condenser T13VC-1 (ID No. T-13V) with vent condenser (ID No. R12VC-2).

Area III

process tank (ID No. R04);
 reactor (ID No. R-02) with vent condenser (ID No. R-02-C);
 Process Tank (ID No. V09);
 Process development laboratory exhaust hood (ID No. HOOD);
 Quality control laboratory exhaust hood (ID No. ES-EH2);
 reactor/process condenser R20-X1 (ID No. R20) with vent condenser (ID No. CD-R20-X2);
 reactor with process condenser R21-X1 (ID No. R21) with vent condenser (ID No. CD-R21-X2);
 Four slow blend tanks for reactor R21 (ID Nos. V70, V71, V72, and V73);
 Four slow blend tanks for R20 (ID Nos. V40, V41, V42, and V43);
 reactor (ID No. DR-1) with vent condenser (ID No. C-400); and
 ethyl acetate cleaning solution tank (ID No. ES-V20).

Wastewater Treatment Plant

Three aerated effluent lagoons (ID Nos. 1, 2, and 3).
 CERCLA air stripper (ID No. CERCLA-1) with catalytic oxidizer and packed-column scrubber (ID Nos. CD-CERCLA-1a and CD-CERCLA-1b).

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|--|
| Volatile organic compounds | Affected Source: Area II Reactor (ID No. R12) only PSD Avoidance Condition - VOC emissions shall be less than 40 tons per consecutive 12-month period | 15A NCAC 2Q .0317 <i>(Avoidance of 15A NCAC 2D .0531)</i> |
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 <i>(Avoidance of 15A NCAC 2D .1111)</i> |
| Volatile organic compounds | Work Practice Standards – See Multiple Emission Sources Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Requirements for Odor Control – See Multiple Emissions Sources Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – See Multiple Emissions Sources Section 2.2 A.4. | 15A NCAC 2D .1100 |
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |

1. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION

for 15A NCAC 2D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. In order to avoid applicability of this regulation, the reactor (ID No. R12) shall discharge into the atmosphere less than 40 tons of VOCs per consecutive 12-month period.
- b. The operation of the reactor (ID No. R12) shall not exceed 3,999 hours per any 12-month rolling period.

- c. VOC emissions must not exceed 20 pounds per hour.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- d. Calculations of VOC emissions per month shall be made at the end of each month. VOC emissions shall be determined by mass balance calculations comparing the masses entering and leaving the reactor (**ID No. R12**). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the amounts of VOC containing materials or the VOC emissions are not monitored and recorded.
- e. Calculations and the total amount of VOC emissions shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the VOC emissions exceed this limit.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and for July 30 for the preceding six-month period between January and June. The report shall contain the following:
 - i. The monthly VOC emissions for the previous 17 months. The emissions shall be calculated for each of the six 12-month periods over the previous 17 months,
 - ii. The actual hours of operation of the reactor (**ID No. R12**) and the annual VOC emissions based on the 20 pounds per hour maximum permitted emission rate.

C. Area 4 - Cosmetics and Resyn

fluid bed dryer with product receiver cyclone (ID No. A3FD) with rotoclone scrubber (ID No. A3FDCD1) or fabric filter (ID No. A3FDCD2);
 spray dryer with two parallel product receiver cyclones (ID No. A4SD) with vortex scrubber (ID No. A4SDCD1);
 crotonic acid pneumatic transfer system (ID No. A4CAHS) with fabric filter (ID No. CDA4CAHS);
 reactor (ID No. CP-1) with vent condenser (ID No. CD-A3-2-X2-CP-1);
 Pearlization reactor (ID No. CP-4) with vent condenser (ID No. CD-A3-2-X2-CP-4);
 Pearlization reactor (ID No. CP-6) with vent condenser (ID No. CD-A3-2-X2-CP-6);
 two monomer slow add tanks (ID Nos. CP-2 and CP-13);
 two catalyst slow add tanks (ID Nos. CP-3 and CP-14);
 process vessel (ID No. CP-11);
 eight storage tanks (ID Nos. CP103, CP112, CP113, CP104, CP105, CP115, and CP116);
 three storage tanks (ID Nos. CP101, CP108, CP109, and CP124); and
 acrylic acid storage tank (ID No. CP102).

Area 4 - Isopropyl Acetate/Ethanol Recovery System

isopropyl acetate/ethanol stripping column/reflux condenser/condensate tank (ID No. CP-300SC1) with vent condenser (ID No. CD-A3-2-X3-DC51);
 ethanol/water distillation column/reflux condenser/condensate tank (ID No. CP-300DC2) with vent condenser (ID No. CD-A3-2-X3-DC53); and
 isopropyl acetate/ethanol liquid extraction column and phase tanks (ID No. CP-300EC3).

Area 4 - Ethyl Acetate Recovery System

decanter (ID No. DEC1);
 decanter (ID No. DEC2);
 rich phase tank (ID No. V15);
 ethyl acetate azeotrope still/reflux condenser (ID No. S01) with vent condenser (ID No. CDS01);
 ethyl acetate reclaim test tank (ID No. CP107);
 ethyl acetate reclaim tank (ID No. CP106);
 water rich phase tank (ID No. V18); and
 wastewater still/reflux condenser (ID No. S02).

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|---------------------|------------------|-----------------------|
|---------------------|------------------|-----------------------|

following:

- i. a monthly visual inspection of the system ductwork and material collection unit for leaks;
- ii. an annual (for each 12 month period following the initial inspection) internal (if possible) inspection of the structural integrity of each baghouse (**ID No. A3FDCD2 and CDA4CAHS**) and scrubber body (**ID Nos. A3FDCD1 and A4SDCD1**) including bag or spray nozzle condition.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork, bagfilters and scrubbers are not inspected and maintained.

- d. The Permittee shall monitor the pressure drop and flow rate to the vortex scrubber (**ID No. A4SDCD1**) on the spray dryer daily and recorded in a logbook. The pressure drop across the scrubber shall be maintained between 8 and 20 inches of water and the minimum flow rate of water to the scrubber shall not be less than 110 gallons per minute. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not created and retained, or if the scrubber is not operated within the given acceptable ranges.
- e. The results of inspection, maintenance, and parametric monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
 - i. the date and time of each recorded action;
 - ii. the results of each inspection;
 - iii. the results of any maintenance performed on the control devices; and
 - iv. any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit the results of any maintenance performed on the control devices within 30 days of a written request by the DAQ.
- g. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the affected sources (**ID Nos. A3FD, A4SD, A4CA**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 C.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) (Method 9) for 12 minutes is below the limit given in Section 2.1 C.2.a. above.

If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
 - i. the date and time of each recorded action;
 - ii. the results of each observation and/or test noting those sources with emissions that were observed to be in

noncompliance along with any corrective actions taken to reduce visible emissions; and
iii. the results of any corrective actions performed.
The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

D. Area 8 - PSA Process

regenerative thermal oxidizer (ID No. CD-TO1) venting to halogen scrubber (ID No. CD-TO1S) on:

- 2-ethylhexyl acrylate storage tank (ID No. CP123)¹
- vinyl acetate storage tank (ID No. ST31)¹
- isopropanol storage tank (ID No. HP107)¹
- xylene storage tank (ID No. HP105)¹
- butyl acrylate storage tank (ID No. HP101)¹
- ethyl acrylate storage tank (ID No. HP102)¹
- toluene storage tank (ID No. HP103)¹
- heptane storage tank (ID No. ST38)¹
- xylene storage tank (ID No. ST20)¹
- methyl acrylate storage tank (ID No. HP108)¹
- two bulk process tanks (ID Nos. HP200 and HP201);
- catalyst shot pot (ID No. V800);
- tackifier tank (ID No. V801);
- two crosslinker tanks (ID Nos. V802 and V803);
- two monomer slow add tanks (ID Nos. V811 and V821);
- two solvent slow add tanks (ID Nos. V812 and V822);
- two catalyst slow add tanks (ID No. V813 and V823);
- blend tank (ID No. V814) with condenser (ID No. CDV814);
- blend tank (ID No. V815) with condenser (ID No. CDV815);
- blend tank (ID No. V824) with condenser (ID No. CDV824);
- blend tank (ID No. V825) with condenser (ID No. CDV825);
- reactor/process condenser R81X1 (ID No. R81) with vent condenser (ID No. CDR81X2); and
- reactor/process condenser R82X1 (ID No. R82) with vent condenser (ID No. CDR82X2).

1. Emissions from these storage tanks will be controlled by the regenerative thermal oxidizer (ID No. CD-TO1) venting to the halogen scrubber (ID No. CD-TO1S) **only** when material from these tanks is transferred to the PSA Process.

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|--|
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 <i>(Avoidance of 15A NCAC 2D .1111)</i> |
| Volatile organic compounds | Work Practice Standards – See Multiple Emission Sources Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Requirements for Odor Control – See Multiple Emissions Sources Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – See Multiple Emissions Sources Section 2.2 A.4. | 15A NCAC 2D .1100 |
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |
| Volatile organic compounds | Non-attainment area (NAA)-New Source Review (NSR) Avoidance Condition – See Multiple Emission Sources Section 2.2 B. | 15A NCAC 2Q .0317 <i>(Avoidance of 15A NCAC 2D .0531)</i> |

E. EEM Organics Plant 1

pilot plant milling system (ID No. ES-PP-Mill) with cyclone (ID No. CD-PP-Mill3) and fabric filter (ID No. CD-PP-Mill1);

Milling system (ID No. ES-PP-Mill2) consisting of one mill loading system, one milling unit, and one product collector (cyclone) venting to fabric filter (ID No. CD-PP-Mill2)

fugitive dust collection system for milling and air classification systems (ID No. ES-PP-FDCS) with cartridge filter (ID No. CD-PP-FCDS1) and HEPA filter (ID No. CD-PP-FCDS2); and

pilot plant mobile arm fugitive dust collection system for reactor loading and dryer unloading (ID No. Pilot) with fabric filter (ID No. CD-PP-Dust1)

packed-tower wet scrubber system (ID No. CD-PPS-1) venting to regenerative thermal oxidizer (ID No. CD-TO1) venting to halogen scrubber (ID No. CD-TO1S) on:

- reactor/process condenser (ID No. 50GL) with vent condenser (ID No. CD-PP-50GLC2);
- reactor/process condenser (ID No. 60SS) with vent condenser (ID No. CD-PP-60SSC2);
- reactor/process condenser (ID No. 250SS) with vent condenser (ID No. CD-250SSC2);
- reactor/process condenser (ID No. 300GL) with vent condenser (ID No. CD-300GLC2);
- reactor/process condenser (ID No. 500SS) with vent condenser (ID No. CD-CD-500SSC2);
- reactor/process condenser (ID No. 1000SS) with vent condenser (ID No. CD-1000SSC2);
- reactor/process condenser (ID No. 2000SS) with vent condenser (ID No. CD-PP-2000SSC2);
- reactor/process condenser (ID No. ES-20HA) with vent condenser (ID No. CD-20HAC2);
- reactor/process condenser (ID No. ES-2500HAS) with vent condenser (ID No. CD-2500HAS2);
- wiped film evaporator/process condenser/vacuum pump (ID No. ESWFE) with cold trap (ID No. CDVP3-C1);
- six slow add tanks (ID Nos. 20GLSA, 20SSSA, ES-300SSSA, 100SSSA, 200SSSA, 500SSSA);
- mix tank (ID No. 300SSMIX);
- pan dryer (ID No. ES-TD300) with two condensers in series (ID Nos. CD-TD300C1 and CD-TD100C2);
- pan dryer (ID No. ES-TD17/25) with condenser (ID No. CD-TD17/25C1); and
- batch distillation system with 500 gallon dirty solvent tank, 500 gallon clean solvent tank, and process condenser BDS1 (ID No. EDS-BDS) with vent condenser (ID No. CD-BDS2).

old pilot plant reactor (ID No. PP400SS);

old pilot plant reactor (ID No. PP275MT);

Wiped film evaporator (ID No. LUWA) with condenser (ID No. LUWAC); and

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|--|---|
| Particulate matter | Affected Sources: ID Nos. ES-PP-Mill1, ES-PP-Mill2, ES-PP-FCDS, and Pilot, only $E=4.10P^{0.67}$ Where; E = allowable emission rate in pounds per hour P = process weight in tons per hour | 15A NCAC 2D .0515 |
| Visible emissions | Affected Sources: ID Nos. ES-PP-Mill1, ES-PP-Mill2, ES-PP-FCDS, and Pilot, only 20 percent opacity | 15A NCAC 2D .0521 |
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 (Avoidance of 15A NCAC 2D .1111) |
| Volatile organic compounds | Work Practice Standards – See Multiple Emission Sources Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Requirements for Odor Control – See Multiple Emissions Sources Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – See Multiple Emissions Sources Section 2.2 A.4. | 15A NCAC 2D .1100 |

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------|---|-----------------------|
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from each affected source (**ID Nos. ES-PP-Mill1, ES-PP-Mill2, ES-PP-FCDS, and Pilot**) shall not exceed an allowable emission rate as calculated by the following equation:

$$E = 4.10 \times P^{0.67} \quad \text{Where:} \quad \begin{array}{l} E = \text{allowable emission rate in pounds per hour} \\ P = \text{process weight in tons per hour} \end{array}$$

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. Particulate matter emissions from the emissions sources listed above shall be controlled with fabric or cartridge filters as delineated in the permit equipment list. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer’s inspection and maintenance recommendations, or if there is no manufacturer’s inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
- i. a monthly visual inspection of the system ductwork and material collection unit for leaks;
 - ii. an annual (for each 12 month period following the initial inspection) internal (if possible) inspection of the structural integrity of each fabric/cartridge filter housing including bag/cartridge condition;
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork and fabric/cartridge filters are not inspected and maintained.
- d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- i. the date and time of each recorded action;
 - ii. the results of each inspection;
 - iii. the results of any maintenance performed on the control devices; and
 - iv. any variance from manufacturer’s recommendations, if any, and corrections made.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit the results of any maintenance performed on the control devices within 30 days of a written request by the DAQ.
- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from each affected source (**ID Nos. ES-PP-Mill1, ES-PP-Mill2, ES-PP-FCDS, and Pilot**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity. [15A NCAC 2D .0521(d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance, once a month the Permittee shall observe the emission points of this source for any visible emissions above normal. If visible emissions from this source are observed to be above normal, the Permittee shall either:
- take appropriate action to correct the above-normal emissions as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) (Method 9) for 12 minutes is below the limit given in Section 2.1 E.2.a. above.
- If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- the date and time of each recorded action;
 - the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - the results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521 if these records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

F. EEM Organics Plant 2

toluene storage tank (ID No. T610);

methyl tertbutyl ether storage tank (ID No. T620);

methylene chloride storage tank (ID No. T630);

heptane storage tank (ID No. T650);

heptane/methyl tertbutyl ether storage tank (ID No. T660);

two slow add tanks (ID Nos. T750 and T760);

packed-tower wet scrubber (ID No. CD-EM2S) venting to thermal oxidizer (ID No. CD-TO1) venting to halogen scrubber (ID No. CD-TO1S) on:

Train 7, including: reactor/process condenser (ID No. R710) with vent condenser (ID No. C711); strip vessel/process condenser (ID No. R730) with vent condenser (ID No. C731); and, wash tank/process condenser (ID No. R720) with vent condenser (ID No. C721).

Train 8, including: slow add tank (ID No. T850); slow add tank (ID No. T860) with vent condenser (ID No. C862); reactor/process condenser (ID No. R810) with vent condenser (ID No. C812); strip vessel/process condenser (ID No. R830) with vent condenser (ID No. C832); and, wash tank (ID No. R820).

Train 9, including: slow add tank (ID No. T950)

reactor/process condenser (ID No. R910) with vent condenser (ID No. C911); wash tank (ID No. T920).
one natural gas-fired boiler (ID No. E-350A; 14.28 million Btu per hour maximum heat input).

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|---|
| Particulate matter | Affected Sources: ID No. E-350A, only 0.328 pounds per million Btu heat input | 15A NCAC 2D .0503 |
| Sulfur dioxide | Affected Sources: ID No. E-350A, only 2.3 pounds per million Btu heat input. | 15A NCAC 2D .0516 |
| Visible emissions | Affected Sources: ID No. E-350A, only 20 percent opacity | 15A NCAC 2D .0521 |
| Sulfur dioxide | Affected Sources: ID No. E-350A, only Monthly recordkeeping requirement for natural gas firing. | 15A NCAC 2D .0524 (40 CFR 60, Subpart Dc) |
| Volatile organic compounds | Non-attainment area (NAA)-new source review (NSR) Avoidance Condition - VOC emissions shall be less than 40 tons per consecutive 12-month period. | 15A NCAC 2Q .0317 (Avoidance of 15A NCAC 2D .0531) |
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 (Avoidance of 15A NCAC 2D .1111) |
| Volatile organic compounds | Work Practice Standards – See Multiple Emission Sources Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Requirements for Odor Control – See Multiple Emissions Sources Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – See Multiple Emissions Sources Section 2.2 A.4. | 15A NCAC 2D .1100 |
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of natural gas, that are discharged from this source (**ID No. E-350A**) into the atmosphere shall not exceed 0.328 pounds per million Btu heat input.

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1 F.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from this source (**ID No. E-350A**) shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 F.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f) and 15A NCAC 2D .0501(c)(4)(A)]

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from this source.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from this source (**ID No. E-350A**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 F.3.a. (**ID No. E-350A**) above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas in this source.

4. 15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART Dc

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 2D .0524 "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart Dc, including Subpart A "General Provisions."

Emission/Sulfur Content Limitation [15A NCAC 2D .0524]

- b. There are no applicable emissions standards for natural gas firing in 40 CFR 60, Subpart Dc.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. In addition to any other recordkeeping required by 40 CFR 60.48c or recordkeeping requirements of the EPA, the Permittee shall record and maintain a record the amount of natural gas combusted during each calendar month. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if these records are not maintained. [§60.48c(g)]

5. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION

for 15A NCAC 2D. 0531: NON-ATTAINMENT AREA NEW SOURCE REVIEW

- a. The total emissions from EEM Organics Plant 2, as listed above, shall be less than less than 40 tons of VOCs per consecutive 12-month period to avoid applicability of the offset interpretive ruling pursuant to 15A NCAC 2D .0531.
- b. VOC emissions from the EEM Organics Plant 2 shall be controlled as described in the source description provided above. The thermal oxidizer (**ID No. CD-T01**) shall maintain a minimum combustion bed temperature of at least 1,650°F at all times emissions from the operation are routed to the device for emission control.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. The thermal oxidizer (**ID No. CD-T01**) shall be equipped with a continuous monitoring system, such as a thermocouple, to measure the combustion bed temperature (in or immediately after the bed). The device shall be installed in an accessible location and shall be maintained by the Permittee such that it is in proper working order at all times. The device shall be calibrated annually. The thermal oxidizer bed temperature shall be recorded either continuously, or on a daily basis if all temperature values recorded are above the minimum temperature. A logbook (electronic or hardcopy) shall be maintained that shows a daily record of:
 - i. Any hour when the average temperature fell below the minimum allowable temperature; and,

- ii. Any period during which the combustion bed temperature was not monitored; or,
- iii. A statement that the combustion bed temperature was continuously monitored and all 1-hour average temperatures were above the minimum.

The Permittee shall not take credit for any emissions control for any hour during which the average combustion bed temperature is less than 1,650°F, or during which the combustion bed temperature is not monitored and recorded.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. Each calendar month, the Permittee shall calculate the total VOC emissions from the EEM Organics Plant 2 for the previous calendar month, as follows:
 - i. Calculate emissions from bulk storage tanks (**ID Nos. T610, T620, T630, T650, and T660**) using approved estimation methodologies (e.g., the most recently available *TANKS* software).
 - ii. Estimate VOC emissions from Train No. 7 slow add tanks (**ID Nos. T750 and T760**) using approved estimation methodologies;
 - iii. Estimate VOC emissions from the controlled process units, including other Train No. 7 sources (**ID Nos. R710, R730, and R720**), Train No. 8 sources (**ID Nos. T850, R860, R810, R830, and R820**), and Train No. 9 sources (**ID Nos. T950, R910, and T920**) as follows:
 - (A) Estimate pre-control VOC emissions from using approved estimation methodologies;
 - (B) Estimate post-control VOC emissions by applying a 98% by weight overall control efficiency to the uncontrolled emission rate, as determined in (A) above, for all periods that the exhaust stream is routed to the thermal oxidizer (**ID No. CD-TO1**) and the combustion bed temperature is maintained, monitored, and recorded above the minimum combustion bed temperature in accordance with Section 2.1 F.5.b. and c. of this permit. The Permittee shall assume no control for all other periods, as provided in the following equation:

$$E_{Total} = E_{p1}(1 - 0.98) + E_{p2}$$

Where,

E_{Total} = Total VOC emissions from the process units during the previous calendar month;

E_{p1} = Pre-control VOC emissions from the process units when the combustion bed temperature was maintained, monitored, and recorded at equal to or greater than 1,650° F; and,

E_{p2} = Pre-control VOC emissions from the process units when the minimum combustion bed temperature was not maintained, monitored, and recorded, as described in Section 2.1 F.5.c.i. or ii. of this permit.

- iv. Estimate Total VOC emissions from the EEM Organics Plant 2 for the previous calendar month by summing the values estimated in i., ii., and iii.(B) above.

A record of the required monthly emission estimation shall be recorded in a logbook (written or electronic format).

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if the monthly VOC emissions are not estimated and recorded as required above.

- e. Each calendar month, the Permittee shall calculate the total VOC emissions from the EEM Organics Plant 2 for the previous consecutive 12-month period by summing the monthly VOC emissions, as determined in Section 2.1 F.5.d.iv. above, for the previous 12 calendar months. Records of the 12-month rolling calculations shall be made in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if records are not created and retained, or if the 12-month rolling emissions exceed the limit provided in Section 2.1 F.5.a. of this Permit.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report of the observations by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The summary report shall include the following:
 - i. Monthly VOC emissions from the EEM Organics Plant 2 for the previous 17 months as calculated in Section 2.1 F.5.d.iv. of this permit; and,
 - ii. 12-month rolling VOC emissions from the EEM Organics Plant 2 for each of the six 12-month periods over the previous 17 months as calculated in Section 2.1 F.5.e. of this permit.
 - iii. All instances of deviations from the requirements of this permit must be clearly identified.

G. Area I

Natural gas/No. 2 fuel oil-fired boiler (ID No. B2), and
 Natural gas/No. 2 fuel oil-fired boiler (ID No. B3).
 Natural gas/No. 2 fuel oil-fired boiler (ID No. B6),

Area III

Natural gas/No. 2 fuel oil-fired boiler (ID No. ES-A3-2-B7),
 Natural gas/No. 2 fuel oil-fired boiler (ID No. B5),
 Natural gas/No. 2 fuel oil-fired boiler (ID No. B4),

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|--------------------------|---|---|
| Particulate matter | 0.528 pounds per million Btu heat input | 15A NCAC 2D .0503 |
| Sulfur dioxide | 2.3 pounds per million Btu heat input | 15A NCAC 2D .0516 |
| Visible emissions | 20 percent opacity | 15A NCAC 2D .0521 |
| Sulfur dioxide | Affected Sources: ID No. ES-A3-2-B7, only Fuel oil firing 0.5 percent sulfur content fuel oil | 15A NCAC 2D .0524 (40 CFR 60, Subpart Dc) |
| Hazardous Air Pollutants | MACT Avoidance Conditions – See Multiple Emission Sources Section 2.2 A.1. | 15A NCAC 2Q .0317 (Avoidance of 15A NCAC 2D .1111) |

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of natural gas and No. 2 fuel oil that are discharged from these sources into the atmosphere shall not exceed 0.528 pounds per million Btu heat input.

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1 G.1.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas and No. 2 fuel oil in these sources.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these sources shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 G.2.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f) and 15A NCAC 2D .0501(c)(4)(A)]

- c. No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from natural gas and No. 2 fuel oil for these sources.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and

General Condition JJ. If the results of this test are above the limit given in Section 2.1 G.3.a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f)]

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas/No. 2 fuel oil.

4. 15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART Dc

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 2D .0524 "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart Dc, including Subpart A "General Provisions."

Emission Limitations [15A NCAC 2D .0524]

- b. The maximum sulfur content of any fuel oil received and burned in the affected boiler (**ID No. ES-A3-2-B7**) shall not exceed 0.5 percent by weight. [40 CFR 60.42c(d)]

Monitoring [15A NCAC 2Q .0508(f)]

- c. The Permittee shall retain a copy of the fuel supplier certification for any No. 2 fuel oil fired at the affected boiler (**ID No. ES-A3-2-B7**). The fuel supplier certification shall include the following information:
 - i. The name of the oil supplier;
 - ii. The sulfur content of the oil (in % by weight); and,
 - iii. A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the sulfur content of the oil exceeds the limit provided in Section 2.1 G.4. b. of this permit or if fuel supplier certifications are not retained as described above. [40 CFR 60.46c(d), 40 CFR 60.48c(f)]

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. Each calendar month, the Permittee shall record the total quantity of each fuel fired in the affected boiler (**ID No. ES-A3-2-B7**) during the previous calendar month. The Permittee shall be deemed in non-compliance with 15A NCAC 2D .0524 if it fails to create and retain the required record. [40 CFR 60.48c(g)(2)]

Reporting [15A NCAC 2Q .0508(f)]

- e. In addition to any other reporting required by 40 CFR 60.48c or notification requirements to the EPA, the Permittee is required to provide a semiannual summary report, acceptable to the Regional Air Quality Supervisor, of the sulfur content of the distillate fuel oil fired, by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The summary report shall include the following information:
 - i. Fuel supplier certification(s) for distillate fuel oil, as provided in Section 2.1 G.4.c. of this permit;
 - ii. A certified statement signed by the owner or operator that the records of fuel supplier certification(s) submitted represents all of the fuel fired at the affected boiler during the semiannual period; and,
 - iii. All instances of deviations from the requirements of this permit must be clearly identified.

2.2 - Multiple Emission Source(s) Specific Limitations and Conditions

A. Facility-Wide

The following table provides a summary of limits and standards for the emission source(s) describe above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|--|--|
| Hazardous Air Pollutants | MACT Avoidance – Section 2.2.A.1. Less than 10 tons per year of any individual HAP Less than 25 tons per year of total, combing HAP | 15A NCAC 2Q .0317 (<i>Avoidance of 15A NCAC 2D .1111</i>) |
| Volatile organic compounds | VOC work practice standards – Section 2.2 A.2. | 15A NCAC 2D .0958 |
| Odors | State-enforceable only Odorous emissions must be controlled – Section 2.2 A.3. | 15A NCAC 2D .1806 |
| Toxic air pollutants | State-enforceable only Control of Toxic Air pollutants – Section 2.2 A.4. | 15A NCAC 2D .1100 |
| Toxic air pollutants | State-enforceable only Requirement for Facility Wide Emission of a toxic air pollutant to remain below its respective Toxic Pollutant Exemption Rates – See Multiple Emissions Sources Section 2.2 A.5. | 15A NCAC 2Q .0711 |

1. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION

for 15A NCAC 2D .1111: LIMITATION TO AVOID BEING MAJOR FOR HAP

- a. In order to remain classified a minor source for hazardous air pollutants and avoid applicability of this regulation, facility emissions shall be less than:
 - i. 10 tons per year of each individual hazardous air pollutant, and
 - ii. 25 tons per year of all hazardous air pollutants combined.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- b. Individual HAP Emissions. Each month the Permittee shall calculate the facility-wide emission rates of each, individual HAP during the previous calendar month and during the previous consecutive 12-months. The emissions estimations shall include all HAP emission sources, including but not limited to combustion sources, storage tanks, pilot plant operations, fugitive emissions, and chemical manufacturing equipment. Acceptable emissions estimation methodologies include:
 - i. Engineering estimates for chemical operations, based on chemical properties, operating conditions, and production rates;
 - ii. US EPA-approved emission factors for fuel combustion (i.e., AP-42 emission factors); and,
 - iii. US EPA-approved TANKS software for chemical storage operations.

The results of the monthly and 12-month rolling emissions calculations shall be recorded in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the emissions calculations are not recorded as provided above, or if the 12-month rolling emissions of any HAP exceeds the limitation provided in a.i. above.
- c. Total, Combined HAP Emissions. Each month the Permittee shall calculate the facility-wide emission rate of total, combined HAP during the previous calendar month and during the previous consecutive 12-months. The results of the monthly and 12-month rolling emissions calculations shall be recorded in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the emissions calculations are not recorded as provided above, or if the 12-month rolling emissions of total, combined HAP exceeds the limitation provided in a.ii. above.
- d. The Permittee shall keep records of the MACT applicability determination, as provided above, on site at the source for a period of **five years** after the determination, or until the source becomes an affected source. The

determination must include the analysis demonstrating why the Permittee believes the source is unaffected pursuant to 40 CFR Part 63.10(b)(3). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the records are not maintained.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a semiannual summary report, acceptable to the Regional Air Quality Supervisor, of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and on or before July 30 of each calendar year for months between January and June. The report shall contain the following information:
 - i. For each consecutive 12-month period ending during the previous calendar half:
 - A. Provide the highest individual HAP emission rate (in tons/12-months) and indicate the identity of the highest emitting HAP; and,
 - B. Provide the total, combined HAP emission rate (in tons/12-months).
 - ii. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

- a. Pursuant to 15A NCAC 2D .0958, for all sources that use volatile organic compounds (VOC) as solvents, carriers, material processing media, or industrial chemical reactants, or in similar uses that mix, blend, or manufacture volatile organic compounds, or emit volatile organic compounds as a product of chemical reactions, and whose emissions of VOC are greater than 15 pounds per day; the Permittee shall:
 - i. store all material, including waste material, containing volatile organic compounds in tanks or in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use,
 - ii. clean up spills of volatile organic compounds as soon as possible following proper safety procedures,
 - iii. store wipe rags containing volatile organic compounds in closed containers,
 - iv. not clean sponges, fabric, wood, paper products, and other absorbent materials with volatile organic compounds,
 - v. transfer solvents containing volatile organic compounds used to clean supply lines and other coating equipment into closable containers and close such containers immediately after each use, or transfer such solvents to closed tanks, or to a treatment facility regulated under section 402 of the Clean Water Act,
 - vi. clean mixing, blending, and manufacturing vats and containers containing volatile organic compounds by adding cleaning solvent and close the vat or container before agitating the cleaning solvent. The spent cleaning solvent shall then be transferred into a closed container, a closed tank or a treatment facility regulated under section 402 of the Clean Water Act. [15A NCAC 2D .0958(c)]
- b. When cleaning parts with a solvent containing a volatile organic compound, the Permittee shall:
 - i. flush parts in the freeboard area,
 - ii. take precautions to reduce the pooling of solvent on and in the parts,
 - iii. tilt or rotate parts to drain solvent and allow a minimum of 15 seconds for drying or until all dripping has stopped, whichever is longer,
 - iv. not fill cleaning machines above the fill line,
 - v. not agitate solvent to the point of causing splashing. [15A NCAC 2D .0958(d)]

Monitoring [15A NCAC 2Q .0508(f)]

- c. To assure compliance with paragraphs (a) and (b) above, the Permittee shall, at a minimum, perform a visual inspection once per month of all operations and processes utilizing volatile organic compounds. The inspections shall be conducted during normal operations. If the required inspections are not conducted the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0958.

Recordkeeping [15A NCAC 2Q .0508(f)]

- d. The results of the inspections shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
 - i. the date and time of each inspection; and
 - ii. the results of each inspection noting whether or not noncompliant conditions were observed.

If the required records are not maintained the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0958.

Reporting [15A NCAC 2Q .0508(f)]

- e. The Permittee shall submit a summary report of the observations by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be

clearly identified.

State-Only Requirement

3. 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

State-Only Requirement

4. 15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANT EMISSIONS

a. Pursuant to 15A NCAC 2D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the following listed toxic air pollutants shall be limited to the following emission rates:

| Pollutant | Emission Source | Allowable Emission Rate |
|---------------------|--|---------------------------------|
| Ethylene dichloride | Facility-Wide | 40,141.5 lbs/yr |
| | Area II: S5V | 3,034 lbs/yr |
| | Area II: S1R | 1,933 lbs/yr |
| | Area II: S6V | 1,932 lbs/yr |
| Formaldehyde | Facility-Wide | 6.976 lbs/hr |
| | AREA I | 1.276 lb/hr for each manifold |
| Ammonia | Area II: V-VRU1 (associated with MV1, MV2, S4V, S7V, S10V, S12V, S9V, S11V, S25V, T16V, ST46V, ST47V, ST49V, T30V, DCE-1, S23, S20V, S12, SAT-1-1, SAT-1-2, SAT-1-3, SAT-2-1, SAT-2-2, SAT-2-3, D14, T18, T27, S22V, T13, RCV-1, and T20V) | 1.0 lbs/hr |
| | Area II: MV4, T20V | 0.1 lbs/hr |
| | Area III: V09 | 3.0 lbs/hr |
| | Area III: ES-EH2 | 15.0 lbs/hr |
| | Area III: Fugitive Sources | 3.0 lbs/hr |
| Benzene | Facility-Wide | 796.26 lbs/yr |
| Methylene chloride | EEM Plant 2 – T630 | 9.61 lbs/hr -and- 16,000 lbs/yr |
| | EEM Plants 1 and 2 – From control devices CD-EM2S, CD-TO1, and CD-TO1S | 9.00 lbs/hr -and- 16,000 lbs/yr |

- b. To assure compliance with the ethylene dichloride emissions limitations, the following conditions apply:
- The total monthly and annual ethylene dichloride emissions from each source shall be recorded in a toxic air pollutant emissions logbook.
 - Hours of operation per calendar year quarter of the CERCLA project air stripper (**ID No. CERCLA-1**) shall be recorded in the toxic air pollutant emissions logbook.
 - A mass balance of ethylene dichloride emissions from the facility per calendar year quarter shall be conducted using inventory purchase and storage records and the results recorded in the toxic air pollutant emission logbook.
- The toxic air pollutant emission logbook shall be made available for inspection by personnel of the DAQ upon request.
- c. To assure compliance with the formaldehyde emissions limitations, the Permittee shall record hourly formaldehyde emission rates from the AREA I. The hourly emissions from each source shall be recorded in a toxic air pollutant emissions logbook, which shall be made available for inspection by personnel of the DAQ upon request. These emissions can be recorded at the end of each workday.
- d. To assure compliance with the ammonia emissions limitations, the Permittee shall record hourly ammonia emission rates from each affected source listed in the table above. The hourly emissions from each source shall be recorded in a toxic air pollutant emissions logbook, which shall be made available for inspection by personnel of the DAQ upon request. These emissions can be recorded at the end of each workday.
- e. To assure compliance with the benzene emissions limitations, the Permittee shall record monthly and annual facility-wide benzene emission rates. The total shall be recorded in a toxic air pollutant emissions logbook, which shall be made available for inspection by personnel of the DAQ upon request.

- f. To assure compliance with the methylene chloride emissions limitations, the following conditions apply:
- i. The Permittee shall use a nitrogen suppression system during filling operations at the methylene chloride storage tank (**ID No. T630**) to reduce working losses from the tank.
 - ii. The methylene chloride throughput at the methylene chloride storage tank (**ID No. T630**) shall not exceed 126,900 gallons for any consecutive 12-month period. Each month, the Permittee shall record the total methylene chloride throughput at the tank during the previous calendar month (in gallons/month) and the previous consecutive 12-month period (in gallons/12-months).
 - iii. Emissions of methylene chloride from process units at the EEM Organics Plants 1 and 2 shall be controlled by a thermal oxidizer (**ID No. CD-TO1**). The thermal oxidizer shall maintain a minimum combustion bed temperature of at least 1,650 °F. The operation of the thermal oxidizer shall be monitored as provided in Section 2.1 F.5.c.
- g. Condenser/Coldtrap/Refrigerated Vapor Recovery Unit Requirements - TAP emissions shall be controlled as described in the permitted equipment list.
- i. Inspection and Maintenance Requirements - To comply with the provisions of this permit and ensure that emissions do not exceed the regulatory limits, the Permittee shall perform periodic inspections and maintenance as recommended by the equipment manufacturer. In addition, the Permittee shall perform an annual inspection of the condenser system, including the following:
 - (A) The Permittee shall inspect and maintain the structural integrity of the condenser, including inspection for leakage of coolant and, if the system is under positive gauge pressure, leakage of the contaminated gas stream. In order to indicate leakage of the coolant, the condensate shall be inspected for the presence of coolant;
 - (B) The Permittee shall conduct a bi-annual clean out of the condenser shell sides and tube sides; and
 - (C) The Permittee shall inspect and maintain the structural integrity of ductwork and piping leading to and coming from the condenser.
 - ii. Recordkeeping Requirements - The results of all inspections and any variance from manufacturer's recommendations or from those given in this permit (when applicable) shall be investigated with corrections made and dates of actions recorded in a logbook. Records of all maintenance and monitoring activities shall be recorded in the logbook. The logbook (in written or electronic form) shall be kept on-site and made available to DAQ personnel upon request.
 - iii. Monitoring Requirements - Each condenser shall be equipped with a device to continuously measure the exit gas temperature to ensure that it does not exceed the maximum temperature delineated in the following table. The device shall be installed in an accessible location and shall be maintained by the Permittee such that it is in proper working order at all times. The Permittee shall record the exit gas temperature when the equipment is operating in a log once per week. The log shall also indicate whether or not the equipment has operated during the week. These gauges shall be calibrated annually.

| Condenser ID | Maximum Outlet Temperature °F |
|---------------|-------------------------------|
| CD-A1-LDF-C1a | 122 |
| CD-A1-LDF-C1b | 122 |
| CD-A1-LDF-C2 | 122 |
| V-VRU1 | 86 |
| CD-A2-2-MV3C3 | 122 |
| CD-A2-2-MV4C3 | 122 |
| CD-A3-1-R04C | 122 |
| CD-500SSC2 | 122 |
| CD-1000SSC2 | 122 |
| CD-PD300C2 | 122 |
| CD-PP-50GLC2 | 122 |
| CD-PP-60SSC2 | 122 |
| CD-PP-250SSC2 | 122 |
| CD-PP-300GLC2 | 122 |

| Condenser ID | Maximum Outlet Temperature °F |
|-------------------|-------------------------------|
| CD-PP-2000SSC2 | 122 |
| CD-20HAC2 | 122 |
| CD-TD17/25C1 | 122 |
| CD-VP1C1 | 122 |
| CD-VP2C1 | 122 |
| LUWAC | 122 |
| CD-A3-2-X2-CP-1 | 122 |
| CD-A3-2-X2-CP-4 | 122 |
| CD-A3-2-X2-CP-6 | 122 |
| CD-A3-2-X2-C-1 | 122 |
| CD-A3-2-X3-DC5001 | 122 |
| CD-A3-2-X3-DC53 | 122 |

Reporting Requirements

- h. The Permittee shall submit a quarterly summary report of monitoring and recordkeeping activities postmarked on or before January 30 (for the preceding October through December), April 30 (for the preceding January through March), July 30 (for the preceding April through June), and October 30 (for the preceding July through September). The report shall include the following:
- i. The facility-wide ethylene dichloride emissions (in lbs/yr).
 - ii. The methylene chloride throughput at **ID No. T630** for each of the three consecutive 12-month periods ending during the previous calendar quarter (in gallons/12-months).
 - iii. Identification of any deviations with 15A NCAC 2D .1100, including but not limited to:
 - A. Any exceedance of any hourly or annual emission limitation,
 - B. Failure to operate the nitrogen suppression system at the methylene chloride tank during filling operations,
 - C. Failure to operate the thermal oxidizer to control methylene chloride emissions, and,
 - D. Failure to operate the Condenser/Coldtrap/Refrigerated Vapor Recovery Unit as provided above.
 - E. If there were no deviations during the 3-month reporting period, include a statement as such.

State-Only Requirement

5. **TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REPORTING REQUIREMENTS** -Pursuant to 15A NCAC 2Q .0711 "Emission Rates Requiring a Permit," for each of the below listed toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 2Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 2Q .0711.
- a. A permit to emit any of the below listed TAPs shall be required for this facility if actual emissions from all sources will become greater than the corresponding TPERs.
 - b. PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 2D.1100 "Control of Toxic Air Pollutants".
 - c. In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

| TPERs Limitations | | | | |
|-----------------------------|---------------------|----------------------------|----------------------------------|-------------------------|
| Pollutant (CAS Number) | Carcinogens (lb/yr) | Chronic Toxicants (lb/day) | Acute Systemic Toxicants (lb/hr) | Acute Irritants (lb/hr) |
| Maleic Anhydride (108-31-6) | | 0.25 | 0.025 | |
| Ethyl Acetate (141-78-6) | | | 36 | |
| n-Hexane (110-54-3) | | 23 | | |
| Sulfuric Acid (7664-93-9) | | 0.25 | 0.025 | |
| Toluene (108-88-3) | | 98 | | 14.4 |
| Xylene (1330-20-7) | | 57 | | 16.4 |

- B. Area 4 - Cosmetics and Resyn reactor (ID No. CP-1) with vent condenser (ID No. CD-A3-2-X2-CP-1);

Area 4 - Ethyl Acetate Recovery System

decanter (ID No. DEC1);
decanter (ID No. DEC2);
rich phase tank (ID No. V15);
ethyl acetate azeotrope still/reflux condenser (ID No. S01) with vent condenser (ID No. CDS01);
ethyl acetate reclaim test tank (ID No. CP107);
ethyl acetate reclaim tank (ID No. CP106);
water rich phase tank (ID No. V18); and
wastewater still/reflux condenser (ID No. S02).

Area 8 - PSA Process

regenerative thermal oxidizer (ID No. CD-TO1) venting to halogen scrubber (ID No. CD-TO1S) on:

2-ethylhexyl acrylate storage tank (ID No. CP123);
vinyl acetate storage tank (ID No. ST31);
isopropanol storage tank (ID No. HP107);
xylene storage tank (ID No. HP105);
butyl acrylate storage tank (ID No. HP101);
ethyl acrylate storage tank (ID No. HP102);
toluene storage tank (ID No. HP103);
heptane storage tank (ID No. ST38);
xylene storage tank (ID No. ST20);
methyl acrylate storage tank (ID No. HP108);
two bulk process tanks (ID Nos. HP200 and HP201);
catalyst shot pot (ID No. V800);
tackifier tank (ID No. V801);
two crosslinker tanks (ID Nos. V802 and V803);
two monomer slow add tanks (ID Nos. V811 and V821);
two solvent slow add tanks (ID Nos. V812 and V822);
two catalyst slow add tanks (ID No. V813 and V823);
blend tank (ID No. V814) with condenser (ID No. CDV814);
blend tank (ID No. V815) with condenser (ID No. CDV815);
blend tank (ID No. V824) with condenser (ID No. CDV824);
blend tank (ID No. V825) with condenser (ID No. CDV825);
reactor/process condenser R81X1 (ID No. R81) with vent condenser (ID No. CDR81X2); and
reactor/process condenser R82X1 (ID No. R82) with vent condenser (ID No. CDR82X2).

1. 15A NCAC 2Q. 0317: AVOIDANCE CONDITION

for 15A NCAC 2D. 0531: NON ATTAINMENT AREA NEW SOURCE REVIEW

- a. The total emissions from all sources listed above shall be less than less than 40 tons of VOCs per consecutive 12-month period to avoid applicability of the offset interpretive ruling pursuant to 15A NCAC 2D.0531. In order to insure compliance with this monthly rolling total emissions cap, the following operating and control parameters

apply:

Area 4

- i. "Zephyr" processing shall not exceed 250 batches per consecutive 12-month period.
- ii. Reactor (**ID No. CP1**) shall be controlled with vent condenser (**ID No. CD-A3-2-X2-CP-1**) and the condenser shall maintain a vent discharge temperature of 15° C or less.
- iii. The ethyl acetate azeotrope still (**ID No. S01**) shall be controlled with vent condenser (**ID No. CDS01**) and the condenser shall maintain a vent discharge temperature of 15° C or less.
- iv. The wastewater still (**ID No. S02**) shall be controlled with vent condenser (**ID No. CDS02**) and the condenser shall maintain a vent discharge temperature of 15° C or less.

Area 8

- v. "Hushpuppy" processing shall not exceed 1,000 batches per consecutive 12-month period.
- vi. Blend tank (**ID No. V814**) shall be controlled with vent condenser (**ID No. CDV814**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- vii. Blend tank (**ID No. V815**) shall be controlled with vent condenser (**ID No. CDV815**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- viii. Blend tank (**ID No. V824**) shall be controlled with vent condenser (**ID No. CDV824**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- ix. Blend tank (**ID No. V825**) shall be controlled with vent condenser (**ID No. CDV825**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- x. Reactor (**ID No. R81**), with the exception of the heat-up of the reactor, the addition of monomer, catalyst, and solvent feed, and the removal of reactants, shall be controlled with vent condenser (**ID No. CDR81X2**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- xi. Reactor (**ID No. R82**), with the exception of the heat-up of the reactor, the addition of monomer, catalyst, and solvent feed, and the removal of reactants, shall be controlled with vent condenser (**ID No. CDR82X2**) venting to regenerative thermal oxidizer (**ID No. CD-TO1**). The condenser shall maintain a vent discharge temperature of 15° C or less.
- xii. Storage tanks (**ID Nos. CP123, HP101, HP102, HP103, HP105, HP107, HP108, ST20, ST31, and ST38**); bulk process tanks (**ID Nos. HP200 and HP201**); catalyst shot pot (**ID No. V800**); tackifier tank (**ID No. V801**); crosslinker tanks (**ID Nos. V802 and V803**); slow add tanks (**ID Nos. V811, V812, V813, V821, V822, and V823**) shall be controlled with regenerative thermal oxidizer (**ID No. CD-TO1**).
- xiii. Thermal oxidizer (**ID No. CD-TO1**) shall maintain a minimum combustion bed temperature of at least 1,650°F at all times emissions from Area 8 operations are routed to the device for emission control.

Monitoring [15A NCAC 2Q .0508(f)]

- b. The number of "Zephyr" and "Hushpuppy" batches produced in Area 4 and Area 8 shall be monitored on a monthly basis.
- c. Each condenser shall be equipped with a device to continuously measure the exit gas temperature to ensure that it does not exceed 15° C. The device shall be installed in an accessible location and shall be maintained by the Permittee such that it is in proper working order at all times. These devices shall be calibrated annually.
- d. The operation of the thermal oxidizer shall be monitored as provided in Section 2.1 F.5.c.

Recordkeeping [15A NCAC 2Q .0508(f)]

- e. The number of "Zephyr" and "Hushpuppy" batches produced in Area 4 and Area 8 shall be recorded each month in a logbook (electronic or hard copy).
- f. Each condenser exit gas temperature shall be monitored before and after each batch and recorded in a log book (electronic or hard copy).

Reporting [15A NCAC 2Q .0508(f)]

- g. The Permittee shall submit a summary report of the observations by January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The summary report shall include the following:
 - (A) The total number of "Zephyr" batches for each of the preceding 17 months as well as the 12-consecutive

running total number of "Zephyr" batches for each of the six 12-consecutive month periods during the calendar half.

- (B) The total number of "Hushpuppy" batches for each of the preceding 17 months as well as the 12-consecutive running total number of "Hushpuppy" batches for each of the six 12-consecutive month periods during the calendar half.
- (C) Any instances when condenser exit gas temperatures were above 15° C as well as the date, time, equipment identification, and duration.
- (D) All instances of deviations from the requirements of this permit must be clearly identified.

SECTION 3 - GENERAL CONDITIONS (v2.19)

This section describes terms and conditions applicable to this Title V facility. All references to the “permit” in this section apply only to Part I of the permit.

A. General Provisions [NCGS 143-215 and 15A NCAC 2Q .0508(i)(16)]

1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 2D and 2Q.
2. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to NCGS 143-215.114A and 143-215.114B, including assessment of civil and/or criminal penalties. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and/or enforcement action by the DAQ.
3. This permit is not a waiver of or approval of any other Department permits that may be required for other aspects of the facility that are not addressed in this permit.
4. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore, nor does it allow the Permittee to cause pollution in contravention of state laws or rules, unless specifically authorized by an order from the North Carolina Environmental Management Commission.
5. Except as identified as state-only requirements in this permit, all terms and conditions contained herein shall be enforceable by the DAQ, the EPA, and citizens of the United States as defined in the Federal Clean Air Act.
6. Any stationary source of air pollution shall not be operated, maintained, or modified without the appropriate and valid permits issued by the DAQ, unless the source is exempted by rule. The DAQ may issue a permit only after it receives reasonable assurance that the installation will not cause air pollution in violation of any of the applicable requirements. A permitted installation may only be operated, maintained, constructed, expanded, or modified in a manner that is consistent with the terms of this permit.

B. Permit Availability [15A NCAC 2Q .0507(k) and .0508(i)(9)(B)]

The Permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of Department of Environment and Natural Resources upon request.

C. Severability Clause [15A NCAC 2Q .0508(i)(2)]

In the event of an administrative challenge to a final and binding permit in which a condition is held to be invalid, the provisions in this permit are severable so that all requirements contained in the permit, except those held to be invalid, shall remain valid and must be complied with.

D. Submissions [15A NCAC 2Q .0507(e) and 2Q .0508(i)(16)]

Except as otherwise specified herein, two copies of all documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required by this permit shall be submitted to the appropriate Regional Office. Refer to the Regional Office address on the cover page of this permit. For continuous emissions monitoring systems (CEMS) reports, continuous opacity monitoring systems (COMS) reports, quality assurance (QA)/quality control (QC) reports, acid rain CEM certification reports, and NOx budget CEM certification reports, one copy shall be sent to the appropriate Regional Office and one copy shall be sent to:

Supervisor, Stationary Source Compliance
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

E. Duty to Comply [15A NCAC 2Q .0508(i)(2)]

The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition except conditions identified as state-only requirements constitutes a violation of the Federal Clean Air Act. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

F. Circumvention - STATE ENFORCEABLE ONLY

The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation

of its associated air pollution control device(s) and appurtenances.

G. Permit Modifications

1. Administrative Permit Amendments [15A NCAC 2Q .0514]
The Permittee shall submit an application for an administrative permit amendment in accordance with 15A NCAC 2Q .0514.
2. Transfer in Ownership or Operation and Application Submittal Content [15A NCAC 2Q .0524 and 2Q .0505]
The Permittee shall submit an application for an ownership change in accordance with 15A NCAC 2Q.0524 and 2Q .0505.
3. Minor Permit Modifications [15A NCAC 2Q .0515]
The Permittee shall submit an application for a minor permit modification in accordance with 15A NCAC 2Q .0515.
4. Significant Permit Modifications [15A NCAC 2Q .0516]
The Permittee shall submit an application for a significant permit modification in accordance with 15A NCAC 2Q .0516.
5. Reopening for Cause [15A NCAC 2Q .0517]
The Permittee shall submit an application for reopening for cause in accordance with 15A NCAC 2Q .0517.

H. Changes Not Requiring Permit Modifications

1. Section 502(b)(10) Changes [15A NCAC 2Q .0523(a)]
 - a. "Section 502(b)(10) changes" means changes that contravene an express permit term or condition. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
 - b. The Permittee may make Section 502(b)(10) changes without having the permit revised if:
 - i. the changes are not a modification under Title I of the Federal Clean Air Act;
 - ii. the changes do not cause the allowable emissions under the permit to be exceeded;
 - iii. the Permittee notifies the Director and EPA with written notification at least seven days before the change is made; and
 - iv. the Permittee shall attach the notice to the relevant permit.
 - c. The written notification shall include:
 - i. a description of the change;
 - ii. the date on which the change will occur;
 - iii. any change in emissions; and
 - iv. any permit term or condition that is no longer applicable as a result of the change.
 - d. Section 502(b)(10) changes shall be made in the permit the next time that the permit is revised or renewed, whichever comes first.
2. Off Permit Changes [15A NCAC 2Q .0523(b)]
The Permittee may make changes in the operation or emissions without revising the permit if:
 - a. the change affects only insignificant activities and the activities remain insignificant after the change; or
 - b. the change is not covered under any applicable requirement.
3. Emissions Trading [15A NCAC 2Q .0523(c)]
To the extent that emissions trading is allowed under 15A NCAC 2D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 2Q .0523(c).

I.A. Reporting Requirements for Excess Emissions and Permit Deviations

[15A NCAC 2D .0535(f) and 2Q .0508(f)(2)]

"Excess Emissions" - means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of Subchapter 2D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 2Q .0700. (*Note: Definitions of excess emissions under 2D .1110 and 2D .1111 shall apply where defined by rule.*)

"Deviations" - for the purposes of this condition, any action or condition not in accordance with the terms and conditions of this permit including those attributable to upset conditions as well as excess emissions as defined above lasting less than four hours.

Excess Emissions

1. If a source is required to report excess emissions under NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or the operating permit provides for periodic (e.g., quarterly) reporting of excess emissions, reporting shall be performed as prescribed therein.
2. If the source is not subject to NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or these rules do NOT define "excess emissions," the Permittee shall report excess emissions in accordance with 15A NCAC 2D .0535 as follows:
 - a. Pursuant to 15A NCAC 2D .0535, if excess emissions last for more than four hours resulting from a malfunction, a breakdown of process or control equipment, or any other abnormal condition, the owner or operator shall:
 - i. notify the Regional Supervisor or Director of any such occurrence by 9:00 a.m. Eastern Time of the Division's next business day of becoming aware of the occurrence and provide:
 - name and location of the facility;
 - nature and cause of the malfunction or breakdown;
 - time when the malfunction or breakdown is first observed;
 - expected duration; and
 - estimated rate of emissions;
 - ii. notify the Regional Supervisor or Director immediately when corrective measures have been accomplished; and
 - iii. submit to the Regional Supervisor or Director within 15 days a written report as described in 15A NCAC 2D .0535(f)(3).

Permit Deviations

3. Pursuant to 15A NCAC 2Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) as follows:
 - a. Notify the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 2D .0535 quarterly. A written report to the Regional Supervisor shall include the probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

I.B. Other Requirements under 15A NCAC 2D .0535

The Permittee shall comply with all other applicable requirements contained in 15A NCAC 2D .0535, including 15A NCAC 2D .0535(c) as follows:

1. Any excess emissions that do not occur during start-up and shut-down shall be considered a violation of the appropriate rule unless the owner or operator of the sources demonstrates to the Director, that the excess emissions are a result of a malfunction. The Director shall consider, along with any other pertinent information, the criteria contained in 15A NCAC 2D .0535(c)(1) through (7).
2. 15A NCAC 2D .0535(g). Excess emissions during start-up and shut-down shall be considered a violation of the appropriate rule if the owner or operator cannot demonstrate that excess emissions are unavoidable.

J. Emergency Provisions [40 CFR 70.6(g)]

The Permittee shall be subject to the following provisions with respect to emergencies:

1. An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the facility, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in 3. below are met.
3. The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that include information as follows:
 - a. an emergency occurred and the Permittee can identify the cause(s) of the emergency;
 - b. the permitted facility was at the time being properly operated;
 - c. during the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the standards or other requirements in the permit; and
 - d. the Permittee submitted notice of the emergency to the DAQ within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, steps

taken to mitigate emissions, and corrective actions taken.

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

K. **Permit Renewal** [15A NCAC 2Q .0508(e) and 2Q .0513(b)]

This permit is issued for a fixed term of five years for facilities subject to Title IV requirements and for a term not to exceed five years in the case of all other facilities. This permit shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete renewal application is submitted at least nine months before the date of permit expiration. If the Permittee or applicant has complied with 15A NCAC 2Q .0512(b)(1), this permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of this permit shall remain in effect until the renewal permit has been issued or denied.

L. **Need to Halt or Reduce Activity Not a Defense** [15A NCAC 2Q .0508(i)(4)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

M. **Duty to Provide Information (submittal of information)** [15A NCAC 2Q .0508(i)(9)]

1. The Permittee shall furnish to the DAQ, in a timely manner, any reasonable information that the Director may request in **writing** to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
2. The Permittee shall furnish the DAQ copies of records required to be kept by the permit when such copies are requested by the Director. For information claimed to be confidential, the Permittee may furnish such records directly to the EPA upon request along with a claim of confidentiality.

N. **Duty to Supplement** [15A NCAC 2Q .0507(f)]

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the DAQ. The Permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the facility after the date a complete permit application was submitted but prior to the release of the draft permit.

O. **Retention of Records** [15A NCAC 2Q .0508(f) and 2Q .0508 (l)]

The Permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request.

P. **Compliance Certification** [15A NCAC 2Q .0508(n)]

The Permittee shall submit to the DAQ and the EPA (Air and EPCRA Enforcement Branch, EPA, Region 4, 61 Forsyth Street, Atlanta, GA 30303) postmarked on or before March 1 a compliance certification (for the preceding calendar year) by a responsible official with all federally-enforceable terms and conditions in the permit, including emissions limitations, standards, or work practices. It shall be the responsibility of the current owner to submit a compliance certification for the entire year regardless of who owned the facility during the year. The compliance certification shall comply with additional requirements as may be specified under Sections 114(a)(3) or 504(b) of the Federal Clean Air Act. The compliance certification shall specify:

1. the identification of each term or condition of the permit that is the basis of the certification;
2. the compliance status (with the terms and conditions of the permit for the period covered by the certification);
3. whether compliance was continuous or intermittent; and
4. the method(s) used for determining the compliance status of the source during the certification period.

Q. **Certification by Responsible Official** [15A NCAC 2Q .0520]

A responsible official shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

R. **Permit Shield for Applicable Requirements** [15A NCAC 2Q .0512]

1. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
2. A permit shield shall not alter or affect:
 - a. the power of the Commission, Secretary of the Department, or Governor under NCGS 143-215.3(a)(12), or EPA under Section 303 of the Federal Clean Air Act;
 - b. the liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
 - c. the applicable requirements under Title IV; or
 - d. the ability of the Director or the EPA under Section 114 of the Federal Clean Air Act to obtain information to determine compliance of the facility with its permit.
3. A permit shield does not apply to any change made at a facility that does not require a permit or permit revision made under 15A NCAC 2Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 2Q .0515.

S. **Termination, Modification, and Revocation of the Permit** [15A NCAC 2Q .0519]

The Director may terminate, modify, or revoke and reissue this permit if:

1. the information contained in the application or presented in support thereof is determined to be incorrect;
2. the conditions under which the permit or permit renewal was granted have changed;
3. violations of conditions contained in the permit have occurred;
4. the EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
5. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of NCGS Chapter 143, Article 21B.

T. **Insignificant Activities** [15A NCAC 2Q .0503]

Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The Permittee shall have available at the facility at all times and made available to an authorized representative upon request, documentation, including calculations, if necessary, to demonstrate that an emission source or activity is insignificant.

U. **Property Rights** [15A NCAC 2Q .0508(i)(8)]

This permit does not convey any property rights in either real or personal property or any exclusive privileges.

V. **Inspection and Entry** [15A NCAC 2Q .0508(l) and NCGS 143-215.3(a)(2)]

1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the DAQ, or an authorized representative, to perform the following:
 - a. enter the Permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
 - b. have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
 - c. inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - d. sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements at reasonable times.

Nothing in this condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee under Section 114 or other provisions of the Federal Clean Air Act.

2. No person shall refuse entry or access to any authorized representative of the DAQ who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

W. **Annual Fee Payment** [15A NCAC 2Q .0508(i)(10)]

1. The Permittee shall pay all fees in accordance with 15A NCAC 2Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environment and Natural

Resources. Annual permit fee payments shall refer to the permit number.

3. If, within 30 days after being billed, the Permittee fails to pay an annual fee, the Director may initiate action to terminate the permit under 15A NCAC 2Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 2Q .0207]

The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 2Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

Y. **Confidential Information** [15A NCAC 2Q .0107 and 2Q. 0508(i)(9)]

Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 2Q .0107, the Permittee may also submit a copy of all such information and claim directly to the EPA upon request. All requests for confidentiality must be in accordance with 15A NCAC 2Q .0107.

Z. **Construction and Operation Permits** [15A NCAC 2Q .0100 and .0300]

A construction and operating permit shall be obtained by the Permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of 15A NCAC 2Q .0100 and .0300.

AA. **Standard Application Form and Required Information** [15A NCAC 2Q .0505 and .0507]

The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 2Q .0505 and .0507.

BB. **Financial Responsibility and Compliance History** [15A NCAC 2Q .0507(d)(3)]

The DAQ may require an applicant to submit a statement of financial qualifications and/or a statement of substantial compliance history.

CC. **Refrigerant Requirements (Stratospheric Ozone and Climate Protection)** [15A NCAC 2Q .0501(e)]

1. If the Permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR Part 82 Subpart A Appendices A and B, the Permittee shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82 Subpart F.
2. The Permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR Part 82 Subpart F.
3. The Permittee shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the EPA or its designee as required.

DD. **Prevention of Accidental Releases - Section 112(r)** [15A NCAC 2Q .0508(h)]

If the Permittee is required to develop and register a Risk Management Plan with EPA pursuant to Section 112(r) of the Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.

EE. **Prevention of Accidental Releases General Duty Clause - Section 112(r)(1) -**

FEDERALLY-ENFORCEABLE ONLY

Although a risk management plan may not be required, if the Permittee produces, processes, handles, or stores any amount of a listed hazardous substance, the Permittee has a general duty to take such steps as are necessary to prevent the accidental release of such substance and to minimize the consequences of any release.

FF. **Title IV Allowances** [15A NCAC 2Q .0508(i)(1)]

This permit does not limit the number of Title IV allowances held by the Permittee, but the Permittee may not use allowances as a defense to noncompliance with any other applicable requirement. The Permittee's emissions may not exceed any allowances that the facility lawfully holds under Title IV of the Federal Clean Air Act.

GG. **Air Pollution Emergency Episode** [15A NCAC 2D .0300]

Should the Director of the DAQ declare an Air Pollution Emergency Episode, the Permittee will be required to operate in accordance with the Permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with

the appropriate requirements specified in 15A NCAC 2D .0300.

HH. **Registration of Air Pollution Sources** [15A NCAC 2D .0200]

The Director of the DAQ may require the Permittee to register a source of air pollution. If the Permittee is required to register a source of air pollution, this registration and required information will be in accordance with 15A NCAC 2D .0202(b).

II. **Ambient Air Quality Standards** [15A NCAC 2D .0501(e)]

In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in 15A NCAC 2D .0400 to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

JJ. **General Emissions Testing and Reporting Requirements** [15A NCAC 2Q .0508(i)(16)]

If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ in support of a permit application, the Permittee shall perform such testing in accordance with the appropriate EPA reference method(s) as approved by the DAQ and follow the procedures outlined below. The Permittee must request **in writing** and receive approval from the DAQ for an alternate test method or procedure.

1. The Permittee shall submit a completed Protocol Submittal Form to the DAQ Regional Supervisor at least 45 days prior to the scheduled test date. A copy of the Protocol Submittal Form may be obtained from the Regional Supervisor.
2. The Permittee shall notify the Regional Supervisor of the specific test dates at least 15 days prior to testing in order to afford the DAQ the opportunity to have an observer on-site during the sampling program.
3. During all sampling periods, the Permittee shall operate the emission source(s) under maximum normal operating conditions or alternative operating conditions as deemed appropriate by the Regional Supervisor or his delegate.
4. The Permittee shall submit **two** copies of the test report to the DAQ. The test report shall contain at a minimum the following information:
 - a. a certification of the test results by sampling team leader and facility representative;
 - b. a summary of emissions results and text detailing the objectives of the testing program, the applicable state and federal regulations, and conclusions about the testing and compliance status of the emission source(s);
 - c. a detailed description of the tested emission source(s) and sampling location(s) process flow diagrams, engineering drawings, and sampling location schematics should be included as necessary;
 - d. all field, analytical, and calibration data necessary to verify that the testing was performed as specified in the applicable test methods;
 - e. example calculations for at least one test run using equations in the applicable test methods and all test results including intermediate parameter calculations; and
 - f. documentation of facility operating conditions during all testing periods and an explanation relating these operating conditions to maximum normal operation. If necessary, provide historical process data to verify maximum normal operation.
5. The testing requirement(s) shall be considered satisfied only upon written approval of the test results by the DAQ.
6. The DAQ will review emission test results with respect exclusively to the specified testing objectives as proposed by the Permittee and approved by the DAQ. The use of the test results beyond the stated objectives remains subject to the approval of the DAQ.

KK. **Reopening for Cause** [15A NCAC 2Q .0517]

1. A permit shall be reopened and revised under the following circumstances:
 - a. additional applicable requirements become applicable to a facility with remaining permit term of three or more years;
 - b. additional requirements (including excess emission requirements) become applicable to a source covered by Title IV;
 - c. the Director or EPA finds that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or
 - d. the Director or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Any permit reopening shall be completed or a revised permit issued within 18 months after the applicable requirement

is promulgated. No reopening is required if the effective date of the requirement is after the expiration of the permit term unless the term of the permit was extended pursuant to 15A NCAC 2Q .0513(c).

3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 2Q .0507, .0521, or .0522 shall be followed to reissue the permit. If the State-enforceable only portion of the permit is reopened, the procedures in 15A NCAC 2Q .0300 shall be followed. The proceedings shall affect only those parts of the permit for which cause to reopen exists.
4. The Director shall notify the Permittee at least 60 days in advance of the date that the permit is to be reopened, except in cases of imminent threat to public health or safety the notification period may be less than 60 days.
5. Within 90 days, or 180 days if the EPA extends the response period, after receiving notification from the EPA that a permit needs to be terminated, modified, or revoked and reissued, the Director shall send to the EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate.

LL. **Reporting Requirements for Non-Operating Equipment** [15A NCAC 2Q .0508(i)(16)]

The Permittee shall maintain a record of operation for permitted equipment noting whenever the equipment is taken from and placed into operation. During operation the monitoring recordkeeping and reporting requirements as prescribed by the permit shall be implemented within the monitoring period.

ATTACHMENT

List of Acronyms

| | |
|------------------------|--|
| AOS | Alternate Operating Scenario |
| BACT | Best Available Control Technology |
| Btu | British thermal unit |
| CEM | Continuous Emission Monitor |
| CFR | Code of Federal Regulations |
| CAA | Clean Air Act |
| DAQ | Division of Air Quality |
| DENR | Department of Environment and Natural Resources |
| EMC | Environmental Management Commission |
| EPA | Environmental Protection Agency |
| FR | Federal Register |
| GACT | Generally Available Control Technology |
| HAP | Hazardous Air Pollutant |
| MACT | Maximum Achievable Control Technology |
| NCAC | North Carolina Administrative Code |
| NCGS | North Carolina General Statutes |
| NESHAPS | National Emission Standards for Hazardous Air Pollutants |
| NO_x | Nitrogen Oxides |
| NSPS | New Source Performance Standard |
| OAH | Office of Administrative Hearings |
| PM | Particulate Matter |
| PM₁₀ | Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less |
| POS | Primary Operating Scenario |
| PSD | Prevention of Significant Deterioration |
| SIC | Standard Industrial Classification |
| SIP | State Implementation Plan |
| SO₂ | Sulfur Dioxide |
| tpy | Tons Per Year |
| VOC | Volatile Organic Compound |