

Facility DEC ID: 9146400323

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 9-1464-00323/00001
Mod 0 Effective Date: 03/31/2017 Expiration Date: 03/30/2027
Mod 1 Effective Date: 07/01/2019 Expiration Date: 03/30/2027
Mod 2 Effective Date: 06/10/2022 Expiration Date: 03/30/2027
Mod 3 Effective Date: Expiration Date:

Permit Issued To: Unifrax I LLC
55 PIRSON PKWY
TONAWANDA, NY 14150

Contact: Becky Christoffel
55 Pirson Pkwy
Tonawanda, NY 14150
(716) 255-0148

Facility: Alkegen Pirson Parkway Plant
55 PIRSON PKWY
TONAWANDA, NY 14150

Description:
Unifrax 1 (Facility) is a manufacturing facility that produces polycrystalline wool (PCW) fiber, a high temperature insulation used in automotive catalytic converters as a seal and insulator. The Facility is contained in two adjacent 94,000 sf buildings in an industrial area next to interstate 290 in the Town of Tonawanda. The Standard Industrial Classification Code for Unifrax 1 is 3299 - nonmetallic Mineral Products.

This permit modification increases the allowable hours of operation for Lines 5, 6 and 7. A Toxics - Best Available Control Technology (T-BACT) analysis under 6 NYCRR Part 212 was reviewed and approved. The T-BACT analysis showed that the increased dioxins/furans (D/F) emissions due to the increased hours of operation is within the acceptable risk management range identified in DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6 NYCRR Part 212. The T-BACT analysis also showed that while the removal efficiency of the control devices could not achieve the previously required 99.5 percent removal efficiency of hydrogen chloride (HCl) emissions, AERMOD dispersion modeling demonstrated compliance with the annual and short-term guidance concentrations (AGC & SGC) with a 97 percent

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removal efficiency. The modified permit changes the required HCl removal efficiency to 97 percent.

Raw materials used in the production of PCW fiber, include aluminum chlorohydrate, colloidal silica, polyvinyl alcohol, defoamer, mineral oil, and green food coloring. The primary sources of air emissions are the natural gas-fired rolling hearth kilns (RHKs). The firing of the product in an RHK results in emissions of criteria and non-criteria contaminants, including hazardous air pollutants (HAPs) and high toxicity air contaminants (HTACs). Other emission sources include the concentrators via the vacuum pump exhausts, and the collection conveyors via the HVAC exhausts. Exhaust from each RHK, concentrator and collection conveyor are ducted to a wet scrubber dedicated to each PCW production line (Line 5, Line 6, and Line 7). Three 4-stroke, lean burn compression ignition (CI) internal combustion engines (ICE) are available for emergency power generation to ensure a safe shutdown of each production line during power outages. The Facility also operates three 9.5 million BTU/hour natural gas-fired boilers that provide process steam for each production line. The boilers are exempt from permitting in accordance with 6NYCRR 201-3.2 (c) (1)(i).

The PCW fiber production equipment, including the concentrators, the collection conveyors, and the RHKs are identified in the ASF permit, as Emission Sources 00101, 00102 and 00103, respectively for Line 5; as Emission Sources 00105, 00106 and 00107, respectively for Line 6; and as Emission Sources 00701, 00702 and 00703, respectively for Line 7. The wet scrubbers, identified as Emission Source Control (ESC) 00104 associated with Line 5, ESC 00108 associated with Line 6, and ESC 00704 associated with Line 7 are used to remove primarily hydrogen chloride (HCl) emitted from the RHK. Contaminants are exhausted from the wet scrubbers to the ambient air via Emission Point (EP) 00001, associated with ESC 00104, EP 00002, associated with ESC 00108, and EP 00003, associated with ESC 00704. All operations are contained in Emission Unit (EU) U-00001. The PCW production process is identified as Process 100 and applies to all three production lines. Building No. 1 contains Line 5 and Line 6. Newly constructed Building No. 2 contains Line 7.

The applicable requirements that apply to the production of PCW fiber listed in the ASF permit are 6NYCRR200: General Provisions, 6NYCRR201: Permits and Registrations, 6NYCRR211: General Prohibitions, 6NYCRR212: Process Operations and 40CFR60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

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This ASF Permit requires the preparation and implementation of a Preventative Maintenance and Inspection Procedure (PM&IP) Plan to ensure proper maintenance of control equipment is conducted as required under 6NYCRR200.7. The PM&IP Plan, which is considered part of the ASF permit, must be accepted by NYSDEC and must be updated as needed.

Hydrogen chloride (HCl), a non-criteria contaminant that is not a high toxicity air contaminant (non-HTAC), has received an environmental rating of “A” based on its emission rate potential (ERP) of greater than 25 pounds HCl per hour from each of the PCW production lines. Under 6 NYCRR Part 212, HCl emissions would require 99.5 percent degree of air cleaning, however the approved T-BACT analysis allows a minimum of 97 percent degree of air cleaning. The air cleaning is accomplished at each production line using a dedicated packed tower wet scrubber, with sodium hydroxide (NaOH) solution to remove HCl, followed by a mist eliminator. The facility is required to continuously monitor and record the pH of the scrubber liquid, the flow rate of scrubber liquid at the inlet to the scrubber and the differential pressure (dP) across the scrubber to ensure that the wet scrubber is operated as designed and in accordance with performance test results. The operating limits for flow rate and dP are based on 12-hour block averages and the operating limit for pH is based on a 3-hour block average. The Facility must prepare a Quality Assurance Monitoring Plan (QAMP) for the operation of the continuous parametric monitoring system as detailed in the permit. The QAMP is also required for continuous monitoring of scrubber exhaust gas flow rate, hours of operation, and production rate. The QAMP, which is considered part of the ASF permit, must be accepted by NYSDEC and updated as needed.

The permit condition specified under 6 NYCRR 212-2.3(b) Intermittent Emission Testing requires the facility to conduct initial full performance testing on each production line to determine the removal efficiency for all contaminants. A schedule and hierarchy for testing is contained in the Intermittent Emission Testing permit condition. Operating parameter limits for the wet scrubber will be confirmed or reestablished based on test results.

The facility-wide potential emissions of the hazardous air pollutant (HAP) hydrogen chloride (HCl) are greater than 520 tons per year (TPY) based on the ERP of each production line, which exceeds the major source pollutant threshold of 10 TPY for an individual HAP listed in 6NYCRR Subpart 201-6 Title V Facility Permits. To avoid the requirements of Title V, the facility chose to limit the facility-wide emissions of HCl to 9.0 TPY on a 12-month rolling total, basis. This federally enforceable limit was established during the modification of the ASF permit for the installation and operation of Line 6. Compliance with the control, monitoring, testing,

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reporting, and recordkeeping requirements specified under 6NYCRR 201-7 and 6NYCRR Part 212 will help to ensure that HCl emissions do not exceed the 9.0 TPY limit. HCl emissions shall be calculated monthly as specified in the ASF permit and summed to determine HCl emitted from all sources at the facility during any consecutive 12-month period. An annual monitoring report must be submitted within 30 days of the end of each calendar year to certify compliance with the HCl limit. Failure to comply with the 9.0 tpy HCl limit will cause the Facility to become subject to 6NYCRR Subpart 201-6 Title V Air Permitting requirements.

Pursuant to the requirements of Section 7(2) and 7(3) of the Climate Leadership and Community Protection Act (CLCPA), the Department has requested and received information regarding the project’s consistency with the CLCPA.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ
NYSDEC - REGION 9
700 Delaware Ave
BUFFALO, NY 14209

Authorized Signature: _____
Date: ___ / ___ / _____

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Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

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DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 1-1: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 1-1.1:

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 1-1.2:

The permittee must submit a renewal application at least 180 days before the expiration of permits for Title V and State Facility Permits.

Item 1-1.3

Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

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Condition 4: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4.1:

The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 2-1: Submission of application for permit modification or renewal-REGION 9

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Applicable State Requirement: 6 NYCRR 621.6 (a)

Replaces Condition(s) 5

Item 2-1.1:

Submission of applications for permit modification or renewal are to be submitted to:

NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
700 Delaware Ave.,
Buffalo, NY 14209
(716) 851-7130

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ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

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Permit Issued To: Unifrax I LLC
55 PIRSON PKWY
TONAWANDA, NY 14150

Facility: Alkegen Pirson Parkway Plant
55 PIRSON PKWY
TONAWANDA, NY 14150

Authorized Activity By Standard Industrial Classification Code:
3299 - NONMETALLIC MINERAL PRODUCTS

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- 57 23 6 NYCRR Subpart 201-5: Process Definition By Emission Unit

NOTE: * preceding the condition number indicates capping.

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FEDERALLY ENFORCEABLE CONDITIONS

Mod 3/DRAFT

**** Facility Level ****

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Sealing - 6 NYCRR 200.5

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: Acceptable Ambient Air Quality - 6 NYCRR 200.6

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: Maintenance of Equipment - 6 NYCRR 200.7

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications,

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required to operate such device effectively.

Item D: Unpermitted Emission Sources - 6 NYCRR 201-1.2

(a) Except as otherwise provided by this Part, construction or operation of a new, modified or existing air contamination source without a registration or permit issued pursuant to this Part is prohibited.

(b) If an existing facility or emission source was subject to the permitting requirements of this Part at the time of construction or modification, and the owner or operator failed to apply for a permit or registration as described in this Part, the owner or operator must apply for a permit or registration in accordance with the provisions of this Part. The facility or emission source is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing emission sources.

Item E: Recycling and Salvage - 6 NYCRR 201-1.7

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item F: Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8

No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item G: Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)

The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request.

Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item H: Proof of Eligibility for Sources Defined as Trivial

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Activities - 6 NYCRR 201-3.3 (a)

The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item I: Required Emission Tests - 6 NYCRR 202-1.1

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item J: Open Fires Prohibitions - 6 NYCRR 215.2

Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item K: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item L: Federally Enforceable Requirements - 40 CFR 70.6 (b)

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All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

FEDERAL APPLICABLE REQUIREMENTS
The following conditions are federally enforceable.

Condition 1-1: Facility Permissible Emissions
Effective between the dates of 07/01/2019 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 3-1.1:

The sum of emissions from the emission units specified in this permit shall not equal or exceed the following

Potential To Emit (PTE) rate for each regulated contaminant:

CAS No: 007647-01-0 (From Mod 3) PTE: 18,000 pounds
 per year
 Name: HYDROGEN CHLORIDE

Condition 3-1: Capping Monitoring Condition
Effective for entire length of Permit

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Replaces Condition(s) 2-2

Item 3-1.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 201-6

Item 3-1.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 3-1.3:

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request.

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Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 3-1.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 3-1.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 3-1.6:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-00001 Process: 100	Emission Point: 00001
Emission Unit: U-00001 Process: 100	Emission Point: 00002
Emission Unit: U-00001 Process: 100	Emission Point: 00003
Regulated Contaminant(s): CAS No: 007647-01-0	HYDROGEN CHLORIDE

Item 3-1.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The Facility has an annual potential to emit (PTE) hydrogen chloride (HCl) that is greater than 520 tons per year (TPY) based on the emission rate potential (ERP) of each PCW production line derived from stack tests. This exceeds the applicability threshold of 10 TPY for an individual hazardous air pollutant, specified in 6NYCRR201-6 for Title V Facility permits. The Facility has chosen to accept limitations to restrict the amount of HCl emitted from the facility to 9.0 TPY, based on a 12-month rolling total of actual HCl emissions facility-wide. Therefore, the Facility is not subject to the requirements of 6NYCRR201-6: Title V Facility Permits.

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The Facility shall maintain total HCl emissions from all sources to 9.0 TPY (18,000 lbs/yr) or less by limiting the total combined hours of operation on Line 5, Line 6 and Line 7. The hours of operation shall be limited based on the outlet emission rates, determined during the most recent annual HCl stack testing, for Line 5, Line 6 and Line 7. The annual limit on the hours of operation for Line 5, Line 6 and Line 7 shall be calculated as a rolling 12-month total. The limit shall be determined and based on the most recent approved stack testing data for HCl. This limit on the hours of operation for each line will limit the facility's potential to emit of HCl.

To record the operating hours for each line, the Facility shall continuously monitor and record the hours of operation using a supervisory control and data acquisition system or equivalent automatic data logging system. Within 7 calendar days after the last day of each month, the monthly hours of operation for each line shall be tallied, added to the previous monthly totals for the calendar year, and compared to the annual limit. By January 7 of the next calendar year, the 12-month total for the previous calendar year shall be computed, recorded and compared to the developed annual limit.

The installation, operation, calibration and maintenance of the hour meter shall be in accordance with the NYSDEC approved QAMP, manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

HCl contained in the exhaust from each PCW production line is removed by a dedicated packed tower wet scrubber. The caustic solution used in the wet scrubber shall be maintained at the concentration of NaOH needed to continuously achieve at least 97 percent removal efficiency (RE). This RE has been established from stack testing and as approved in the T-BACT analysis performed under 6NYCRR212-1.5(d) and approved September 25, 2024. Since the use of air pollution control equipment is required to meet the federally enforceable 9.0 TPY limit on HCl, the control equipment shall be treated as a part of the design. Consequently, the potential to emit HCl from the facility is reduced to less than 10 TPY. The minimum RE of 97percent and operational limits for each wet scrubber are specified elsewhere in this permit under 6NYCRR 212-2.3(b).

Facility-wide actual emissions of HCl shall not exceed 9.0 TPY as determined by summing the monthly individual HCl

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emissions during any consecutive 12-month period from all contributing activities. In addition to HCl emissions generated by the PCW production lines, HCl emissions from exempt activities and fugitive HCl emissions must also be included in potential to emit calculations when determining whether an emission source is subject to Title V Facility permitting. HCl emissions from PCW production lines shall be determined using the ERP of HCl and the removal efficiency of the wet scrubber determined during the most recent stack test approved by NYSDEC, and the hours of operation of each PCW production line. The ERP for HCl shall be determined at each emission source via stack testing at maximum production capacity. Determination of removal efficiency requires simultaneous testing for the ERP HCl (lb/hr) at the inlet and the HCl (lb/hr) at the outlet of each scrubber using USEPA Reference Method 26A.

Each PCW fiber production line and scrubber is required to be interlocked based on set points for the operating parameter limits to prevent the release of uncontrolled emissions of HCl to the ambient air. If the interlock fails to shut down the kiln in time to avoid an exceedance of any operating limit for the wet scrubber specified under 6NYCRR Part 212, then the Facility shall assume 0 percent control of HCl emissions during that period. In that case, only the ERP and time that the wet scrubber was operated without meeting operational limits shall be used to calculate HCl emissions. If an emergency bypass event takes place, then 0percent control of HCl and the duration of the bypass shall be used to calculate HCl emissions.

To verify compliance with the 9.0 TPY limit for HCl, no more than 7 calendar days following the end of each calendar month, the Facility shall calculate the total monthly HCl emission rate (ER) as follows or in another manner acceptable to NYSDEC.

$$\text{Monthly Total HCl (lbs/mo)} = \text{ER1} + \text{ER2} + \text{ER3} + \text{ER4} + \text{ER5} + \text{ER6} + \text{ER7}$$

Wet Scrubber Operating Within Operating Limits:
 ER1 (Line 5) = ERP of HCl (lbs/hr) * percentRE/100 * Hours of Operation (hrs/mo)
 ER2 (Line 6) = ERP of HCl (lbs/hr) * percentRE/100 * Hours of Operation (hrs/mo)
 ER3 (Line 7) = ERP of HCl (lbs/hr) * percentRE/100 * Hours of Operation (hrs/mo)

Wet Scrubber Not Operating Within Operating Limits:
 ER4 (Line 5) = ERP of HCl (lbs/hr) * Hours of Operation

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(hrs/mo)

ER5 (Line 6) = ERP of HCl (lbs/hr) * Hours of Operation

(hrs/mo)

ER6 (Line 7) = ERP of HCl (lbs/hr) * Hours of Operation

(hrs/mo)

ER7 = HCl emissions from exempt sources and fugitive (uncaptured) HCl emissions, as applicable.

At the time monthly HCl emissions are calculated, the facility-wide 12-month rolling total for HCl emissions shall be computed for that month by adding the current monthly facility HCl emissions to the monthly facility HCl emissions for the previous 11 months.

Within 30 days following each calendar year, the responsible official shall provide a certification to the Department that the facility has operated the facility within the 9.0 TPY limit imposed by the emissions cap. This shall include a summary report which lists all information used to calculate the monthly and rolling 12-month totals for HCl, including identification of exempt and/or fugitive (uncaptured) sources, if applicable; how monthly totals are calculated; monthly HCl totals; monthly hours of operation for each line; the 12-month rolling total hours of operation with a comparison to the calculated limit on hours of operation; rolling 12-month HCl totals for each consecutive month of the period, and a comparison to the 9.0 TPY limit for facility-wide HCl emissions. All submittals to the Department shall be certified by the Facility's responsible official as to the truth, completeness, and accuracy of all information recorded and reported.

An exceedance of this emission limit, failure to fulfill the recordkeeping and reporting requirements and/or failure to operate PCW production and associated control equipment in accordance with specified operating and production limits constitutes a violation of 6NYCRR201-6. Exceedance of this limit must be reported to the Department immediately via telephone during normal working hours, but no later than 2 business days after the occurrence. A written report shall be submitted to the Department within 30 days of the occurrence and shall include the cause of the exceedance, corrective action taken, and an estimate of total HCl emissions.

The Facility shall keep and maintain records for PCW production and other HCl contributing activities, including but not limited to production records, operating

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records, continuous parametric monitoring system (CPMS records), usage records, purchase orders, invoices, repair and maintenance records, calibration records, control equipment malfunction, repair, and maintenance records, calculations used to determine the monthly emissions, including periods of control equipment malfunction, operator error, bypass and corrective action, and other documents to support information in the monthly log. All time periods when the wet scrubber is not operated in accordance with this permit shall be recorded in a permanently bound logbook or electronically on a secure server. This record shall include cause and corrective action taken. Records shall be maintained on-site for a minimum of 5 years and shall be available expeditiously upon request by NYSDEC and/or USEPA representatives.

Parameter Monitored: HYDROGEN CHLORIDE

Upper Permit Limit: 9.0 tons per year

Reference Test Method: USEPA Method 26A

Monitoring Frequency: MONTHLY

Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

Condition 2-2: Capping Monitoring Condition
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Replaced by Condition(s) 3-1
Replaces Condition(s) 1-6

Item 2-2.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 201-6

Item 2-2.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 2-2.3:

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 2-2.4:

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On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 2-2.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 2-2.6:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-00001 Process: 100	Emission Point: 00001
Emission Unit: U-00001 Process: 100	Emission Point: 00002
Emission Unit: U-00001 Process: 100	Emission Point: 00003
Regulated Contaminant(s): CAS No: 007647-01-0	HYDROGEN CHLORIDE

Item 2-2.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The Facility has an annual potential to emit (PTE) hydrogen chloride (HCl) that is greater than 520 tons per year (tpy) based on the emission rate potential (ERP) of each PCW production line derived from stack tests. This exceeds the applicability threshold of 10 tons per year (tpy) for an individual hazardous air pollutant, specified in 6NYCRR201-6 for Title V Facility permits. The Facility has chosen to accept limitations to restrict the amount of HCl emitted from the facility to 9.0 tpy, based on a 12-month rolling total of actual HCl emissions facility-wide. Therefore, the Facility is not subject to the requirements of 6NYCRR201-6: Title V Facility Permits.

The Facility shall maintain total HCl emissions from all sources to 9.0 tpy or less by complying with 6NYCRR Part 212 requirements. Hydrogen chloride contained in the

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exhaust from each PCW production line is removed by a dedicated packed tower wet scrubber. The caustic solution used in the wet scrubber shall be maintained at the concentration of NaOH needed to continuously achieve at least 99.5 % removal efficiency. This removal efficiency is required under 6NYCRR212-2.3(b), Table 4 for A rated contaminants with an emission rate potential that exceeds 25 lbs per hour. Since the use of air pollution control equipment is required to meet the federally enforceable 9.0 tpy limit on HCl, the control equipment shall be treated as a part of the design. Consequently, the potential to emit hydrogen chloride from the facility is reduced to less than 10 tpy. The minimum removal efficiency of 99.5% and operational limits for each wet scrubber are specified elsewhere in this permit under 6NYCRR 212-2.3(b). A production limit for each PCW line is specified under 6NYCRR 212-2.

Facility-wide actual emissions of hydrogen chloride shall not exceed 9.0 tpy as determined by summing the monthly individual HCl emissions during any consecutive 12-month period from all contributing activities. In addition to HCl emissions generated by the PCW production lines, HCl emissions from exempt activities and fugitive HCl emissions must also be included in potential to emit calculations when determining whether an emission source is subject to Title V Facility permitting. HCl emissions from PCW production lines shall be determined using the emission rate potential (ERP) of HCl and the removal efficiency of the wet scrubber determined during the most recent stack test approved by NYSDEC, and the hours of operation of each PCW production line. The ERP for HCl shall be determined at each emission source via stack testing at maximum production capacity. Determination of removal efficiency requires simultaneous testing for the ERP HCl (lb/hr) at the inlet and the HCl (lb/hr) at the outlet of each scrubber using USEPA Reference Method 26A.

Each PCW fiber production line and scrubber is required to be interlocked based on set points for the operating parameter limits to prevent the release of uncontrolled emissions of HCl to the ambient air. If the interlock fails to shut down the kiln in time to avoid an exceedance of any operating limit for the wet scrubber specified under 6NYCRR Part 212, then the Facility shall assume 0 % control of HCl emissions during that period. In that case, only the ERP and time that the wet scrubber was operated without meeting operational limits shall be used to calculate HCl emissions. If an emergency bypass event takes place, then 0% control of HCl and the duration of the bypass shall be used to calculate HCl emissions.

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To verify compliance with the 9.0 tpy limit for HCl, no more than 7 calendar days following the end of each calendar month, the Facility shall calculate the total monthly HCl emissions as follows or in another manner acceptable to NYSDEC.

$$\text{Monthly Total HCl (lbs/mo)} = \text{ER1} + \text{ER2} + \text{ER3} + \text{ER4} + \text{ER5} + \text{ER6} + \text{ER7}$$

Wet Scrubber Operating Within Operating Limits:

$$\text{ER1 (Line 5)} = \text{ERP of HCl (lbs/hr)} * \% \text{RE}/100 * \text{Hours of Operation (hrs/mo)}$$

$$\text{ER2 (Line 6)} = \text{ERP of HCl (lbs/hr)} * \% \text{RE}/100 * \text{Hours of Operation (hrs/mo)}$$

$$\text{ER3 (Line 7)} = \text{ERP of HCl (lbs/hr)} * \% \text{RE}/100 * \text{Hours of Operation (hrs/mo)}$$

Wet Scrubber Not Operating Within Operating Limits:

$$\text{ER4 (Line 5)} = \text{ERP of HCl (lbs/hr)} * \text{Hours of Operation (hrs/mo)}$$

$$\text{ER5 (Line 6)} = \text{ERP of HCl (lbs/hr)} * \text{Hours of Operation (hrs/mo)}$$

$$\text{ER6 (Line 7)} = \text{ERP of HCl (lbs/hr)} * \text{Hours of Operation (hrs/mo)}$$

ER7 = HCl emissions from exempt sources and fugitive (uncaptured) HCl emissions, as applicable.

At the time monthly HCl emissions are calculated, the facility-wide 12-month rolling total for HCl emissions shall be computed for that month by adding the current monthly facility HCl emissions to the monthly facility HCl emissions for the previous 11 months.

Within 30 days following each calendar year, the responsible official shall provide a certification to the Department that the facility has operated the facility within the 9.0 ton per year limit imposed by the emissions cap. This shall include a summary report which lists all information used to calculate the monthly and rolling 12-month totals for HCl, including identification of exempt and/or fugitive (uncaptured) sources, if applicable; how monthly totals are calculated; monthly HCl totals; rolling 12-month HCl totals for each consecutive month of the period, and a comparison to the 9.0 tpy limit for facility-wide HCl emissions. All submittals to the Department shall be certified by the Facility's responsible official as to the truth, completeness, and accuracy of all information recorded and reported.

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An exceedance of this emission limit, failure to fulfill the recordkeeping and reporting requirements and/or failure to operate PCW production and associated control equipment in accordance with specified operating and production limits constitutes a violation of 6NYCRR201-6. Exceedance of this limit must be reported to the Department immediately via telephone during normal working hours, but no later than 2 business days after the occurrence. A written report shall be submitted to the Department within 30 days of the occurrence and shall include the cause of the exceedance, corrective action taken, and an estimate of total HCl emissions.

The Facility shall keep and maintain records for PCW production and other HCl contributing activities, including but not limited to production records, operating records, CPMS records, usage records, purchase orders, invoices, repair and maintenance records, calibration records, control equipment malfunction, repair, and maintenance records, calculations used to determine the monthly emissions, including periods of control equipment malfunction, operator error, bypass and corrective action, and other documents to support information in the monthly log. All time periods when the wet scrubber is not operated in accordance with this permit shall be recorded in a permanently bound logbook or electronically on a secure server. This record shall include cause and corrective action taken to correct the problem. Records shall be maintained on-site for a minimum of 5 years and shall be available expeditiously upon request by NYSDEC and/or USEPA representatives.

Parameter Monitored: HYDROGEN CHLORIDE

Upper Permit Limit: 9.0 tons per year

Reference Test Method: USEPA Method 26A

Monitoring Frequency: MONTHLY

Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

The initial report is due 1/30/2023.

Subsequent reports are due every 12 calendar month(s).

Condition 3-2: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 212-1.5 (d)

Item 3-2.1:

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

Emission Unit: U-00001

Emission Point: 00001

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Process: 100 Emission Source: 00104

Emission Unit: U-00001 Emission Point: 00002
Process: 100 Emission Source: 00108Emission Unit: U-00001 Emission Point: 00003
Process: 100 Emission Source: 00704Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE**Item 3-2.2:**

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

In instances where a facility owner or operator can demonstrate to the satisfaction of the Department that the facility owner or operator will apply best available control technology (BACT) for criteria air contaminants or toxics best available control technology (T-BACT) for non-criteria air contaminants, the Department may specify a less restrictive permissible emission rate or degree of air cleaning for the process emission source or emission point than required under Subpart 212-2 of this Part.

The Facility submitted a T-BACT analysis for the emissions of hydrogen chloride (HCl). T-BACT has been identified as the use of a wet scrubber with ADIOX packing and mist eliminators to control the emissions of HCl. NYSDEC has accepted the T-BACT analysis and conditions to monitor HCl and emissions are located in other permit conditions.

Based on initial stack tests conducted at the inlet of the wet scrubbers associated with Polycrystalline Wool (PCW) Production Lines at the Facility, the emission rate potential for each production line exceeds 25 pounds per hour (lbs/hr) for HCl, a non-criteria, non-High Toxicity Air Contaminant (HTAC) contaminant. Therefore, HCl emissions are subject to the air cleaning required in 6 NYCRR 212-2.3(b) Table 4. An evaluation of the HCl emissions using AERMOD dispersion model and the ERP for each line showed that the Annual Guideline Concentration (AGC) would be exceeded if HCl is controlled at 90 percent degree of air cleaning for an initial environmental rating of "B". Considering this, NYSDEC has assigned an environmental rating of "A" to HCl in accordance with DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212 (DAR-1).

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Subdivision 212-2.3(b), Table 4 specifies a minimum of 99.5 percent degree of air cleaning for compliance with 6NYCRR Part 212 requirements for a non-criteria, A-rated air contaminant with an ERP greater than 25 pounds per hour. Recent stack testing has shown that the wet scrubbers with the mist eliminators cannot achieve the 99.5 percent degree of air cleaning. The T-BACT analysis for HCl emissions demonstrates that a minimum of 97 percent removal efficiency through the scrubbers would not exceed the SGC or AGC for HCl.

By complying with this 97 percent control requirement, the Facility will also be able to maintain HCl emissions below the major source applicability threshold of 10 tpy for hazardous air pollutants (HAPs) that would require compliance with 6NYCRR Subpart 201-6 Title V Facility Permits.

To verify continuous compliance with the minimum 97 percent degree of air cleaning, each scrubber system shall be equipped with continuous parametric monitoring systems (CPMS) that measure operating performance indicating parameters associated with the scrubber system, including the pressure differential across the scrubber, the pH of the scrubber solution, the flow rate of the scrubber liquid at the inlet, and the flow rate of scrubber exhaust gas. Monitoring data shall be recorded and averaged as specified elsewhere in monitoring conditions in this permit for each operational limit.

Each CPMS shall be operated continuously, and measurements recorded whenever the scrubber is operating. Each monitor must be operated according to the Quality Assurance Monitoring Plan (QAMP) approved by NYSDEC. To prevent the release of uncontrolled emissions to the atmosphere, the processes and equipment associated with the scrubber system and the scrubber system shall be interlocked to ensure that the PCW fiber production processes cannot operate unless the scrubber system is operating according to this permit. The wet scrubber shall be operating and functioning properly prior to start-up of the PCW process and shall continue until the feed to the kiln has been cut off for not less than the kiln residence time.

Whenever the wet scrubber fails to operate in accordance with this permit to ensure 97 percent removal efficiency, the Facility shall report to the Department immediately by email or by telephone during normal working hours, but no later than 2 business days after the occurrence. A written report shall be submitted to the Department within 30 days of the occurrence and shall include the date(s) and times, cause and corrective action taken, an estimate of HCl

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emissions during the excursion (hourly and total), and if any action(s) are needed to prevent reoccurrence, the details with a timeline for completion. The estimated HCl emissions shall also be reported as part of the Annual Monitoring Report as detailed in the HCl capping permit condition under 6 NYCRR 201-6.

To verify compliance, the Facility shall conduct performance tests using Reference Method 26A to determine the degree of air cleaning in terms of removal efficiency for each scrubber and to confirm the emission rate potential (ERP) and potential to emit hydrogen chloride in pounds per hour for Lines 5, 6, and 7 as described for intermittent emission testing under 6 NYCRR 212-2.3(b) elsewhere in this permit.

At all times, the wet scrubber and associated monitoring equipment shall be installed, operated, calibrated, and maintained in accordance with this permit, the QAMP, the Preventative Maintenance and Inspection Procedure (PM&IP) Plan, scrubber design, manufacturer's recommendations, and good engineering practice.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: DEGREE OF AIR CLEANING
 Upper Permit Limit: 97 percent
 Reference Test Method: EPA Method 26A
 Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
 Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 Subsequent reports are due every 12 calendar month(s).

**Condition 3-3: Compliance Demonstration
 Effective for entire length of Permit**

Applicable Federal Requirement: 6 NYCRR 212-1.5 (d)

Item 3-3.1:

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The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001
 Process: 100

Emission Point: 00001
 Emission Source: 00104

Emission Unit: U-00001
 Process: 100

Emission Point: 00002
 Emission Source: 00108

Emission Unit: U-00001
 Process: 100

Emission Point: 00003
 Emission Source: 00704

Regulated Contaminant(s):
 CAS No: 001746-01-6 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 3-3.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
 DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

In instances where a facility owner or operator can demonstrate to the satisfaction of the Department that the facility owner or operator will apply BACT for criteria air contaminants or toxics best available control technology (T-BACT) for non-criteria air contaminants, the Department may specify a less restrictive permissible emission rate or degree of air cleaning for the process emission source or emission point than required under Subpart 212-2 of this Part.

The Facility submitted a T-BACT analysis for the emissions of dioxins/furans (D/F). T-BACT has been identified as the use of a wet scrubber with ADIOX packing and mist eliminators to control the emissions of D/F and NYSDEC has accepted the T-BACT analysis.

D/F is a High Toxicity Air Contaminant (HTAC) contaminant and have been assigned an environmental rating of “A”. Based on stack tests conducted at the inlet of the wet scrubbers associated with PCW Production Lines, the emission rate potential for each production line is less than 0.1 pounds per hour (lbs/hr) for D/F, Therefore, D/F emissions are subject to the degree of air cleaning requirements located in 6 NYCRR 212-2.3(b) Table 4. Table 4 requires D/F emissions to meet the annual guideline concentration (AGC) value of 2.68E-08 micrograms per meter cubed (ug/m3). The Facility evaluated the impact from D/F using the AERMOD dispersion model and the maximum emission rate for each production line based on the most recent stack test. The ambient impact of D/F did not demonstrate compliance with the AGC. The evaluated impacts from D/F,

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using the AERMOD dispersion model, showed an annual impact of $1.73E-07$ ug/m³. Since the maximum off-site concentration exceeds the AGC the source owner or operator must submit a T-BACT analysis and demonstrate that the maximum off-site air concentration remains within the acceptable residual risk management range established in DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212 (DAR-1).

Under DAR-1 residual risk can be expressed as the excess cancer risk, defined as a one-in-a-million chance, for people exposed to a carcinogen. D/F is a known carcinogen. The acceptable residual risk management range for process emission source's and/or emission point's must be less than 10-in-a-million cancer risk for those non-criteria air contaminants identified as carcinogens. The AGC for D/F of $2.68E-08$ ug/m³ represents one-in-a million cancer risk. The modeled annual impacts of D/f are $1.73E-07$ ug/m³, which is approximately 6.46 times the AGC representing a residual cancer risk of 6.46-in-a million. This is within the acceptable residual risk management range of less than 10-in-a-million cancer risk.

To ensure that the annual impacts from D/F emissions remain within the acceptable residual risk management range, each scrubber system shall be equipped with continuous parametric monitoring systems (CPMS). The CPMS shall measure operating performance indicating parameters associated with the scrubber system, including the pressure differential across the scrubber, the pH of the scrubber solution, the flow rate of the scrubber liquid at the inlet, and the flow rate of scrubber exhaust gas. Monitoring data shall be recorded and averaged as specified elsewhere in monitoring conditions in this permit for each operational limit.

Each CPMS shall be operated continuously, and measurements recorded whenever the scrubber is operating. Each monitor must be operated according to the Quality Assurance Monitoring Plan (QAMP) approved by NYSDEC. To prevent the release of uncontrolled emissions to the atmosphere, the processes and equipment associated with the scrubber system and the scrubber system shall be interlocked to ensure that the PCW fiber production processes cannot operate unless the scrubber system is operating according to this permit. The wet scrubber shall be operating and functioning properly prior to start-up of the PCW process and shall continue until the feed to the kiln has been cut off for not less than the kiln residence time.

Whenever the wet scrubber fails to operate in accordance with this permit, the Facility shall report to the

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Department immediately by email or by telephone during normal working hours, but no later than 2 business days after the occurrence. A written report shall be submitted to the Department within 30 days of the occurrence and shall include the date(s) and times, cause and corrective action taken, if any action(s) are needed to prevent reoccurrence, and the details with a timeline for completion.

The Facility shall conduct performance tests annually using Reference Method 23 to determine the emission rate for D/F in pounds per hour for Lines 5, 6, and 7 as described for intermittent emission testing under 6 NYCRR 212-2.3(b) elsewhere in this permit.

At all times, the wet scrubber and associated monitoring equipment shall be installed, operated, calibrated, and maintained in accordance with this permit, the QAMP, the Preventative Maintenance and Inspection Procedure (PM&IP) Plan, scrubber design, manufacturer's recommendations, and good engineering practice.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under elsewhere in this permit.

Parameter Monitored: 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Upper Permit Limit: 2.68E-07 micrograms per cubic meter

Reference Test Method: EPA Method 23

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

Condition 3-4: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 212-1.5 (d)

Item 3-4.1:

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

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Emission Unit: U-00001 Emission Point: 00001
 Process: 100 Emission Source: 00104

Emission Unit: U-00001 Emission Point: 00002
 Process: 100 Emission Source: 00108

Emission Unit: U-00001 Emission Point: 00003
 Process: 100 Emission Source: 00704

Regulated Contaminant(s):
 CAS No: 007647-01-0 HYDROGEN CHLORIDE

Item 3-4.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
 DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The minimum flow rate of the scrubber liquid at the inlet is 210 gallons per minute (gpm).

The results from the initial performance test conducted shall confirm that operating within this scrubber design parameter compliance with 6NYCRR212 requirements. Emission testing requirements are specified elsewhere in this permit under 6NYCRR212-2.3(b).

The Facility may establish a new minimum flow rate operating limit as described under the 6NYCRR 212-2.3(b) intermittent emission testing permit condition located elsewhere in this permit. Approval for lowering the scrubber liquid flow rate limit requires stack testing that includes all contaminants specified by NYSDEC, with Part 212 compliance demonstration for each contaminant. The new operating limit shall be reported in the Annual Monitoring Report (Report), as described under the recordkeeping permit condition under 6NYCRR212-2.3(b). Additional annual reporting requirements are also specified under that permit condition.

The scrubber shall be operated at or above the minimum flow rate whenever the PCW fiber production process is operating until the feed to the kiln has been cut off for a time not less than the kiln residence time. To verify that the scrubbing system is operating properly, the flow rate of the scrubber liquid at the inlet to the scrubber shall be monitored continuously, with data recording at least once every 15 minutes. The data averaging period for compliance shall be a 12-hour block. The data recorded a minimum of once every 15-minute quadrant, shall be used to calculate the arithmetic average for each clock hour to

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determine the 1-hour average. The 12-hour block average shall be calculated using the 1-hour averages for twelve contiguous clock hours to demonstrate compliance with the minimum operating limit for total flow rate of liquid at the inlet to the scrubber.

The scrubber liquid flow rate meter shall be equipped with an alarm to alert the facility operator that the scrubber liquid flow rate has fallen below the minimum limit. The minimum flow rate set point shall be above the limit to allow time to avoid an excursion. If the minimum flow rate is not achieved, the feed to the rolling hearth kiln shall be stopped immediately and corrective action taken to increase the flow rate of scrubber liquid to the minimum required.

The installation, operation, calibration and maintenance of the flow sensor shall be in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: FLOW RATE
Lower Permit Limit: 210 gallons per minute
Monitoring Frequency: CONTINUOUS
Averaging Method: 12-HOUR BLOCK AVERAGE
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
Subsequent reports are due every 12 calendar month(s).

Condition 3-5: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 212-1.5 (d)

Item 3-5.1:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-00001
Process: 100

Emission Point: 00001
Emission Source: 00104

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Emission Unit: U-00001 Emission Point: 00002
Process: 100 Emission Source: 00108

Emission Unit: U-00001 Emission Point: 00003
Process: 100 Emission Source: 00704

Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE

Item 3-5.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

For each production line the Facility shall establish the scrubber liquid pH for each wet scrubber required to meet the hydrogen chloride (HCl) minimum removal efficiency (RE) of 97 percent approved as the minimum RE in accordance with the T-BACT submitted. The minimum pH operating limit shall be equal to the average scrubber liquid pH measured during the most recent performance test percent using USEPA Reference Method 26A.

The Wet Scrubber System associated with each PCW production line consists of a packed bed wet scrubber, mist eliminator, continuous parametric monitors and recorders, and all ancillary equipment. The pH of the scrubber liquid shall be monitored, recorded, and averaged to verify compliance with the established pH limit based on a 3-hour block average. The pH limit of 8.5 pH units specified below is based on design and shall be in effect until the next performance test results are accepted by NYSDEC for each production line. Emission testing requirements are specified under the 6NYCRR 212-2.3(b) intermittent emission testing permit condition located elsewhere in this permit. The operating limit for the pH of the scrubber liquid shall be confirmed or reestablished during subsequent performance tests using the continuous pH monitor. Approval for lowering the pH limit requires stack testing that includes all contaminants specified by NYSDEC, with Part 212 compliance demonstration for each contaminant. If a new limit is established, based on acceptable performance test results, it will apply from the day NYSDEC accepts the performance test results. The performance test report and each Annual Monitoring Report shall include the value of the confirmed or reestablished pH operating limit for each packed bed wet scrubber and the method used to establish each limit, including all calculations and, if applicable, any assumptions made in determining the limits.

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The scrubber shall be operated at or above the minimum pH limit whenever the PCW fiber production process is operating until the feed to the kiln has been cut off for a time not less than the kiln residence time. To demonstrate compliance with the pH limit, the scrubber liquid pH shall be monitored and recorded continuously, with data recording every 15 minutes. The data averaging period for compliance shall be a 3-hour block. The data recorded a minimum of once every 15-minute quadrant shall be used to calculate the arithmetic average for each clock hour to determine the 1-hour average. The 3-hour block average shall be calculated using the 1-hour averages for three contiguous clock hours to demonstrate compliance with the minimum operating limit for pH of the scrubber liquid. The continuous parameter monitoring system shall be equipped with an alarm to notify the facility operator if the scrubbing solution has a pH lower than the pH limit, if caustic solution is not flowing into the scrubber as designed, or if caustic solution is not at the necessary concentration to ensure 97percent removal of HCl. The minimum pH controller set point shall be above the limit to allow time to avoid an excursion. If the pH of the scrubber liquid drops below the pH limit, based on a 3-hour block average, the feed to the rolling hearth kiln shall be stopped immediately and corrective action taken.

Removal of HCl from the gas stream is dependent on the concentration of sodium hydroxide in the scrubber liquid. If the pH of the monitored scrubber liquid regularly drops below the minimum pH limit, based on 3-hour block averages, then the Facility shall monitor the concentration of sodium hydroxide of the scrubber liquid at the inlet and outlet in a manner acceptable to NYSDEC to ensure that the scrubber is operating as it was during stack testing to achieve 97percent removal of HCl. Any changes in parametric monitoring must be reviewed and approved by NYSDEC and will require modification of the Quality Assurance Monitoring Plan (QAMP) and the ASF permit.

Operation of the wet scrubber below the established minimum pH limit constitutes a deviation, which must be reported in the Annual HCl Capping and Monitoring Report for each instance that the minimum operating limit is not met. Details of any corrective action taken to remedy the cause of the deviation must also be included in the Annual HCl Capping Report.

The continuous parameter monitoring system for pH shall be installed, operated, calibrated, maintained, and evaluated

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in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration and operation of equipment/devices, monitoring, recording, scrubber liquid pH averaging (1-hr and 3-hr block), stack testing, maintenance/repair, and any other records that verify and support the establishment of and compliance with the operating limit, shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: PH
 Lower Permit Limit: 8.5 pH (STANDARD) units
 Reference Test Method: USEPA Method 26A
 Monitoring Frequency: CONTINUOUS
 Averaging Method: 3-HOUR BLOCK AVERAGE
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 Subsequent reports are due every 12 calendar month(s).

**Condition 3-6: Compliance Demonstration
 Effective for entire length of Permit**

Applicable Federal Requirement: 6 NYCRR 212-2.3 (b)

Replaces Condition(s) 2-16

Item 3-6.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001	Emission Point: 00001
Process: 100	

Emission Unit: U-00001	Emission Point: 00002
Process: 100	

Emission Unit: U-00001	Emission Point: 00003
Process: 100	

Regulated Contaminant(s):	
CAS No: 000050-00-0	FORMALDEHYDE
CAS No: 000056-23-5	CARBON TETRACHLORIDE
CAS No: 000067-66-3	CHLOROFORM

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CAS No: 000074-87-3	METHYL CHLORIDE
CAS No: 000074-90-8	HYDROCYANIC ACID
CAS No: 000075-00-3	ETHANE, CHLORO
CAS No: 000075-01-4	VINYL CHLORIDE
CAS No: 000075-05-8	ACETONITRILE
CAS No: 000075-07-0	ACETALDEHYDE
CAS No: 000075-09-2	DICHLOROMETHANE
CAS No: 000075-21-8	ETHYLENE OXIDE
CAS No: 000079-01-6	TRICHLOROETHYLENE
CAS No: 000079-34-5	1,1,2,2-TETRACHLOROETHANE
CAS No: 000087-68-3	HEXACHLOROBUTADIENE
CAS No: 000107-06-2	1,2-DICHLOROETHANE
CAS No: 000108-88-3	TOLUENE
CAS No: 000108-90-7	CHLOROBENZENE
CAS No: 000118-74-1	HEXACHLOROBENZENE
CAS No: 000120-82-1	1,2,4-TRICHLOROBENZENE
CAS No: 000123-91-1	1,4-DIETHYLENE DIOXIDE
CAS No: 000630-08-0	CARBON MONOXIDE
CAS No: 001330-20-7	XYLENE, M, O & P MIXT.
CAS No: 007439-92-1	LEAD
CAS No: 007439-96-5	MANGANESE
CAS No: 007439-97-6	MERCURY
CAS No: 007440-02-0	NICKEL METAL AND INSOLUBLE

COMPOUNDS

CAS No: 007440-36-0	ANTIMONY
CAS No: 007440-38-2	ARSENIC
CAS No: 007440-43-9	CADMIUM
CAS No: 007440-47-3	CHROMIUM
CAS No: 007446-09-5	SULFUR DIOXIDE
CAS No: 007647-01-0	HYDROGEN CHLORIDE
CAS No: 007664-39-3	HYDROGEN FLUORIDE
CAS No: 007782-49-2	SELENIUM
CAS No: 007782-50-5	CHLORINE
CAS No: 0NY075-00-0	PARTICULATES
CAS No: 0NY075-00-5	PM-10
CAS No: 0NY210-00-0	OXIDES OF NITROGEN
CAS No: 0NY998-00-0	VOC
CAS No: 018540-29-9	CHROMIUM(VI)
CAS No: 0NY075-02-5	PM-2.5
CAS No: 000608-73-1	HEXACHLOROCYCLOHEXANE - TECHNICAL
CAS No: 001746-01-6	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 3-6.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

Performance testing of each PCW production line shall be conducted in accordance with Reference Test Methods accepted by NYSDEC, as described below. The initial Part 212 full performance test for Line 5, Line 6 and Line 7 using ADIOX packing and Hastelloy/Teflon mist eliminator

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has been conducted for the contaminants listed in this condition. The limit listed below applies to 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxins/furans) for the facility. This limit is based on the T-BACT submitted and approved by the NYSDEC .

After each initial full performance test of Lines 5, 6 and 7 has been completed and NYSDEC has accepted the test results, the Facility may remove any contaminant that is not a High Toxicity Air Contaminant (Non-HTAC) from the above contaminant list if test results confirm it to be present at less than 100 lb/yr based on the emission rate potential (ERP) and current limit for the hours of operation for each line. In addition, any contaminant tested for but determined not present in scrubber inlet and outlet gas streams may be eliminated from the above contaminant list for Part 212 compliance if NYSDEC accepts the test results.

A second Part 212 performance test shall be conducted within 24 months of the initial full performance test. Testing for any contaminant that demonstrates an ambient impact that is 75percent or less than its respective short-term and/or annual guideline concentration (SGC and/or AGC) based on two consecutive test events for the facility may be reduced to every fifth year following the last test event. The ambient impact of each contaminant shall be determined using unit impact multipliers derived from the most recent AERMOD Modeling Results accepted by NYSDEC for the applicable operating scenario. Annual testing must be conducted for any contaminant that fails to demonstrate consistent results (+/- 5percent), or that has a short-term and/or annual ambient impact that exceeds 75percent of its respective SGC and/or AGC, as applicable, based on all production lines.

Testing for dioxins/furans and hydrogen chloride (HCl) at the inlet and outlet of each scrubber shall be annual for each production line. Test results for dioxins/furans using USEPA Reference Method 23 shall demonstrate compliance with the upper permit limit for the facility. Test results for HCl using USEPA Reference Method 26A shall demonstrate a minimum of 97percent degree of air cleaning for each production line. NYSDEC may consider reducing the frequency of testing required for these contaminants if sufficient consistent scrubber performance is demonstrated by stack test results approved by NYSDEC and compliance with Part 212 requirements is demonstrated. A formal written request for reduced testing shall be submitted to NYSDEC by the Facility, with justification and documentation supporting the reduction. NYSDEC approval of the request is required for reduced testing to

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take place.

A stack test protocol must be submitted to the Region 9 NYSDEC office at least 45 calendar days prior to conducting a stack test. The Facility shall notify Region 9 NYSDEC at least 7 calendar days prior to the scheduled stack test to ensure that a NYSDEC representative can be onsite to witness the performance test. If the stack test is rescheduled it must be for a date agreed upon by both NYSDEC and the Facility. Any stack testing conducted without NYSDEC involvement will not satisfy the stack testing requirements specified in this permit. The initial full compliance performance test for Line 5 and/or Line 6 may be required sooner than 12 months at NYSDEC's discretion.

Each stack test method conducted during the initial full performance test for each production line shall be conducted at the inlet and the outlet of the wet scrubber using NYSDEC accepted methods and procedures to determine the ERP and actual emission rate for each contaminant. If the stack test results are accepted by NYSDEC, then the ERP for each contaminant may be considered established for Part 212 purposes and for calculating emissions during an excursion, except for HCl and dioxins/furans. If physical/operational changes are made to the process that could affect the ERP of contaminants, then the ERPs must be reevaluated for each production line that was changed.

Each performance test shall be conducted while operating all processes associated with the production line tested at maximum capacity/throughput/production rate. Stack test ports shall be located, and sampling shall be conducted in accordance with Reference Method 1. During the stack test, continuously monitored scrubber operating parameters, including pH of scrubber liquid at inlet and outlet, scrubber liquid flow rate into scrubber, differential pressure (dP) across the scrubber, scrubber exhaust gas flow rate, flow rate of kiln exhaust, flow rate of quench air, the total gas flow rate into scrubber, and production rate/throughput shall be recorded and submitted to NYSDEC in tabular form (raw and averaged), as part of the stack test report. Averaging of operating data shall be in accordance with this permit. This information will be used to confirm or reestablish operating limits for pH, pressure differential, flow rate and any other parameters contained in this ASF permit. Additional operations associated with PCW fiber production, including but not limited to, product usage, line speed, kiln temperatures, NaOH concentration of scrubber liquid at inlet and outlet of scrubber, etc. shall be monitored and recorded during

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the stack test and included in the stack test report upon request by NYSDEC.

A legible and complete Stack Test Report shall be submitted to NYSDEC Region 9 office within 60 days of conducting a test. The stack test report shall also include the calculation of the ERP and actual emission rate of each contaminant in pounds per hour; the removal efficiency of the wet scrubber for each contaminant; verification that the wet scrubber was operated within its operating limits; the type, height, and volume of scrubber packing and mist eliminator details, with most recent installation dates; details for the last major wet scrubber inspection and maintenance performed by the Facility or their contractor(s); details for performance evaluations of monitoring devices, 1-hr and annual ambient impacts and comparison to the SGC and AGC; a list of any contaminants that may be eliminated from testing with justification; and any additional information required by NYSDEC. If an operating limit may change based on stack test results, the new limit requested must be identified in the test report.

All operating limits derived from stack testing shall remain in effect until the results for a subsequent performance test conducted for a different operating scenario are accepted by NYSDEC. The Facility may conduct a stack test while operating the PCW process and/or wet scrubber outside of the accepted operating limits specified elsewhere in this permit with NYSDEC's approval of a Stack Test Protocol to establish new operating limits. If compliance with Part 212 requirements is demonstrated at these operating parameters, new limits may be established if NYSDEC accepts the stack test results. New limits will take effect after NYSDEC approves the stack test report. If operating limits are changed based on performance test results, then the Annual Monitoring Report shall list the existing limits, the new limits and dates the new limits took effect. Annual Monitoring Report requirements are detailed under 6 NYCRR 212-2.3(b) elsewhere in this permit.

All records listed above and any other records associated with performance tests shall be maintained onsite for a minimum of 5 years. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN
Upper Permit Limit: 2.68E-07 micrograms per cubic meter
Reference Test Method: USEPA Method 23

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Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 2-11: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-11.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001	Emission Point: 00001
Process: 100	Emission Source: 00104

Emission Unit: U-00001	Emission Point: 00001
Process: 100	Emission Source: 00108

Emission Unit: U-00001	Emission Point: 00001
Process: 100	Emission Source: 00704

Regulated Contaminant(s):
 CAS No: 007647-01-0 HYDROGEN CHLORIDE

Item 2-11.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

For each production line the Facility shall establish the scrubber liquid pH for each wet scrubber required to meet the hydrogen chloride (HCl) minimum removal efficiency (RE) of 99.5% specified in Table 2 of 6NYCRR212-2.3(b) for A-rated contaminants. The minimum pH operating limit shall be equal to the average scrubber liquid pH measured during the most recent performance test demonstrating compliance with 99.5 % RE for HCl using USEPA Reference Method 26A.

The Wet Scrubber System associated with each PCW production line consists of a packed bed wet scrubber, mist eliminator, continuous parametric monitors and recorders, and all ancillary equipment. The pH of the scrubber liquid shall be monitored, recorded, and averaged to verify compliance with the established pH limit based on a 3-hour block average. The pH limit of 8.5 pH units specified below is based on design and shall be in effect

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until the next performance test results are accepted by NYSDEC for each production line. Emission testing requirements are specified under the 6NYCRR 212-2.3(b) intermittent emission testing permit condition located elsewhere in this permit. The operating limit for the pH of the scrubber liquid shall be confirmed or reestablished during subsequent performance tests using the continuous pH monitor. Approval for lowering the pH limit requires stack testing that includes all contaminants specified by NYSDEC, with Part 212 compliance demonstration for each contaminant. If a new limit is established, based on acceptable performance test results, it will apply from the day NYSDEC accepts the performance test results. The performance test report and each Annual Monitoring Report shall include the value of the confirmed or reestablished pH operating limit for each packed bed wet scrubber and the method used to establish each limit, including all calculations and, if applicable, any assumptions made in determining the limits.

The scrubber shall be operated at or above the minimum pH limit whenever the PCW fiber production process is operating until the feed to the kiln has been cut off for a time not less than the kiln residence time. To demonstrate compliance with the pH limit, the scrubber liquid pH shall be monitored and recorded continuously, with data recording every 15 minutes. The data averaging period for compliance shall be a 3-hour block. The data recorded a minimum of once every 15-minute quadrant shall be used to calculate the arithmetic average for each clock hour to determine the 1-hour average. The 3-hour block average shall be calculated using the 1-hour averages for three contiguous clock hours to demonstrate compliance with the minimum operating limit for pH of the scrubber liquid. The continuous parameter monitoring system shall be equipped with an alarm to notify the facility operator if the scrubbing solution has a pH lower than the pH limit, if caustic solution is not flowing into the scrubber as designed, or if caustic solution is not at the necessary concentration to ensure 99.5% removal of HCl. The minimum pH controller set point shall be above the limit to allow time to avoid an excursion. If the pH of the scrubber liquid drops below the pH limit, based on a 3-hour block average, the feed to the rolling hearth kiln shall be stopped immediately and corrective action taken.

Removal of HCl from the gas stream is dependent on the concentration of sodium hydroxide in the scrubber liquid. If the pH of the monitored scrubber liquid regularly drops below the minimum pH limit, based on 3-hour block averages, then the Facility shall monitor the

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concentration of sodium hydroxide of the scrubber liquid at the inlet and outlet in a manner acceptable to NYSDEC to ensure that the scrubber is operating as it was during stack testing to achieve 99.5% removal of HCl. Any changes in parametric monitoring must be reviewed and approved by NYSDEC and will require modification of the Quality Assurance Monitoring Plan (QAMP) and the ASF permit.

Operation of the wet scrubber below the established minimum pH limit constitutes a deviation, which must be reported in the Annual HCl Capping and Monitoring Report for each instance that the minimum operating limit is not met. Details of any corrective action taken to remedy the cause of the deviation must also be included in the Annual HCl Capping Report.

The continuous parameter monitoring system for pH shall be installed, operated, calibrated, maintained, and evaluated in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration and operation of equipment/devices, monitoring, recording, scrubber liquid pH averaging (1-hr and 3-hr block), stack testing, maintenance/repair, and any other records that verify and support the establishment of and compliance with the operating limit, shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: PH
Lower Permit Limit: 8.5 pH (STANDARD) units
Reference Test Method: USEPA RM 26A
Monitoring Frequency: CONTINUOUS
Averaging Method: 3-HOUR BLOCK AVERAGE
Reporting Requirements: ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2023.
Subsequent reports are due every 12 calendar month(s).

Condition 2-12: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

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Expired by Mod 3

Item 2-12.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 001746-01-6 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 2-12.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

The PCW production rate of each line shall be monitored to verify that it does not exceed the maximum design production rate of 129 pounds per hour.

The Facility shall monitor the production rate in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP) detailed elsewhere in this permit.

All records that pertain to this monitoring requirement, including but not limited to, production records, usage records, purchase records, hours of operation, feed rates, performance test results, PCW fiber thickness, etc. shall be maintained onsite for a minimum of five years and shall be available to NYSDEC and/or USEPA representatives upon request.

Work Practice Type: PROCESS MATERIAL THRUPUT

Process Material: FIBER

Upper Permit Limit: 129 pounds per hour

Monitoring Frequency: HOURLY

Averaging Method: 1 HOUR MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

The initial report is due 1/30/2023.

Subsequent reports are due every 12 calendar month(s).

Condition 2-16: Compliance Demonstration

Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Replaced by Condition(s) 3-6

Item 2-16.1:

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The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-00001 Process: 100	Emission Point: 00001
Emission Unit: U-00001 Process: 100	Emission Point: 00002
Emission Unit: U-00001 Process: 100	Emission Point: 00003

Regulated Contaminant(s):

CAS No: 000050-00-0	FORMALDEHYDE
CAS No: 000056-23-5	CARBON TETRACHLORIDE
CAS No: 000067-66-3	CHLOROFORM
CAS No: 000074-87-3	METHYL CHLORIDE
CAS No: 000074-90-8	HYDROCYANIC ACID
CAS No: 000075-00-3	ETHANE, CHLORO
CAS No: 000075-01-4	VINYL CHLORIDE
CAS No: 000075-05-8	ACETONITRILE
CAS No: 000075-07-0	ACETALDEHYDE
CAS No: 000075-09-2	DICHLOROMETHANE
CAS No: 000075-21-8	ETHYLENE OXIDE
CAS No: 000079-01-6	TRICHLOROETHYLENE
CAS No: 000079-34-5	1,1,2,2-TETRACHLOROETHANE
CAS No: 000087-68-3	HEXACHLOROBUTADIENE
CAS No: 000107-06-2	1,2-DICHLOROETHANE
CAS No: 000108-88-3	TOLUENE
CAS No: 000108-90-7	CHLOROBENZENE
CAS No: 000118-74-1	HEXACHLOROBENZENE
CAS No: 000120-82-1	1,2,4-TRICHLOROBENZENE
CAS No: 000123-91-1	1,4-DIETHYLENE DIOXIDE
CAS No: 000630-08-0	CARBON MONOXIDE
CAS No: 001330-20-7	XYLENE, M, O & P MIXT.
CAS No: 007439-92-1	LEAD
CAS No: 007439-96-5	MANGANESE
CAS No: 007439-97-6	MERCURY
CAS No: 007440-02-0	NICKEL METAL AND INSOLUBLE

COMPOUNDS

CAS No: 007440-36-0	ANTIMONY
CAS No: 007440-38-2	ARSENIC
CAS No: 007440-43-9	CADMIUM
CAS No: 007440-47-3	CHROMIUM
CAS No: 007446-09-5	SULFUR DIOXIDE
CAS No: 007647-01-0	HYDROGEN CHLORIDE
CAS No: 007664-39-3	HYDROGEN FLUORIDE
CAS No: 007782-49-2	SELENIUM
CAS No: 007782-50-5	CHLORINE
CAS No: 0NY075-00-0	PARTICULATES
CAS No: 0NY075-00-5	PM-10
CAS No: 0NY210-00-0	OXIDES OF NITROGEN

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CAS No: 0NY998-00-0	VOC
CAS No: 018540-29-9	CHROMIUM(VI)
CAS No: 0NY075-02-5	PM-2.5
CAS No: 000608-73-1	HEXACHLOROCYCLOHEXANE - TECHNICAL
CAS No: 001746-01-6	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 2-16.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

Performance testing of each PCW production line shall be conducted in accordance with Reference Test Methods accepted by NYSDEC, as described below. The initial Part 212 full performance test for Line 5, Line 6 and Line 7 using ADIOX packing and Hastelloy/Teflon mist eliminator shall be conducted for the contaminants listed in this condition. The limit listed below applies to 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxins/furans) for the facility. This limit is based on NYSDEC's current annual guideline concentration (AGC) of 2.68E-08 ug/m³ for dioxins/furans, and is subject to change with AGC updates.

After each initial full performance test of Lines 5, 6 and 7 has been completed and NYSDEC has accepted the test results, the Facility may remove any contaminant that is not a High Toxicity Air Contaminant (Non-HTAC) from the above contaminant list if test results confirm it to be present at less than 100 lb/yr based on the emission rate potential (ERP) and 8760 hours/year of operation. In addition, any contaminant tested for but determined not present in scrubber inlet and outlet gas streams may be eliminated from the above contaminant list for Part 212 compliance if NYSDEC accepts the test results.

A second Part 212 performance test shall be conducted within 24 months of the initial full performance test. Testing for any contaminant that demonstrates an ambient impact that is 75% or less than its respective short-term and/or annual guideline concentration (SGC and/or AGC) based on two consecutive test events for the facility may be reduced to every fifth year following the last test event. The ambient impact of each contaminant shall be determined using unit impact multipliers derived from the most recent AERMOD Modeling Results accepted by NYSDEC for the applicable operating scenario. Annual testing must be conducted for any contaminant that fails to demonstrate consistent results (+/- 5%), or that has a short-term and/or annual ambient impact that exceeds 75% of its respective SGC and/or AGC, as applicable, based on all production lines.

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Testing for dioxins/furans and hydrogen chloride (HCl) at the inlet and outlet of each scrubber shall be annual for each production line. Test results for dioxins/furans using USEPA Reference Method 23 shall demonstrate compliance with the AGC for the facility. Test results for HCl using USEPA Reference Method 26A shall demonstrate a minimum of 99.5% degree of air cleaning for each production line. NYSDEC may consider reducing the frequency of testing required for these contaminants if sufficient consistent scrubber performance is demonstrated by stack test results approved by NYSDEC and compliance with Part 212 requirements is demonstrated. A formal written request for reduced testing shall be submitted to NYSDEC by the Facility, with justification and documentation supporting the reduction. NYSDEC approval of the request is required for reduced testing to take place.

The initial full performance test must be conducted within 60 days after achieving maximum production rate, but not later than 180 days after initial start-up for Line 7 and within 12 months of permit issuance for Line 5 and Line 6. A stack test protocol must be submitted to the Region 9 NYSDEC office at least 45 calendar days prior to conducting a stack test. The Facility shall notify Region 9 NYSDEC at least 7 calendar days prior to the scheduled stack test to ensure that a NYSDEC representative can be onsite to witness the performance test. If the stack test is rescheduled it must be for a date agreed upon by both NYSDEC and the Facility. Any stack testing conducted without NYSDEC involvement will not satisfy the stack testing requirements specified in this permit. The initial full compliance performance test for Line 5 and/or Line 6 may be required sooner than 12 months at NYSDEC's discretion.

Each stack test method conducted during the initial full performance test for each production line shall be conducted at the inlet and the outlet of the wet scrubber using NYSDEC accepted methods and procedures to determine the ERP and actual emission rate for each contaminant. If the stack test results are accepted by NYSDEC, then the ERP for each contaminant may be considered established for Part 212 purposes and for calculating emissions during an excursion, except for HCl and dioxins/furans. If physical/operational changes are made to the process that could affect the ERP of contaminants, then the ERPs must be reevaluated for each production line that was changed.

Each performance test shall be conducted while operating

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all processes associated with the production line tested at maximum capacity/throughput/production rate. Stack test ports shall be located, and sampling shall be conducted in accordance with Reference Method 1. During the stack test, continuously monitored scrubber operating parameters, including pH of scrubber liquid at inlet and outlet, scrubber liquid flow rate into scrubber, differential pressure (dP) across the scrubber, scrubber exhaust gas flow rate, flow rate of kiln exhaust, flow rate of quench air, the total gas flow rate into scrubber, and production rate/throughput shall be recorded and submitted to NYSDEC in tabular form (raw and averaged), as part of the stack test report. Averaging of operating data shall be in accordance with this permit. This information will be used to confirm or reestablish operating limits for pH, pressure differential, flow rate and any other parameters contained in this ASF permit. Additional operations associated with PCW fiber production, including but not limited to, product usage, line speed, kiln temperatures, NaOH concentration of scrubber liquid at inlet and outlet of scrubber, etc. shall be monitored and recorded during the stack test and included in the stack test report upon request by NYSDEC.

A legible and complete Stack Test Report shall be submitted to NYSDEC Region 9 office within 60 days of conducting a test. The stack test report shall also include the calculation of the ERP and actual emission rate of each contaminant in pounds per hour; the removal efficiency of the wet scrubber for each contaminant; verification that the wet scrubber was operated within its operating limits; the type, height, and volume of scrubber packing and mist eliminator details, with most recent installation dates; details for the last major wet scrubber inspection and maintenance performed by the Facility or their contractor(s); details for performance evaluations of monitoring devices, 1-hr and annual ambient impacts and comparison to the SGC and AGC; a list of any contaminants that may be eliminated from testing with justification; and any additional information required by NYSDEC. If an operating limit may change based on stack test results, the new limit requested must be identified in the test report.

All operating limits derived from stack testing shall remain in effect until the results for a subsequent performance test conducted for a different operating scenario are accepted by NYSDEC. The Facility may conduct a stack test while operating the PCW process and/or wet scrubber outside of the accepted operating limits specified elsewhere in this permit with NYSDEC's approval of a Stack Test Protocol to establish new operating

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limits. If compliance with Part 212 requirements is demonstrated at these operating parameters, new limits may be established if NYSDEC accepts the stack test results. New limits will take effect after NYSDEC approves the stack test report. If operating limits are changed based on performance test results, then the Annual Monitoring Report shall list the existing limits, the new limits and dates the new limits took effect. Annual Monitoring Report requirements are detailed under 6 NYCRR 212-2.3(b) elsewhere in this permit.

All records listed above and any other records associated with performance tests shall be maintained onsite for a minimum of 5 years. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN
 Upper Permit Limit: 2.67E-08 micrograms per cubic meter
 Reference Test Method: USEPA Reference Method 23 - Dioxins and Furans
 Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
 Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
 Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 2-17: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-17.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001 Process: 100	Emission Point: 00001 Emission Source: 00104
Emission Unit: U-00001 Process: 100	Emission Point: 00002 Emission Source: 00108
Emission Unit: U-00001 Process: 100	Emission Point: 00003 Emission Source: 00704
Regulated Contaminant(s): CAS No: 007647-01-0	HYDROGEN CHLORIDE

Item 2-17.2:

Compliance Demonstration shall include the following monitoring:

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Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The minimum flow rate of the scrubber liquid at the inlet is 210 gallons per minute (gpm) based on the design specifications for a minimum 99.5% degree of air cleaning for hydrogen chloride.

The results from the initial performance test conducted shall confirm that operating within this scrubber design parameter achieves the degree of air cleaning for compliance with 6NYCRR212 requirements. Emission testing requirements are specified elsewhere in this permit under 6NYCRR212-2.3(b).

The Facility may establish a new minimum flow rate operating limit as described under the 6NYCRR 212-2.3(b) intermittent emission testing permit condition located elsewhere in this permit. Approval for lowering the scrubber liquid flow rate limit requires stack testing that includes all contaminants specified by NYSDEC, with Part 212 compliance demonstration for each contaminant. The new operating limit shall be reported in the Annual Monitoring Report (Report), as described under the recordkeeping permit condition under 6NYCRR212-2.3(b). Additional annual reporting requirements are also specified under that permit condition.

The scrubber shall be operated at or above the minimum flow rate whenever the PCW fiber production process is operating until the feed to the kiln has been cut off for a time not less than the kiln residence time. To verify that the scrubbing system is operating properly, the flow rate of the scrubber liquid at the inlet to the scrubber shall be monitored continuously, with data recording at least once every 15 minutes. The data averaging period for compliance shall be a 12-hour block. The data recorded a minimum of once every 15-minute quadrant, shall be used to calculate the arithmetic average for each clock hour to determine the 1-hour average. The 12-hour block average shall be calculated using the 1-hour averages for twelve contiguous clock hours to demonstrate compliance with the minimum operating limit for total flow rate of liquid at the inlet to the scrubber.

The scrubber liquid flow rate meter shall be equipped with an alarm to alert the facility operator that the scrubber liquid flow rate has fallen below the minimum limit. The minimum flow rate set point shall be above the limit to allow time to avoid an excursion. If the minimum flow rate is not achieved, the feed to the rolling hearth kiln shall be stopped immediately and corrective action taken to

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increase the flow rate of scrubber liquid to the minimum required.

The installation, operation, calibration and maintenance of the flow sensor shall be in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: FLOW RATE
 Lower Permit Limit: 210 gallons per minute
 Monitoring Frequency: CONTINUOUS
 Averaging Method: 12-HOUR BLOCK AVERAGE
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 The initial report is due 1/30/2023.
 Subsequent reports are due every 12 calendar month(s).

Condition 2-18: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-18.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001 Process: 100	Emission Point: 00001 Emission Source: 00104
Emission Unit: U-00001 Process: 100	Emission Point: 00002 Emission Source: 00108
Emission Unit: U-00001 Process: 100	Emission Point: 00003 Emission Source: 00704
Regulated Contaminant(s): CAS No: 007647-01-0	HYDROGEN CHLORIDE

Item 2-18.2:

Permit ID: 9-1464-00323/00001

Facility DEC ID: 9146400323

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The maximum allowable pressure differential (dP) measured across the scrubber system is 5 inches of water column based on design for a minimum 99.5% degree of air cleaning for hydrogen chloride.

The results from an initial performance test for each production line shall confirm that operating within this dP limit achieves the degree of air cleaning for compliance with 6NYCRR212 requirements. Emission testing requirements are specified elsewhere in this permit under 6NYCRR212-2.3(b).

The Facility may establish a new dP operating limit as described under the 6NYCRR 212-2.3(b) intermittent emission testing permit condition located elsewhere in this permit. Approval for lowering the dP limit requires stack testing that includes all contaminants specified by NYSDEC, with Part 212 compliance demonstration for each contaminant. The new operating limit shall be reported in the Annual Monitoring Report (Report), as described under the recordkeeping permit condition under 6NYCRR212-2.3(b). Additional annual reporting requirements are also specified under that permit condition.

Each scrubber shall be operated below the maximum allowable dP whenever the PCW fiber production process is operating until the feed to the kiln has been cut off for a time not less than the kiln residence time. To verify that the scrubbing system is operating properly, the dP of the scrubber shall be monitored continuously, with data recording at least every 15 minutes. The data averaging period for compliance shall be a 12-hour block. The data recorded a minimum of once every 15-minute quadrant, shall be used to calculate the arithmetic average for each clock hour to determine the 1-hour average. The 12-hour block average shall be calculated using the 1-hour averages for twelve contiguous clock hours to demonstrate compliance with the maximum operating limit for dP across the scrubber.

The continuous parametric monitoring system shall be equipped with an alarm to alert the facility operator that the scrubber dP has exceeded the limit. The maximum dP controller set point shall be below the limit to allow time to avoid an excursion. If the maximum dP across the scrubber is exceeded, the feed to the rolling hearth kiln must be stopped immediately and corrective action taken.

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The installation, operation, calibration and maintenance of the pressure sensors shall be in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: PRESSURE DROP
 Upper Permit Limit: 5 inches of water
 Monitoring Frequency: CONTINUOUS
 Averaging Method: 12-HOUR BLOCK AVERAGE
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 The initial report is due 1/30/2023.
 Subsequent reports are due every 12 calendar month(s).

Condition 2-19: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-19.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001	Emission Point: 00001
Process: 100	Emission Source: 00104
Emission Unit: U-00001	Emission Point: 00002
Process: 100	Emission Source: 00108
Emission Unit: U-00001	Emission Point: 00003
Process: 100	Emission Source: 00704
Regulated Contaminant(s):	
CAS No: 007647-01-0	HYDROGEN CHLORIDE

Item 2-19.2:

Compliance Demonstration shall include the following monitoring:

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Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

The Facility owner or operator shall not allow the emission of any non-criteria air contaminant that is not listed in § 212-2.2 Table 2 to violate the requirements specified in Subdivision 212-2.3(b), Table 4 - Degree of Air Cleaning Required for Non-Criteria Air Contaminants, as applicable, for the environmental rating assigned to the contaminant by the department.

Based on stack tests conducted at the inlet of the wet scrubbers associated with Polycrystalline Wool (PCW) Production Line 5 (Line 5) and Line 6 at the Facility, the emission rate potential for each production line exceeds 25 pounds per hour (lbs/hr) for hydrogen chloride (HCl), a non-criteria, non-High Toxicity Air Contaminant (HTAC) contaminant. Therefore, HCl emissions are subject to the air cleaning required in Table 4. An evaluation of the HCl emissions using AERMOD dispersion model and the ERP for each line showed that the Annual Guideline Concentration (AGC) would be exceeded if HCl is controlled at 90 percent degree of air cleaning for an initial environmental rating of "B". Considering this, NYSDEC has assigned an environmental rating of "A" to HCl in accordance with DAR-1: Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212 (DAR-1). Subdivision 212-2.3(b), Table 4 specifies a minimum of 99.5 percent degree of air cleaning for compliance with 6NYCRR212 requirements for a non-criteria, A-rated air contaminant with an ERP greater than 25 pounds per hour. By complying with this 99.5 percent control requirement, the Facility will be able to maintain HCl emissions below the major source applicability threshold of 10 tpy for hazardous air pollutants (HAPs) that would require compliance with 6NYCRR Subpart 201-6 Title V Facility Permits.

To verify continuous compliance with the minimum 99.5 percent degree of air cleaning, each scrubber system shall be equipped with continuous parametric monitoring systems (CPMS) that measure operating performance indicating parameters associated with the scrubber system, including the pressure differential across the scrubber, the pH of the scrubber solution, the flow rate of the scrubber liquid at the inlet, and the flow rate of scrubber exhaust gas. Monitoring data shall be recorded and averaged as specified elsewhere in monitoring conditions in this permit for each operational limit.

Each CPMS shall be operated continuously, and measurements

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recorded whenever the scrubber is operating. Each monitor must be operated according to the Quality Assurance Monitoring Plan (QAMP) approved by NYSDEC. To prevent the release of uncontrolled emissions to the atmosphere, the processes and equipment associated with the scrubber system and the scrubber system shall be interlocked to ensure that the PCW fiber production processes cannot operate unless the scrubber system is operating according to this permit. The wet scrubber shall be operating and functioning properly prior to start-up of the PCW process and shall continue until the feed to the kiln has been cut off for not less than the kiln residence time.

Whenever the wet scrubber fails to operate in accordance with this permit to ensure 99.5 percent removal efficiency, the Facility shall report to the Department immediately by email or by telephone during normal working hours, but no later than 2 business days after the occurrence. A written report shall be submitted to the Department within 30 days of the occurrence and shall include the date(s) and times, cause and corrective action taken, an estimate of HCl emissions during the excursion (hourly and total), and if any action(s) are needed to prevent reoccurrence, the details with a timeline for completion. The estimated HCl emissions shall also be reported as part of the Annual Monitoring Report as detailed in the HCl capping permit condition under 6 NYCRR 201-6.

To verify compliance with the requirements of 212-2.3(b), Table 4, the Facility shall conduct performance tests using Reference Method 26A to determine the degree of air cleaning in terms of removal efficiency for each scrubber and to confirm the emission rate potential (ERP) and potential to emit hydrogen chloride in pounds per hour for Lines 5, 6, and 7 as described for intermittent emission testing under 6 NYCRR 212-2.3(b) elsewhere in this permit.

At all times, the wet scrubber and associated monitoring equipment shall be installed, operated, calibrated, and maintained in accordance with this permit, the QAMP, the Preventative Maintenance and Inspection Procedure (PM&IP) Plan, scrubber design, manufacturer's recommendations, and good engineering practice.

All records associated with this requirement, including, but not limited to, installation, calibration, operation, monitoring, averaging, stack testing, maintenance/repair, etc. shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the

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USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Parameter Monitored: DEGREE OF AIR CLEANING
 Lower Permit Limit: 99.5 percent degree of air cleaning or greater
 Reference Test Method: Method 26A
 Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
 Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
 Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 2-20: Compliance Demonstration
 Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-20.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

- | | |
|--|-------------------------------------|
| Emission Unit: U-00001 | Emission Point: 00001 |
| Emission Unit: U-00001 | Emission Point: 00002 |
| Emission Unit: U-00001 | Emission Point: 00003 |
| Regulated Contaminant(s):
CAS No: 001746-01-6 | 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN |

Item 2-20.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

To enhance dispersion of dioxins and furans emitted from the PCW production process, the wet scrubber associated with each production line shall be operated with a minimum exhaust flow rate of 9600 actual cubic feet per minute, based on a 12-month rolling average.

Each exhaust flow rate shall be monitored continuously by flow meter or sensor and shall be operated, maintained, and calibrated in accordance with manufacturer's recommendations/specifications. The Facility shall have a back up method to monitor flow rate such as fan amperage in case of flow meter failure.

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The continuous monitoring of flow rate shall be recorded using a data acquisition and recording system that is capable of recording values at least once per quarter clock hour. Hourly averages shall be used to calculate each daily average and the daily averages shall be used to calculate monthly averages for each calendar month. The monthly 12-month rolling average for flow rate shall be determined no more than 7 calendar days after the end of the calendar month by adding the current monthly average flow rate to the 11 previous consecutive monthly averages. The monthly and 12-month rolling averages for flow rate shall be reported in the Annual Monitoring Report due January 30 for the previous calendar year.

The installation, operation, calibration, and maintenance of the flow sensor shall be in accordance with the NYSDEC approved Quality Assurance Monitoring Plan (QAMP), manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration and operation of equipment/devices, monitoring, recording, stack testing, maintenance/repair, AERMOD results, and any other records that verify and support the establishment of and compliance with the operating limit, shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit. detailed elsewhere in this permit under 6NYCRR 212-2.3(b).

Parameter Monitored: FLOW RATE

Lower Permit Limit: 9600 cubic feet per minute

Reference Test Method: USEPA Method 2

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: 12-month rolling average

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

The initial report is due 1/30/2023.

Subsequent reports are due every 12 calendar month(s).

Condition 2-21: Compliance Demonstration

Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

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Expired by Mod 3**Item 2-21.1:**

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

Emission Unit: U-00001

Emission Point: 00003

Process: 100

Regulated Contaminant(s):

CAS No: 001746-01-6

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 2-21.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

To maintain the ambient concentration of dioxins/furans to less than the annual guideline concentration (AGC) of 2.68E-08 ug/m³, the Facility shall operate Production Line 7 at 1320 hours per year or less.

The Facility evaluated the impact from dioxins/furans using the AERMOD dispersion model and an emission rate for each production line of 3.28 E-08 lb dioxins/furans per hour. The emission rate evaluated was determined during the August 2021 Stack Test of Production Line 5 using Reference Method 23—Determination of Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources. The ambient impact of dioxins/furans at 3.28 E-08 lb dioxins/furans per hour did not demonstrate compliance with the AGC, therefore a restriction on hours of operation to meet the AGC is required. The Facility shall operate Production Line 7 at 1320 hours/year or less until compliance with the AGC can be demonstrated using control equipment that NYSDEC considers Toxic-Best Available Control Technology for the removal of dioxins/furans.

To demonstrate compliance with the limit of 1320 operating hours for each line, the Facility shall continuously monitor and record the hours of operation for Production Line 7 using a supervisory control and data acquisition system. Within 7 calendar days after the last day of each month, the monthly hours of operation for Line 7 shall be tallied, added to the previous monthly totals for the calendar year, and compared to the annual limit. By January 7 of the next calendar year, the 12-month total for the previous calendar year shall be computed, recorded as described above and compared to the limit. The monthly hours of operation and the annual total hours of operation for Line 7 shall be reported in the Annual Monitoring

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Report due January 30 for the previous calendar year.

The installation, operation, calibration and maintenance of the hour meter shall be in accordance with the NYSDEC approved QAMP, manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

All records associated with this requirement, including, but not limited to, installation, calibration and operation of equipment/devices, monitoring, recording, stack testing, maintenance/repair, AERMOD results, and any other records that verify and support the establishment of and compliance with the operating limit, shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Work Practice Type: HOURS PER YEAR OPERATION
 Upper Permit Limit: 1320 hours per year
 Monitoring Frequency: HOURLY
 Averaging Method: ANNUAL TOTAL
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 The initial report is due 1/30/2023.
 Subsequent reports are due every 12 calendar month(s).

Condition 2-22: Compliance Demonstration
Effective between the dates of 06/10/2022 and Permit Expiration Date

Applicable Federal Requirement:

Expired by Mod 3

Item 2-22.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-00001
 Process: 100

Emission Point: 00001

Emission Unit: U-00001
 Process: 100

Emission Point: 00002

Regulated Contaminant(s):
 CAS No: 001746-01-6

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

Item 2-22.2:

Permit ID: 9-1464-00323/00001

Facility DEC ID: 9146400323

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

To maintain the ambient concentration of dioxins/furans to less than the annual guideline concentration (AGC) of $2.68E-08$ ug/m³, the Facility shall operate Production Lines 5 and 6 at 7440 hours per year or less, each.

The Facility evaluated the impact from dioxins/furans using the AERMOD dispersion model and an emission rate for each production line of $3.28 E-08$ lb dioxins/furans per hour. The emission rate evaluated was determined during the August 2021 Stack Test of Production Line 5 using Reference Method 23—Determination of Polychlorinated Dibenzo-P-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources. The ambient impact of dioxins/furans at $3.28 E-08$ lb dioxins/furans per hour did not demonstrate compliance with the AGC, therefore a restriction on hours of operation to meet the AGC is required. The Facility shall operate Production Line 5 and Production Line 6 at 7440 hours/year or less until compliance with the AGC can be demonstrated using control equipment that NYSDEC considers Toxic-Best Available Control Technology for the removal of dioxins/furans.

To demonstrate compliance with the limit of 7440 operating hours for each line, the Facility shall continuously monitor and record the hours of operation for Production Line 5 and Production Line 6 using a supervisory control and data acquisition system. Within 7 calendar days after the last day of each month, the monthly hours of operation for each production line shall be tallied, added to the previous monthly totals for the calendar year, and compared to the annual limit. By January 7 of the next calendar year, the 12-month total for the previous calendar year shall be computed, recorded as described above and compared to the limit. The monthly hours of operation and the annual total hours of operation for Line 5 and Line 6 shall be reported in the Annual Monitoring Report due January 30 for the previous calendar year.

The installation, operation, calibration and maintenance of the hour meter shall be in accordance with the NYSDEC approved QAMP, manufacturer's recommendations/specifications, good engineering principles and practices to minimize air pollution, and this permit.

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All records associated with this requirement, including, but not limited to, installation, calibration and operation of equipment/devices, monitoring, recording, stack testing, maintenance/repair, AERMOD results, and any other records that verify and support the establishment of and compliance with the operating limit, shall be maintained onsite for a minimum of 5 years and shall be available for review by NYSDEC and/or the USEPA upon request. Additional recordkeeping requirements apply and are specified in a recordkeeping/maintenance procedures permit condition under 6 NYCRR 212-2.3(b) elsewhere in this permit.

Work Practice Type: HOURS PER YEAR OPERATION

Upper Permit Limit: 7440 hours per year

Monitoring Frequency: HOURLY

Averaging Method: ANNUAL TOTAL

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

The initial report is due 1/30/2023.

Subsequent reports are due every 12 calendar month(s).

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STATE ONLY ENFORCEABLE CONDITIONS****** Facility Level ********NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS**

This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined in 6 NYCRR subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the department for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) an emergency occurred and that the facility owner or operator can identify the cause(s) of the emergency;

(2) the equipment at the facility was being properly operated and maintained;

(3) during the period of the emergency the facility owner or operator took all reasonable steps to minimize the levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) the facility owner or operator notified the department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.

(b) In any enforcement proceeding, the facility owner or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or malfunction provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)

Where facility owners and/or operators keep records pursuant to compliance with the requirements of 6 NYCRR Subpart 201-5.4, and/or the emission capping requirements of 6 NYCRR Subpart 201-7, the Department will make such records available to the public upon request in accordance

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with 6 NYCRR Part 616 - Public Access to Records.
Facility owners and/or operators must submit the records
required to comply with the request within sixty working
days of written notification by the Department.

Item C: **General Provisions for State Enforceable Permit Terms and
Condition - 6 NYCRR Part 201-5**

Any person who owns and/or operates stationary sources
shall operate and maintain all emission units and any
required emission control devices in compliance with all
applicable Parts of this Chapter and existing laws, and
shall operate the facility in accordance with all
criteria, emission limits, terms, conditions, and
standards in this permit. Failure of such person to
properly operate and maintain the effectiveness of such
emission units and emission control devices may be
sufficient reason for the Department to revoke or deny a
permit.

The owner or operator of the permitted facility must
maintain all required records on-site for a period of five
years and make them available to representatives of the
Department upon request. Department representatives must
be granted access to any facility regulated by this
Subpart, during normal operating hours, for the purpose of
determining compliance with this and any other state and
federal air pollution control requirements, regulations or
law.

STATE ONLY APPLICABLE REQUIREMENTS

The following conditions are state only enforceable.

Condition 8: Contaminant List
Effective between the dates of 03/31/2017 and Permit Expiration Date

Applicable State Requirement: ECL 19-0301

Item 8.1:

Emissions of the following contaminants are subject to contaminant specific requirements in
this permit (emission limits, control requirements or compliance monitoring conditions).

CAS No: 000050-00-0
Name: FORMALDEHYDE

CAS No: 000056-23-5
Name: CARBON TETRACHLORIDE

CAS No: 000067-66-3
Name: CHLOROFORM

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CAS No: 000074-87-3
Name: METHYL CHLORIDE

CAS No: 000074-90-8
Name: HYDROCYANIC ACID

CAS No: 000075-00-3
Name: ETHANE, CHLORO

CAS No: 000075-01-4
Name: VINYL CHLORIDE

CAS No: 000075-05-8
Name: ACETONITRILE

CAS No: 000075-07-0
Name: ACETALDEHYDE

CAS No: 000075-09-2
Name: DICHLOROMETHANE

CAS No: 000075-21-8
Name: ETHYLENE OXIDE

CAS No: 000079-01-6
Name: TRICHLOROETHYLENE

CAS No: 000079-34-5
Name: 1,1,2,2-TETRACHLOROETHANE

CAS No: 000087-68-3
Name: HEXACHLOROBUTADIENE

CAS No: 000107-06-2
Name: 1,2-DICHLOROETHANE

CAS No: 000108-88-3
Name: TOLUENE

CAS No: 000108-90-7
Name: CHLOROBENZENE

CAS No: 000118-74-1
Name: HEXACHLOROBENZENE

CAS No: 000120-82-1
Name: 1,2,4-TRICHLOROBENZENE

CAS No: 000123-91-1
Name: 1,4-DIETHYLENE DIOXIDE

CAS No: 000608-73-1

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Name: HEXACHLOROCYCLOHEXANE - TECHNICAL

CAS No: 000630-08-0

Name: CARBON MONOXIDE

CAS No: 001330-20-7

Name: XYLENE, M, O & P MIXT.

CAS No: 001746-01-6

Name: 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN

CAS No: 007439-92-1

Name: LEAD

CAS No: 007439-96-5

Name: MANGANESE

CAS No: 007439-97-6

Name: MERCURY

CAS No: 007440-02-0

Name: NICKEL METAL AND INSOLUBLE COMPOUNDS

CAS No: 007440-36-0

Name: ANTIMONY

CAS No: 007440-38-2

Name: ARSENIC

CAS No: 007440-43-9

Name: CADMIUM

CAS No: 007440-47-3

Name: CHROMIUM

CAS No: 007446-09-5

Name: SULFUR DIOXIDE

CAS No: 007647-01-0

Name: HYDROGEN CHLORIDE

CAS No: 007664-39-3

Name: HYDROGEN FLUORIDE

CAS No: 007782-49-2

Name: SELENIUM

CAS No: 007782-50-5

Name: CHLORINE

CAS No: 018540-29-9

Name: CHROMIUM(VI)

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CAS No: 0NY075-00-0
Name: PARTICULATES

CAS No: 0NY075-00-5
Name: PM-10

CAS No: 0NY075-02-5
Name: PM-2.5

CAS No: 0NY210-00-0
Name: OXIDES OF NITROGEN

CAS No: 0NY998-00-0
Name: VOC

Condition 10: Emission Unit Definition
Effective between the dates of 03/31/2017 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 10.1(From Mod 3):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: U-00001

Emission Unit Description:

This emission unit includes production Line 5 and Line 6, located in Building 1 and production Line 7, located in Building 2. These production lines are identical polycrystalline wool (PCW) fiber production processes and their associated emission sources and emission source controls. Emission sources include the concentrators and concentrator vacuum pumps, the collection conveyor exhausts, and the roller hearth kilns (RHKs). Emissions from these sources are blended with ambient air to cool the gases, as necessary, before they are introduced to a dedicated packed bed wet scrubber for each PCW production line. The wet scrubbers (emission source controls) are required to remove at least 97 percent of the hydrogen chloride generated during PCW production.

Building(s): BLDG 1
BLDG 2

**** Emission Unit Level ****

Condition 22: Emission Point Definition By Emission Unit
Effective between the dates of 03/31/2017 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

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Item 22.1(From Mod 3):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-00001

Emission Point: 00001

Height (ft.): 86 Diameter (in.): 16
 NYTMN (km.): 4767.526 NYTME (km.): 182.389 Building: BLDG 1

Emission Point: 00002

Height (ft.): 87 Diameter (in.): 16
 NYTMN (km.): 4767.556 NYTME (km.): 182.404 Building: BLDG 1

Emission Point: 00003

Height (ft.): 65 Diameter (in.): 16
 NYTMN (km.): 4767.566 NYTME (km.): 182.52 Building: BLDG 2

Condition 23: Process Definition By Emission Unit
Effective between the dates of 03/31/2017 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 23.1(From Mod 3):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-00001

Process: 100

Source Classification Code: 3-05-017-99

Process Description:

This process is the production of polycrystalline wool (PCW) fiber on any of three identical production lines - Line 5 and Line 6, located in Building 1 and Line 7, located in Building 2. The process for each line begins with the mixing of aluminum chlorohydrate, colloidal silica, polyvinyl alcohol, and defoamer. The mixture is heated in a steam-jacketed vessel under vacuum. The vacuum exhaust is ducted to a scrubber. The solution is cooled, and the viscosity adjusted with water, after which it is distributed to a series of "spinners" (centrifuges) that create the fiber. The fiber is dried with hot air and transferred to a collection conveyor. The air from the collection conveyor is also ducted to the scrubber. The fiber is then compressed by a series of steam rolls using steam from the associated natural gas-fired boiler. The compressed fiber is transferred to the roller hearth kiln (RHK) for heat treatment. The exhaust from each RHK is quenched with ambient air, as needed, then ducted to a dedicated packed bed wet scrubber. After heat treatment, the fiber is trimmed, and green food coloring is applied to differentiate the top from the bottom. The finished product is then rolled for shipment. The maximum production capacity of each PCW line is 129 pounds per hour.

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Emission Source/Control: 00104 - Control
Control Type: SCRUBBER - PACKED BED

Emission Source/Control: 00108 - Control
Control Type: SCRUBBER - PACKED BED

Emission Source/Control: 00704 - Control
Control Type: SCRUBBER - PACKED BED

Emission Source/Control: 00101 - Process

Emission Source/Control: 00102 - Process

Emission Source/Control: 00103 - Process

Emission Source/Control: 00105 - Process

Emission Source/Control: 00106 - Process

Emission Source/Control: 00107 - Process

Emission Source/Control: 00701 - Process

Emission Source/Control: 00702 - Process

Emission Source/Control: 00703 - Process

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