PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 9-2911-00068/00133
Effective Date: 07/17/2018 Expiration Date: 07/16/2028

Permit Issued To:OLIN CORP
90 CARONDELET PLAZA STE 153
SAINT LOUIS, MO 63105

Facility: OLIN CORPORATION CHLOR-ALKALI PRODUCTS
2400 BUFFALO AVE
NIAGARA FALLS, NY 14303

Contact: ROB MEYER
OLIN CHLOR ALKALI DIV
2400 BUFF AVE PO BOX 748
NIAGARA FALLS, NY 14303-0748

Description:
Olin Corporation Chlor-Alkali Products is located at 2400 Buffalo Avenue in the City of Niagara Falls, New York. The chlor alkali manufacturing facility produces chlorine, sodium hydroxide, hydrogen, hydrochloric acid and sodium hypochlorite. Chlorine is produced using 12 membrane electrolyzers. Sodium hydroxide is produced at 33% concentration and is evaporated to 50% concentration. Chlorine is liquefied and a portion is utilized on site to manufacture sodium hypochlorite and hydrochloric acid.

This permitting action is for the modification of the hydrogen chloride synthesis units and to add an expiration date to the permit. The permit is being issued as a permit renewal to add the expiration date.

This permit will authorize a project to update the facility's hydrogen chloride (HCl) synthesis units (Emission Unit A-00001, Process A05) by replacing the first stage process vessel (furnace and absorber) of each HCl synthesis unit, which is considered a minor modification. The new replacement furnaces and absorbers will operate the same as the current furnaces and absorbers but will allow for an approximate 20% increase in HCl production capacity. The project will also include enhanced air pollution control for the units with the installation of new caustic scrubbers. The emissions from this project were analyzed according to 6 NYCRR Part 212 using AERSCREEN. The predicted ambient air concentrations of chlorine and hydrogen chloride from this project are less

than 1% of the respective SGC's and AGC's, which demonstrates compliance with Part 212.

The facility is a synthetic minor source and not subject to Title V permitting requirements. The facility has emissions caps that limit the annual potential-to-emit (PTE) of carbon monoxide (CO) and oxides of nitrogen (NOx) below the major source thresholds of 100 tons per year, each. This permit updates the capping descriptions which explain how carbon monoxide and oxides of nitrogen emissions are tracked to demonstrate compliance with the existing emission caps but does not change the numerical emission caps. The allowable sulfur content for distillate oil under 6 NYCRR 225-1.2 is updated to the current limit of 0.0015% by weight. Monitoring conditions for existing process sources in Emission Unit A-00001 which were included in the previous permit under an older version of 6 NYCRR Part 212 are carried over into this permit under updated Part 212-2 citations.

An April 6, 2018 letter notified the facility that an air state facility application providing a complete update of their permit, including a review under New York State's Air Toxics Program which is principally contained in 6 NYCRR Part 212, General Process Emission Sources, must be submitted to the Department no later than October 1, 2018.

There are seven emission units for this permit which include:

Emission Unit A-00001: Contains processing equipment utilized to liquefy chlorine, produce hydrochloric acid, produce raw bleach and scrub chlorine from chlorine liquefaction tail gas and miscellaneous vent streams.

Emission Unit A-00002: Contains processing equipment utilized to remove impurities from sodium chloride brine prior to electrolysis.

Emission Unit A-00003: Consists of an ion exchange system and associated process tanks. The ion exchange system is utilized to soften brine to the level required for membrane cell operation.

Emission Unit A-00004: Consists of storage tanks associated with the HCl synthesis unit. These include an acid condensate tank and a scrubber surge tank.

Emission Unit A-00005: Contains processing equipment utilized in the concentration and storage of sodium hydroxide. The sodium hydroxide evaporation system and storage tanks are vented to the atmosphere.

Emission Unit A-00006: Contains processing equipment utilized to process hydrogen. The hydrogen is produced in the 12 membrane electrolyzers.

Emission Unit A-00007: Contains two 75,000 lb/hr 150 psig steam package boilers (rate at 90 MMBtu/hr each) which provide all the steam for the plant site. They can burn hydrogen, natural gas and #2 fuel oil separately and in combination. Typically, hydrogen and natural gas will be burned together.

Olin must also comply with 40 CFR 82 requirements for refrigerants purchased.

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: MARK F PASSUITE
NYSDEC - REGION 9
270 MICHIGAN AVE
BUFFALO, NY 14203-2915

Authorized Signature: _____ Date: ___ / ___ / _____

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.

LIST OF CONDITIONS

DEC GENERAL CONDITIONS
General Provisions
Facility Inspection by the Department
Relationship of this Permit to Other Department Orders and Determinations
Applications for permit renewals, modifications and transfers
Permit modifications, suspensions or revocations by the Department
Facility Level
Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS

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 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:
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.

Item3.2:
The permittee must submit a renewal application at least 180 days before the expiration of permits for Title V and State Facility Permits.

Item 3.3
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.

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 5: Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 5.1:
Submission of applications for permit modification or renewal are to be submitted to:

NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

IDENTIFICATION INFORMATION

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90 CARONDELET PLAZA STE 153
SAINT LOUIS, MO 63105

Facility: OLIN CORPORATION CHLOR-ALKALI PRODUCTS
2400 BUFFALO AVE
NIAGARA FALLS, NY 14303

Authorized Activity By Standard Industrial Classification Code:
2812 - ALKALIES AND CHLORINE
2819 - INDUSTRIAL INORGANIC CHEMICALS

Permit Effective Date: 07/17/2018 Permit Expiration Date: 07/16/2028

LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS
Facility Level

1 40CFR 82, Subpart F: Recycling and Emissions Reduction
2 6 NYCRR 201-7.1: Facility Permissible Emissions
*3 6 NYCRR 201-7.1: Capping Monitoring Condition
*4 6 NYCRR 201-7.1: Capping Monitoring Condition
5 6 NYCRR 211.1: Air pollution prohibited
6 6 NYCRR 225-1.2 (h): Compliance Demonstration
7 6 NYCRR 227-1.3 (a): Compliance Demonstration

STATE ONLY ENFORCEABLE CONDITIONS
Facility Level

8 ECL 19-0301: Contaminant List
9 6 NYCRR 201-1.4: Malfunctions and start-up/shutdown activities
10 6 NYCRR Subpart 201-5: Emission Unit Definition
11 6 NYCRR 201-5.2 (c): Renewal deadlines for state facility permits
12 6 NYCRR 201-5.3 (c): Compliance Demonstration
13 6 NYCRR 211.2: Visible Emissions Limited

Emission Unit Level

14 6 NYCRR Subpart 201-5: Emission Point Definition By Emission Unit
15 6 NYCRR Subpart 201-5: Process Definition By Emission Unit

EU=A-00001,Proc=A01

16 6 NYCRR 212-2.3 (b): Compliance Demonstration

EU=A-00001,Proc=A02

17 6 NYCRR 212-2.3 (b): Compliance Demonstration

EU=A-00001,Proc=A03

18 6 NYCRR 212-2.3 (b): Compliance Demonstration
19 6 NYCRR 212-2.3 (b): Compliance Demonstration

EU=A-00001,Proc=A04

20 6 NYCRR 212-2.3 (b): Compliance Demonstration

EU=A-00001,Proc=A05

21 6 NYCRR Subpart 201-5: Compliance Demonstration
22 6 NYCRR Subpart 212-2: Compliance Demonstration
23 6 NYCRR 212-2.3 (b): Compliance Demonstration

EU=A-00001,EP=36701,Proc=A05

24 6 NYCRR 212-2.3 (b): Compliance Demonstration

NOTE: * preceding the condition number indicates capping.

FEDERALLY ENFORCEABLE CONDITIONS
****** 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,

required to operate such device effectively.

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

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

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**

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)**

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: **Recycling and Emissions Reduction**
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:40CFR 82, Subpart F

Item 1.1:
The permittee shall comply with all applicable provisions of 40 CFR Part 82.

Condition 2: **Facility Permissible Emissions**
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 2.1:
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: 000630-08-0 PTE: 199,999 pounds per year
Name: CARBON MONOXIDE

CAS No: 0NY210-00-0 PTE: 199,999 pounds per year
Name: OXIDES OF NITROGEN

Condition 3: **Capping Monitoring Condition**
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 3.1:
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 3.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 3.3:
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 3.4:
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 3.5:
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 3.6:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 3.7:
Compliance Demonstration shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The facility shall not exceed a total annual oxides of nitrogen (NOx) emission rate of 100 tons per year during any consecutive twelve month period. The facility will summarize facility-wide NOx emissions (on a 12-month rolling basis) from all combustion sources. NOx emissions from the Emission Unit A-00007 boilers will be tracked via monthly fuel usages and manufacturer-supplied NOx emission factors. Records shall be maintained at the facility for a period of five years and shall be available to the Department upon request. On an annual basis, report the 12-month rolling total NOx emissions compared to the 12-month rolling total limit to the DEC Region 9 Regional Air Pollution Control Engineer.

Parameter Monitored: OXIDES OF NITROGEN
Upper Permit Limit: 100 tons per year
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 1/30/2019.
Subsequent reports are due every 12 calendar month(s).

Condition 4: Capping Monitoring Condition
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 4.1:
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 4.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4.3:
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 4.4:
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 4.5:
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 4.6:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 000630-08-0 CARBON MONOXIDE

Item 4.7:
Compliance Demonstration shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The facility shall not exceed a total annual carbon monoxide (CO) emission rate of 100 tons per year during any consecutive twelve month period. The facility will calculate annual CO emissions (on a 12-month rolling basis) from Processes A05 (HCl Synthesis Units) and A62 (boilers) by summing CO monthly emissions. CO emissions for Process A05 will be based on daily records of excess carbonate in brine, brine degassing, and chlorine flow. CO emissions for Process A62 will be based on natural gas and hydrogen consumption (from monthly meter readings) and manufacturer-supplied CO emission factors. Records shall be maintained at the facility for a period of five years and shall be available to the Department upon request. On an annual basis, report the 12-month rolling total CO emissions compared to the 12-month rolling total limit to the DEC Region 9 Regional Air Pollution Control Engineer.

Parameter Monitored: CARBON MONOXIDE
Upper Permit Limit: 100 tons per year
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 1/30/2019.
Subsequent reports are due every 12 calendar month(s).

Condition 5: Air pollution prohibited
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 211.1

Item 5.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

Condition 6: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 225-1.2 (h)

Item 6.1:
The Compliance Demonstration activity will be performed for the Facility.

Item 6.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS
Monitoring Description:
Owners and/or operators of a stationary combustion installations that fire distillate oil are limited to the firing of distillate oil with 0.0015 percent sulfur by weight or less on or after July 1, 2016. Compliance with this limit will be based on vendor certifications.

Data collected pursuant to this Subpart must be tabulated and summarized in a form acceptable to the Department, and must be retained for at least five years. The owner of a Title V facility must furnish to the Department such records and summaries, on a semiannual calendar basis, within 30 days after the end of the semiannual period. All other facility owners or distributors must submit these records and summaries upon request of the Department.

Work Practice Type: PARAMETER OF PROCESS MATERIAL
Process Material: DISTILLATES - NUMBER 1 AND NUMBER 2 OIL
Parameter Monitored: SULFUR CONTENT
Upper Permit Limit: 0.0015 percent by weight
Monitoring Frequency: PER DELIVERY
Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB)
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 7: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable Federal Requirement:6 NYCRR 227-1.3 (a)

Item 7.1:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 7.2:
Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

No person shall operate a stationary combustion installation which exhibits greater than 20 percent opacity (six minute average), except for one six minute per hour of not more than 27 percent opacity

Parameter Monitored: OPACITY
Upper Permit Limit: 27 percent
Reference Test Method: 40 CFR 60 Appendix B
Monitoring Frequency: CONTINUOUS
Averaging Method: 6 MINUTE AVERAGE
Reporting Requirements: QUARTERLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 10/30/2018.
Subsequent reports are due every 3 calendar month(s).

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 by 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 be demonstrated 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 permitted facility causing the emergency was at the time being properly operated and maintained;
(3) During the period of the emergency the facility owner or operator took all reasonable steps to minimize 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 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 upset 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 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 07/17/2018 and 07/16/2028

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: 000630-08-0
Name: CARBON MONOXIDE

CAS No: 007647-01-0
Name: HYDROGEN CHLORIDE

CAS No: 007782-50-5
Name: CHLORINE

CAS No: 0NY075-00-0

Name: PARTICULATES

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

Condition 9: **Malfunctions and start-up/shutdown activities**
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR 201-1.4

Replaces Condition(s) 28

Item 9.1:
(a) The facility owner or operator shall take all necessary and appropriate actions to prevent the emission of air pollutants that result in contravention of any applicable emission standard during periods of start-up, shutdown, or malfunction.

(b) The facility owner or operator shall compile and maintain records of all equipment malfunctions, maintenance, or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when requested to do so, or when so required by a condition of a permit issued for the corresponding air contamination source. Such reports shall state whether any violations occurred and, if so, whether they were unavoidable, include the time, frequency and duration of the maintenance and/or start-up/shutdown activities, and an estimate of the emission rates of any air contaminants released. Such records shall be maintained for a period of at least five years and made available for review to department representatives upon request. Facility owners or operators subject to continuous stack monitoring and quarterly reporting requirements need not submit additional reports for equipment maintenance or start-up/shutdown activities for the facility to the department.

(c) In the event that emissions of air contaminants in excess of any emission standard in this Subchapter occur due to a malfunction, the facility owner or operator shall compile and maintain records of the malfunction and notify the department as soon as possible during normal working hours, but not later than two working days after becoming aware that the malfunction occurred. When requested by the department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates.

(d) The department may also require the owner or operator to include, in reports described under Subdivisions (b) and (c) of this Section, an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions.

(e) A violation of any applicable emission standard resulting from start-up, shutdown, or malfunction conditions at a permitted or registered facility may not be subject to an enforcement action by the department and/or penalty if the department determines, in its sole discretion, that such a violation was unavoidable. The actions and recordkeeping and reporting requirements listed above must be adhered to in such circumstances.

Condition 10: **Emission Unit Definition**
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 10.1:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00001
Emission Unit Description:
Emission unit A-00001 contains processing equipment utilized to:
1) liquefy chlorine,
2) produce hydrochloric acid,
3) produce raw bleach, and
4) scrub chlorine from chlorine liquefaction tail gas and miscellaneous vent streams.

This emission unit includes six processes: A01, A02, A03, A04, A05, and A06.

Chlorine streams processed by this emission unit include tank car and line sniff gas, tank car vents, and chlorine cell (Olin) chlorine gas. Process activities which comprise this emission unit include: 1) tank car and line sniff gas are scrubbed using caustic solution; 2) membrane cell chlorine is liquefied by two Carrier and one FES liquefaction systems; 3) tank car vent gas can be directed to either Carrier or FES systems; 4) hydrochloric acid production furnaces; 5) raw bleach storage tanks (note: raw bleach from cisterns); 6) chlorine scrubbing system consisting of three batch caustic sparge tanks, after scrubber, and two sparge tanks with tray tower scrubbers (cisterns).

Building(s): 359
365
367
369
47
65
74
83

Item 10.2:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00002
Emission Unit Description:
EMISSION UNIT A00002 CONTAINS PROCESSING EQUIPMENT UTILIZED TO REMOVE IMPURITIES FROM SODIUM CHLORIDE BRINE PRIOR TO ELECTROLYSIS. PROCESSES WHICH COMPRISE

THIS EMISSION UNIT INCLUDE: 1) PRECOAT PREPARATION FOR BRINE FILTRATION SYSTEM. 2) REDUCING AGENT (SODIUM BISULFITE) STORAGE TANKS, 3) SODIUM CARBONATE SLURRY SYSTEM AND TANK, 4) CALCIUM CARBONATE SLUDGE DIGESTION PROCESS AND 5) SODIUM CARBONATE PRODUCTION PROCESS.

Building(s): 371
382
385

Item 10.3:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00003
Emission Unit Description:
EMISSION UNIT A00003 CONSISTS OF AN ION EXCHANGE SYSTEM AND ASSOCIATED PROCESS TANKS. THE ION EXCHANGE SYSTEM IS UTILIZED TO SOFTEN BRINE TO THE LEVEL REQUIRED FOR MEMBRANE CELL OPERATION.

Building(s): 374

Item 10.4:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00004
Emission Unit Description:
EMISSION UNIT A00004 CONSISTS OF STORAGE TANKS ASSOCIATED WITH THE HCL SYNTHESIS UNIT. THESE INCLUDE AN ACID CONDENSATE TANK AND A SCRUBBER SURGE TANK.

Building(s): 367
371

Item 10.5:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00005
Emission Unit Description:
EMISSION UNIT A00005 CONTAINS PROCESSING EQUIPMENT UTILIZED IN THE CONCENTRATION AND STORAGE OF SODIUM HYDROXIDE. THE SODIUM HYDROXIDE EVAPORATION SYSTEM (AFTER CONDENSERS ON STEAM JET EJECTORS) AND STORAGE TANKS ARE VENTED TO THE ATMOSPHERE. THE UTILIZATION OF THE EVAPORATION SYSTEM AND STORAGE TANKS RESULTS IN THE EMISSION OF REGULATED AIR POLLUTANTS AT INSIGNIFICANT EMISSION LEVELS AS DEFINED BY 6 NYCRR PART 201-6.3 (d) (7). THIS IS BASED ON A POTENTIAL TO EMIT CRITERIA

CONTAMINANTS OF LESS THAN 2.5 TONS/YEAR.

Building(s): 29
363
83

Item 10.6:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00006
Emission Unit Description:
EMISSION UNIT A00006 CONTAINS PROCESSING EQUIPMENT UTILIZED TO PROCESS HYDROGEN. THE HYDROGEN IS PRODUCED IN 12 MEMBRANE ELECTROLYZERS. THE GAS IS MAINTAINED AT A SLIGHT POSITIVE PRESSURE TO PREVENT THE INFLUX OF AIR. THE GAS IS COMPRESSED AND EITHER SENT TO USERS (SUCH AS HCL SYNTHESIS UNIT) OR IS VENTED.

Building(s): 367
369

Item 10.7:
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: A-00007
Emission Unit Description:
EMISSION UNIT A-00007 CONSISTS OF TWO 75,000 POUND PER HOUR OF 150 PSIG STEAM PACKAGED BOILERS TO PROVIDE STEAM FOR PRODUCTION OF CHLORINE AND SODIUM HYDROXIDE. THEY CAN BURN HYDROGEN, NATURAL GAS AND #2 FUEL OIL SEPARATELY AND IN COMBINATION. ONE BOILER IS SUFFICIENT TO SUPPLY THE PLANT STEAM REQUIREMENTS EXEPT FOR THE WINTER MONTHS OR IF STEAM WILL BE SOLD WHEN BOTH BOILERS WILL BE REQUIRED. THE BOILERS WILL OPERATE SLIGHTLY ABOVE 50% CAPACITY WHEN BOTH ARE OPERATED. STEAM GENERATED MAY BE SOLD TO NEARBY FACILITIES IF YEARLY (NOX) LIMITS ARE MAINTAINED.

Building(s): 391

Condition 11: Renewal deadlines for state facility permits
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR 201-5.2 (c)

Item 11.1:
The owner or operator of a facility having an issued state facility permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit

expiration for permit renewal purposes.

Condition 12: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR 201-5.3 (c)

Item 12.1:
The Compliance Demonstration activity will be performed for the Facility.

Item 12.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Any reports or submissions required by this permit shall be submitted to the Regional Air Pollution Control Engineer (RAPCE) at the following address:

Division of Air Resources
NYS Dept. of Environmental Conservation
Region 9
270 Michigan Ave.
Buffalo, NY 14203

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 13: Visible Emissions Limited
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR 211.2

Item 13.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

****** Emission Unit Level ******

Condition 14: Emission Point Definition By Emission Unit
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 14.1:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00001

Emission Point: 00017
Height (ft.): 50 Diameter (in.): 12
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 47

Emission Point: 35904
Height (ft.): 60 Diameter (in.): 23
NYTMN (km.): 4777.3 NYTME (km.): 173. Building: 359

Emission Point: 36501
Height (ft.): 26 Diameter (in.): 1
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 365

Emission Point: 36502
Height (ft.): 18 Diameter (in.): 1
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 65

Emission Point: 36503
Height (ft.): 18 Diameter (in.): 1
NYTMN (km.): 4777.602 NYTME (km.): 172.121 Building: 65

Emission Point: 36701
Height (ft.): 76 Diameter (in.): 8
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36704
Height (ft.): 75 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36705
Height (ft.): 75 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36709
Height (ft.): 60 Diameter (in.): 23
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36710
Height (ft.): 92 Diameter (in.): 10
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36711
Height (ft.): 92 Diameter (in.): 10
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36901
Height (ft.): 60 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 369

Emission Point: 74001
Height (ft.): 32 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 74

Emission Point: 74002
Height (ft.): 32 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 74

Emission Point: 83001
Height (ft.): 44 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 83

Emission Point: 83002
Height (ft.): 44 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 83

Item 14.2:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00002

Emission Point: 36601
Height (ft.): 7 Diameter (in.): 2
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 382

Emission Point: 37701
Height (ft.): 40 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 385

Emission Point: 37702
Height (ft.): 50 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 385

Emission Point: 37703
Height (ft.): 27 Diameter (in.): 12
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 371

Emission Point: 37707
Height (ft.): 30 Diameter (in.): 12
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 371

Emission Point: 37708
Height (ft.): 35 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 371

Emission Point: 37801
Height (ft.): 36 Diameter (in.): 12
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 385

Item 14.3:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00003

Emission Point: 37704
Height (ft.): 12 Diameter (in.): 3

NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 374

Emission Point: 37705
Height (ft.): 35 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 374

Emission Point: 37706
Height (ft.): 9 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 374

Emission Point: 37709
Height (ft.): 21 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 374

Item 14.4:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00004

Emission Point: 36706
Height (ft.): 3 Diameter (in.): 2
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36707
Height (ft.): 13 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36708
Height (ft.): 22 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 371

Item 14.5:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00005

Emission Point: 36801
Height (ft.): 43 Diameter (in.): 8
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 363

Emission Point: 36802
Height (ft.): 57 Diameter (in.): 2
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 363

Emission Point: 36803
Height (ft.): 38 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 363

Emission Point: 36804
Height (ft.): 25 Diameter (in.): 8
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 363

Emission Point: 36805
Height (ft.): 55 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 29

Emission Point: 36806
Height (ft.): 27 Diameter (in.): 3
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 363

Emission Point: 36807
Height (ft.): 33 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 29

Emission Point: 36808
Height (ft.): 33 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 29

Emission Point: 36809
Height (ft.): 32 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 29

Emission Point: 36810
Height (ft.): 40 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 83

Emission Point: 36811
Height (ft.): 11 Diameter (in.): 6
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 83

Item 14.6:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00006

Emission Point: 36702
Height (ft.): 71 Diameter (in.): 2
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 367

Emission Point: 36902
Height (ft.): 72 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 369

Emission Point: 45002
Height (ft.): 90 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 369

Item 14.7:
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: A-00007

Emission Point: 39101
Height (ft.): 50 Diameter (in.): 54

NYTMN (km.): 4777.3 NYTME (km.): 172.2 Building: 391

Emission Point: 39102
Height (ft.): 50 Diameter (in.): 54
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 391

Emission Point: 39103
Height (ft.): 45 Diameter (in.): 4
NYTMN (km.): 4777.7 NYTME (km.): 172.2 Building: 391

Condition 15: Process Definition By Emission Unit
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 15.1:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A01
Process Description:
PROCESS A01 IS A CHLORINE SCRUBBING PROCESS WHICH IS UTILIZED TO SCRUB VARIOUS CHLORINE CONTAINING VENT STREAMS (TAIL GAS FROM SODIUM CELL AND CHLORINE CELL LIQUEFACTION SYSTEMS). THE TAIL GAS FROM THE SODIUM CELL LIQUEFACTION SYSTEM IS NORMALLY ROUTED TO THE HCL FURNACES. THE CHLORINE SCRUBBING PROCESS CONSISTS OF THREE CAUSTIC SPARGE TANKS AND A CIRCULATING CAUSTIC AFTER SCRUBBER WHICH HAS FOUR LAYERS OF COUNTER DIRECTIONAL SPRAY NOZZLES. THE CAUSTIC SPARGE TANKS ARE BATCH OPERATED. AT THE BEGINNING OF ITS BATCH CYCLE EACH CAUSTIC SPARGE TANK IS CHARGED WITH FRESH CAUSTIC SOLUTION (TYPICALLY 14-18 % BY WEIGHT SODIUM HYDROXIDE). CHLORINE IS VENTED TO A SPARGE TANK UNTIL THE CAUSTIC CONCENTRATION IS DEPLETED TO APPROXIMATELY 1 PERCENT. THE ON LINE SPARGE TANK IS VENTED TO THE CAUSTIC AFTER SCRUBBER FOR REMOVAL OF ADDITIONAL CHLORINE PRIOR TO ATMOSPHERIC VENTING. THE AFTER SCRUBBER HAS BEEN DESIGNED TO HANDLE THE ENTIRE CHLORINE LOADING TO THE SPARGE TANK IF A PROBLEM SHOULD OCCUR. WHEN THE CAUSTIC CONCENTRATION IN A SPARGE TANK REACHES 1 PERCENT, THE TANK IS TAKEN OFF LINE AND THE CHLORINE FLOW IS DIVERTED TO ANOTHER SPARGE TANK WHICH CONTAINS FRESH CAUSTIC SOLUTION. A CATALYST IS PRESENT IN THE CONTENTS OF

THE OFF LINE SPARGE TANK TO AID IN THE DECOMPOSITION OF SODIUM HYPOCHLORITE TO SODIUM CHLORIDE. UPON COMPLETION OF THE DECOMPOSITION PROCESS, THE CONTENTS OF THE SPARGE TANK WILL BE RECYCLED TO OLINS BRINE SYSTEM.

Emission Source/Control: A0108 - Control
Control Type: SODIUM-ALKALI SCRUBBING

Emission Source/Control: A0101 - Process

Emission Source/Control: A0102 - Process

Emission Source/Control: A0103 - Process

Emission Source/Control: A0104 - Process

Emission Source/Control: A0105 - Process
Design Capacity: 24,000 gallons

Emission Source/Control: A0106 - Process
Design Capacity: 24,000 gallons

Emission Source/Control: A0107 - Process
Design Capacity: 24,000 gallons

Item 15.2:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A02
Process Description:
PROCESS A02 IS A CHLORINE SCRUBBING PROCESS WHICH IS UTILIZED TO SCRUB VARIOUS CHLORINE CONTAINING VENT STREAMS (PURGE STREAM GENERATED BY MEMBRANE ELECTROLYZERS DURING START-UP AND VENT STREAM ASSOCIATED WITH THE DEPLETED BRINE VACUUM DECHLORINATION SYSTEM). THE CHLORINE SCRUBBING PROCESS CONSISTS OF A CIRCULATING CAUSTIC SPRAY TOWER TYPE SCRUBBER. THE PURGE STREAM GENERATED BY THE ELECTROLYZERS TYPICALLY LASTS APPROXIMATELY 30 MINUTES DURING EACH START-UP. THE DEPLETED BRINE FROM THE ELECTROLYTIC CELLS IS DECHLORINATED BY THE USE OF VACUUM JETS OR A VACUUM PUMP.

Emission Source/Control: A0203 - Control
Control Type: SODIUM-ALKALI SCRUBBING

Emission Source/Control: A0201 - Process

Emission Source/Control: A0202 - Process

Item 15.3:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A03
Process Description:
PROCESS A03 IS A CHLORINE SCRUBBING PROCESS WHICH IS UTILIZED TO SCRUB VARIOUS CHLORINE CONTAINING VENT STREAMS WHICH INCLUDE THE FOLLOWING: 1) TAIL GASES FROM CHLORINE LIQUEFACTION WHEN THE HCL SYNTHESIS UNITS ARE NOT IN OPERATION, 2) SNIFF GAS COLLECTED FROM POINTS THAT ARE POTENTIAL SOURCES OF FUGITIVE CHLORIDE EMISSIONS, 3) SNIFF GAS COLLECTED FROM CHLORINE TANK CARS, 4) SULFURIC ACID STRIPPING AIR WHICH CONTAINS CHLORINE (ENTERS BELOW TRAY TOWERS ON CISTERNS). THE CHLORINE CONTAINING VENT STREAMS WITH THE EXCEPTION OF #4, ARE SPARGED INTO THE CISTERNS AND THEN THROUGH THE CASCADE TRAY TOWER TYPE CAUSTIC SCRUBBER . THE TWO CISTERNS AND SCRUBBER ARE IN PARALLEL AND ARE OPERATED ALTERNATELY.

Emission Source/Control: A0305 - Control
Control Type: SODIUM-ALKALI SCRUBBING

Emission Source/Control: A0306 - Control
Control Type: SODIUM-ALKALI SCRUBBING

Emission Source/Control: A0301 - Process

Emission Source/Control: A0302 - Process

Emission Source/Control: A0303 - Process

Emission Source/Control: A0304 - Process

Item 15.4:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A04
Process Description:
PROCESS A04 IS A CHLORINE SCRUBBING PROCESS WHICH IS UTILIZED TO SCRUB VARIOUS CHLORINE CONTAINING VENT STREAMS ASSOCIATED

WITH THE SODIUM HYPOCHLORITE PRODUCTION FACILITY. THESE STREAMS INCLUDE VENTS FROM (2) SODIUM HYPOCHLORITE PRODUCTION TANKS, (3) SODIUM HYPOCHLORITE STORAGE TANKS, AND A REWORK STORAGE TANK. THE CHLORINE SCRUBBING PROCESS CONSISTS OF A CIRCULATING PACKED TOWER TYPE SCRUBBER. IF THE CONTENTS OF A SODIUM HYPOCHLORITE PRODUCTION BATCH IS OVER CHLORINATED THEN CHLORINE BREAKTHROUGH WILL OCCUR. THIS CHLORINE WILL BE VENTED TO THE SCRUBBER. TWO RAW BLEACH TANKS (WEAK CAUSTIC AND CISTERN BLEACH) PROVIDE FEED STOCK TO THE PRODUCTION TANKS. THESE TANKS VENT TO THE ATMOSPHERE.

Emission Source/Control: A0407 - Control
Control Type: SODIUM-ALKALI SCRUBBING

Emission Source/Control: A0401 - Process

Emission Source/Control: A0402 - Process

Emission Source/Control: A0403 - Process

Emission Source/Control: A0404 - Process

Emission Source/Control: A0405 - Process

Emission Source/Control: A0406 - Process

Emission Source/Control: A0408 - Process

Emission Source/Control: A0409 - Process

Emission Source/Control: A0410 - Process

Item 15.5:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A05
Process Description:
Process A05 includes two identical Hydrogen Chloride (HCl) synthesis units (No. 1 and No. 2, corresponding to emission points EP 36704 and EP 36705), which are operated in parallel. In each two-stage synthesis unit, chlorine liquefaction tail gas and supplemental product chlorine and hydrogen are reacted. Stage One contains a furnace, which reacts chlorine and hydrogen to form gaseous HCl (A0503, A0507) and an absorber (A0504, A0508) which produces aqueous HCl by absorbing gaseous HCl in water.

Stage Two uses fresh water to remove traces of HCl in a tail gas scrubber tower (A0505, A0509) which vents to the atmosphere (EP 36704 and EP 36705).

Olin is in the process of phasing out the two first stage process vessels (furnace and absorber) from the current HCl synthesis units. The new replacement furnaces (A0513, A0516) and absorbers (A0514, A0517) will operate the same as the current furnaces and absorbers.

The capacity of the replacement furnaces/absorbers will be approximately 20 percent greater than the capacity of the current furnaces/absorbers. The existing tail gas scrubber towers (A0505, A0509) will continue to be utilized with the new replacement furnaces/absorbers. In addition, new caustic scrubbers (A0515, A0518) will be used to substantially remove any residual HCl and chlorine that may be emitted from the exhaust of each tail gas scrubber tower. Due to the new caustic scrubbers, new stacks (EP 36710, EP 36711) will be installed for the units.

The proposed HCl synthesis project will be conducted in phases. During the first phase, Unit No. 2 will be replaced beginning in July 2018. During the second phase, Unit No. 1 will be replaced. Until the second phase commences, the facility will continue to operate Unit No. 1 as it is currently configured.

Three HCl storage tanks (A0501, A0511, A0512) are utilized for storage of acid produced in the synthesis units. The acid storage tanks are vented to a packed tower scrubber (ES A0502, EP 36701) which utilizes water for absorption of HCl.

Emission Source/Control: A0502 - Control
Control Type: PACKED-GAS ABSORPTION SYSTEM

Emission Source/Control: A0515 - Control
Control Type: SCRUBBER - PACKED BED

Emission Source/Control: A0518 - Control
Control Type: SCRUBBER - PACKED BED

Emission Source/Control: A0501 - Process
Design Capacity: 30,000 gallons

Emission Source/Control: A0503 - Process

Emission Source/Control: A0504 - Process

Emission Source/Control: A0505 - Process

Emission Source/Control: A0506 - Process

Emission Source/Control: A0507 - Process

Emission Source/Control: A0508 - Process

Emission Source/Control: A0509 - Process

Emission Source/Control: A0510 - Process

Emission Source/Control: A0511 - Process
Design Capacity: 30,000 gallons

Emission Source/Control: A0512 - Process
Design Capacity: 60,000 gallons

Emission Source/Control: A0513 - Process

Emission Source/Control: A0514 - Process

Emission Source/Control: A0516 - Process

Emission Source/Control: A0517 - Process

Item 15.6:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00001
Process: A06
Process Description:
FREON COMPOUNDS ARE UTILIZED AS REFRIGERANTS IN THE FACILITY'S PROCESSING OPERATIONS. FREON EMISSIONS AT THE FACILITY ARE PRIMARILY FUGITIVE IN NATURE AND OCCUR AS INCIDENTAL LOSSES. THE AMOUNTS OF SUCH EMISSIONS ARE ESTIMATED SOLELY ON THE BASIS OF MATERIAL BALANCES. RECORDS MAINTAINED BY OLIN PERSONNEL IN CONJUNCTION WITH THOSE PROVIDED BY SERVICE CONTRACTORS INDICATE THE AMOUNT OF REFRIGERANT ADDED TO THE VARIOUS SYSTEMS AND THE AMOUNTS RECYCLED OR RECOVERED. THE AMOUNTS OF REFRIGERANTS ADDED TO THE REFRIGERATION SYSTEMS ARE ASSUMED TO BE EQUAL TO THE AMOUNTS LOST TO THE ATMOSPHERE. OLIN WILL COMPLY WITH ALL APPLICABLE REQUIREMENTS UNDER 40 CFR 82 (STRATOSPHERIC OZONE DEPLETING SUBSTANCES). THIS WILL INCLUDE (AS APPLICABLE) PRODUCT LABELING; MAINTENANCE, SERVICE, REPAIRS, AND DISPOSAL OF REFRIGERANT CONTAINING

EQUIPMENT, APPLIANCES, AND MOTOR VEHICLES; LEAK REPAIR REQUIREMENTS; AND RECORDKEEPING REQUIREMENTS FOR REFRIGERANT PURCHASED.

Emission Source/Control: A0601 - Process

Emission Source/Control: A0602 - Process

Emission Source/Control: A0603 - Process

Item 15.7:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00002
Process: A21
Process Description:
PROCESS A21 INVOLVES THE PREPARATION OF A PRECOAT SLURRY AND BODY FEED. THIS IS TYPICALLY PREPARED TWICE PER DAY. IT IS UTILIZED TO PRECOAT PRESSURE FILTERS AND IS ALSO USED AS BODY FEED OF CHEMICALLY TREATED AND CLARIFIED BRINE. THE BAGS OF FILTER AID ARE MANUALLY PUT THROUGH A DEBAGGING DEVICE MOUNTED OVER EACH OF THE TANKS. THE DEBAGGERS ARE EQUIPPED WITH DUST COLLECTORS.

Emission Source/Control: A2103 - Control
Control Type: FABRIC FILTER

Emission Source/Control: A2106 - Control
Control Type: FABRIC FILTER

Emission Source/Control: A2101 - Process

Emission Source/Control: A2102 - Process

Emission Source/Control: A2104 - Process

Emission Source/Control: A2105 - Process

Item 15.8:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00002
Process: A22
Process Description:
PROCESS A22 INVOLVES THE DIGESTION OF CALCIUM CARBONATE SLUDGE. THE SLUDGE IS DIGESTED WITH HYDROCHLORIC ACID TO PRODUCE CALCIUM CHLORIDE. THE CARBON DIOXIDE OFF GAS WHICH CONTAINS TRACES OF HYDROGEN

CHLORIDE CAN BE VENTED TO THE ATMOSPHERE OR REACTED WITH CAUSTIC TO PRODUCE SODIUM CARBONATE.

Emission Source/Control: A2201 - Process

Item 15.9:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00002
Process: A23
Process Description:
PROCESS A23 INVOLVES THE PRODUCTION OF SODIUM CARBONATE. OFF GAS FROM THE CALCIUM CARBONATE SLUDGE DIGESTER (CONTAINING CARBON DIOXIDE AND A TRACE OF HYDROGEN CHLORIDE) IS DIRECTED TO A PACKED TOWER WHERE THE CARBON DIOXIDE CAN BE REACTED WITH SODIUM HYDROXIDE TO PRODUCE SODIUM CARBONATE. THE HYDROGEN CHLORIDE WILL ALSO REACT WITH THE CAUSTIC. THE PROCESS IS NOW INACTIVE (1/31/2001).

Emission Source/Control: A2301 - Process

Item 15.10:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00002
Process: A24
Process Description:
PROCESS A24 INCLUDES 2 SODIUM BISULFITE STORAGE TANKS (30% SOLUTION) USED AS A REDUCING AGENT IN TREATING RESIDUAL CHLORINE CONTAINED IN DEPLETED BRINE. SODIUM BISULFITE IS TRANSFERRED FROM TANK TRUCK TRAILERS INTO THE LARGER STORAGE TANK (APPROXIMATELY 6,000 GALLONS) WHICH IS EQUIPPED WITH A WATER SCRUBBER (EP 37708) FOR USE DURING TRAILER UNLOADING TO REMOVE SMALL QUANTITIES OF SULFUR DIOXIDE. THE SMALLER TANK (EP 36301) IS FILLED FROM TOTES AND IS VENTED DIRECTLY TO THE ATMOSPHERE.

Emission Source/Control: A2403 - Control
Control Type: WET SCRUBBER

Emission Source/Control: A2401 - Process
Design Capacity: 6,000 gallons

Emission Source/Control: A2402 - Process

Design Capacity: 375 gallons

Item 15.11:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00002
Process: A25
Process Description:
PROCESS A25 INCLUDES A SODIUM CARBONATE SLURRY TANK. THE SODIUM CARBONATE IS DELIVERED BY HOPPER TRUCK. THE SODIUM CARBONATE IS PNEUMATICALLY UNLOADED TO THE SLURRY TANK THROUGH A DEVICE WHICH WETS THE DRY SODIUM CARBONATE BEFORE DISCHARGE. THE TANK VENT IS PASSED THROUGH A PACKED COLUMN WET SCRUBBER PRIOR TO ATMOSPHERIC DISCHARGE.

Emission Source/Control: A2502 - Control
Control Type: WET SCRUBBER

Emission Source/Control: A2503 - Control
Control Type: WET SCRUBBER

Emission Source/Control: A2501 - Process

Item 15.12:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00003
Process: A31
Process Description:
PROCESS A31 CONTAINS PROCESS TANKS ASSOCIATED WITH AN ION EXCHANGE SYSTEM. THESE TANKS INCLUDE THE FOLLOWING: 1) HCL DILUTION TANK - STRONG HYDROCHLORIC ACID IS DILUTED TO 8% FOR USE IN REGENERATION OF ION EXCHANGE UNITS. 2) REGENERANT COLLECTION TANK - HYDROCHLORIC ACID (8%) AND WASHES (CAUSTIC, BRINE, AND WATER) GENERATED DURING ION EXCHANGE REGENERATION ARE COLLECTED IN A STORAGE TANK. AT THE END OF THE ION EXCHANGE SYSTEM REGENERATION CYCLE THE TANKS CONTENTS ARE PUMPED TO THE RETURN BRINE TANK. 3) REGENERANT SURGE TANK - TREATMENT CHEMICALS AND WASHES GENERATED DURING ION EXCHANGE REGENERATION ARE DRAINED TO THIS TANK PRIOR TO PUMPING TO THE REGENERANT COLLECTION TANK. THESE TANKS ARE VENTED DIRECTLY TO THE ATMOSPHERE. NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A3101 - Process

Emission Source/Control: A3102 - Process

Emission Source/Control: A3103 - Process

Emission Source/Control: A3104 - Process

Emission Source/Control: A3105 - Process
Design Capacity: 14,000 gallons

Item 15.13:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00004
Process: A41
Process Description:
PROCESS A41 CONSISTS OF STORAGE TANKS ASSOCIATED WITH THE HCL SYNTHESIS UNIT. THESE TANKS INCLUDE THE FOLLOWING: 1) ACID CONDENSATE TANK - PRIOR TO MAINTENANCE, HYDROCHLORIC ACID HOLDUP AND WASHINGS FROM HCL SYNTHESIS UNITS ARE DRAINED INTO THIS TANK (NOTE: TANK VENT IS DIRECTED DOWNWARD TO A DRAIN IN CASE OF OVERFLOW.) 2) SCRUBBER SURGE TANK - HCL VENT SCRUBBER IN HCL SYNTHESIS AREA DRAINS INTO THIS TANK FROM WHICH IT IS RECIRCULATED TO THE HCL VENT SCRUBBER. THE LIQUID LEVEL IN THE TANK IS CONSTANT UNDER NORMAL OPERATING CONDITIONS. HOWEVER, WHEN ACID IS TRANSFERRED DURING STARTUP OR SHUTDOWN THERE IS INTERMITTENT OUTBREATHING. THESE TANKS ARE VENTED DIRECTLY TO THE ATMOSPHERE. NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A4101 - Process

Emission Source/Control: A4102 - Process

Item 15.14:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00004
Process: A42
Process Description:
SULFURIC ACID (98%) IS UTILIZED FOR DRYING OF WET CHLORINE GAS. IT IS DELIVERED TO THE NIAGARA PLANT IN BULK SHIPMENTS (PRIMARILY BY RAIL CARS). DURING ACID

TRANSFER INTO A STORAGE TANK, THE DISPLACED AIR IS VENTED TO THE ATMOSPHERE. NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A4201 - Process

Item 15.15:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00005
Process: A51
Process Description:
THE STORAGE AND EVAPORATION OF WEAK SODIUM HYDROXIDE (32-35%) INCLUDES VARIOUS EQUIPMENT (STORAGE TANKS AND AFTER CONDENSERS ON STEAM JET EJECTORS) WHICH ARE VENTED TO THE ATMOSPHERE. THE UTILIZATION OF THIS EQUIPMENT RESULTS IN THE EMISSION OF REGULATED AIR POLLUTANTS AT INSIGNIFICANT EMISSION LEVELS AS DEFINED BY 6 NYCRR PART 201-63 (d)(7). THIS IS BASED ON A POTENTIAL TO EMIT CRITERIA CONTAMINANTS (PARTICULATES CONSISTING OF SODIUM HYDROXIDE AND SODIUM CHLORIDE) OF LESS THAN 2.5 TONS PER YEAR. NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A5101 - Process

Emission Source/Control: A5102 - Process

Item 15.16:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00005
Process: A52
Process Description:
SODIUM HYDROXIDE (PROCESS, 20% AND 50%) IS STORED IN VARIOUS STORAGE TANKS WHICH ARE VENTED TO THE ATMOSPHERE. THE UTILIZATION OF THESE STORAGE TANKS RESULTS IN THE EMISSION OF REGULATED AIR POLLUTANTS AT INSIGNIFICANT EMISSION LEVELS AS DEFINED BY 6 NYCRR PART 201-6.3 (d) (7). THIS IS BASED ON A POTENTIAL TO EMIT CRITERIA CONTAMINANTS OF LESS THAN 2.5 TONS/YEAR. NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A5201 - Process

Emission Source/Control: A5202 - Process

Emission Source/Control: A5203 - Process

Emission Source/Control: A5204 - Process

Emission Source/Control: A5205 - Process

Emission Source/Control: A5206 - Process

Emission Source/Control: A5207 - Process

Emission Source/Control: A5208 - Process

Emission Source/Control: A5209 - Process

Item 15.17:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00006
Process: A61
Process Description:
PROCESS A61 IS UTILIZED TO PROCESS HYDROGEN. THE GAS IS MAINTAINED AT A POSITIVE PRESSURE TO PREVENT THE INFLUX OF AIR. THE MAIN HYDROGEN HEADER IS EQUPPED WITH A PRESSURE RELIEF DEVICE. DURING HIGH PRESSURE UPSETS, THE HYDROGEN IS VENTED TO THE ATMOSPHERE. THE HYDROGEN STREAM IS COMPRESSED AND EITHER SENT TO USERS (SUCH AS HCL SYNTHESIS UNIT) OR VENTED.
INTERMITTENT VENTING OCCURS AT THE HYDROGEN FEED COMPRESSOR STATION. THE HYDROGEN FEED LINE TO THE HCL SYNTHESIS UNIT CONTAINS A NUMBER OF DOUBLE BLOCK AND BLEED VALVES. IN ADDITION MAINTENANCE OF ON-LINE DEVICES REQUIRES THAT THE LINE FIRST BE BLED OF HYDROGEN. THE VENTING OF THE HYDROGEN RESULTS IN THE EMISSION OF REGULATED AIR POLLUTANTS AT INSIGNIFICANT EMISSION LEVELS AS DEFINED BY 6 NYCRR PART 201-6.3 (d) (7).
THIS IS BASED ON A POTENTIAL TO EMIT CRITERIA CONTAMINANTS OF LESS THAN 2.5 TONS/YR.
NO MONITORING IS REQUIRED FOR THIS PROCESS.

Emission Source/Control: A6101 - Process

Emission Source/Control: A6102 - Process

Emission Source/Control: A6103 - Process

Item 15.18:
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: A-00007
Process: A62
Process Description:
TWO 75000 LB/HR PACKAGED BOILERS EQUIPPED WITH HIGH EFFICIENCY LOW NOX BURNERS WILL PROVIDE PLANT SITE WITH 150 PSIG STEAM. INPUT IS APPROXIMATELY 90 MILLION BTU'S/HR WITH AN OUTPUT EFFICIENCY OF 80%. BOILERS WILL FIRE HYDROGEN, HYDROGEN WITH NATURAL GAS, HYDROGEN WITH #2 FUEL OIL, NATURAL GAS OR #2 FUEL OIL. THE #2 FUEL OIL WILL ONLY BE USED AS AN EMERGENCY BACKUP FUEL WHEN HYDROGEN AND NATURAL GAS ARE NOT AVAILABLE.

Emission Source/Control: A6201 - Combustion
Design Capacity: 75,000 pounds per hour

Emission Source/Control: A6202 - Combustion
Design Capacity: 75,000 pounds per hour

Condition 16: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 16.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A01

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 16.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Point 35904 is associated with the Hypo Recycle after scrubber. Scrubbing liquid (used to remove chlorine) is sampled and analyzed to determine sodium hydroxide concentration, NOT TO FALL BELOW 1% BY WEIGHT AT ANY TIME. Records shall be maintained verifying that pump is running and there is a flow to the scrubber. This will be a visual inspection by the operator once per shift. Emission Points 35901, 35902 and 35903 are three sparge tanks which vent through the after scrubber. They

were not added to the compliance monitoring for that reason.

Monitoring Frequency: PER BATCH OF PRODUCT/RAW MATERIAL CHANGE
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 17: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 17.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A02

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 17.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission point 36901 is associated with this process. Scrubbing liquid (used to remove chlorine) shall be sampled and analyzed to determine the sodium hydroxide concentration, NOT TO FALL BELOW 4% BY WEIGHT AT ANY TIME. Records shall be kept verifying that pump is running and there is flow to the scrubber. This shall be a visual inspection by the operator once per shift.

Monitoring Frequency: DAILY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 18: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 18.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A03

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 18.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Point 83002 is associated with the East Cistern. Scrubbing liquid (used to remove chlorine) shall be sampled and analyzed to determine the sodium hydroxide concentration, NOT TO FALL BELOW 0.2% BY WEIGHT AT ANY TIME. Records shall be kept verifying that the pump is running and there is flow to the scrubber. This shall be a visual inspection by the operator once per shift.

Monitoring Frequency: DAILY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 19: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 19.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A03

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 19.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Point 83001 is associated with the West Cistern. Scrubbing liquid (used to remove chlorine) shall be sampled and analyzed to determine sodium hydroxide concentration, NOT TO FALL BELOW 0.2% BY WEIGHT AT ANY TIME. Records shall be kept verifying that the pump is running and there is flow to the scrubber. This shall be a visual inspection by the operator once per shift.

Monitoring Frequency: DAILY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 20: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 20.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A04

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 20.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Point 00017 is associated with this process. Scrubbing liquid (used to remove chlorine) shall be sampled and analyzed to determine sodium hydroxide concentration, NOT TO FALL BELOW 2% BY WEIGHT AT ANY TIME. Records shall be kept verifying that the pump is running and there is flow to the scrubber. This shall be a visual inspection by the operator once per shift.

Monitoring Frequency: PER BATCH OF PRODUCT/RAW MATERIAL CHANGE
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 21: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 21.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A05

Item 21.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Unit A-00001, Process A05 includes two identical Hydrogen Chloride (HCl) synthesis units (No. 1 and No. 2, corresponding to emission points EP 36704 and EP 36705), which are operated in parallel. As described under Process A05 elsewhere in this permit, Olin is in the process of phasing out portions of the existing process vessels and replacing them with newer, larger vessels. In addition, new caustic scrubbers will be used to substantially remove any residual HCl and chlorine that may be emitted from the exhaust of each tail gas scrubber tower. Due to the new caustic scrubbers, new stacks (EP 36710, EP 36711) will be installed for the units.

The proposed HCl synthesis project will be conducted in phases. During the first phase, Unit No. 2 will be replaced beginning in July 2018. During the second phase, Unit No. 1 will be replaced. Until the second phase commences, the facility will continue to operate Unit No. 1 as it is currently configured.

The facility is required to submit written notification to the Department at key project milestones. Notification of the decommissioning dates of each old unit/emission source/emission point as they are removed from service shall be provided no later than 15 days after removal. Notification of the installation and startup dates of each replacement unit/emission source/emission point shall be provided at least 15 days in advance of the changes. Records shall be maintained onsite of the date and description of each change for a period of at least five years. These records must be made available for review by Department representatives upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 22: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

Applicable State Requirement:6 NYCRR Subpart 212-2

Item 22.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A05

Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE
CAS No: 007782-50-5 CHLORINE

Item 22.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Process emissions associated with the modified HCl synthesis unit (EU A-00001, Process A05, Emission Points 36710 and 36711) were evaluated under Part 212.

The facility is currently classified as a synthetic minor

source. The facility has emissions caps that limit the annual potential-to-emit (PTE) of carbon monoxide (CO) and oxides of nitrogen (NOx) to below major source thresholds, 100 tons per year each. The annual PTEs of all regulated air pollutants are less than the corresponding major source thresholds. The two HCl synthesis units emit HCl, chlorine, CO, and carbon dioxide (CO2). Due to the increased capacity of the upgraded units it is anticipated that annual emissions of CO and CO2 will increase. However, the facility-wide annual emissions will continue to be less than major source thresholds. Since the upgraded synthesis units will incorporate caustic scrubbers not found in the current units, it is anticipated that annual emissions of HCl and chlorine will decrease from current levels.

Non-applicability of Federal NSPS/NESHAPS: No NSPS has been identified that specifically applies to hydrogen chloride synthesis units. There is a NESHAPS for hydrochloric acid production, 40 CFR 63 Subpart NNNNN, but it only applies to HCl production facilities that are located at a major source of HAP, and as noted above this is not a major facility.

Environmental Ratings: Both chlorine and hydrogen chloride are federal HAPs but are not HTACs. Chlorine is listed as a moderate toxicity air contaminant and hydrogen chloride is listed as a low toxicity air contaminant. An initial environmental rating of B was assigned to both contaminants based on the provisions in 212-1.3.

212-2.2(b) Table 4 – Degree of Air Cleaning Required for Non-Criteria Air Contaminants: The ERP from each unit prior to the caustic scrubbers was 0.01 lb/hr HCl and 0.0009 lb/hr chlorine. From Table 4, the applicant was required to use air dispersion modeling to demonstrate that the maximum offsite air concentrations would be less than the applicable AGC/SGC.

Assessment of Air Quality Impacts: The caustic scrubber control efficiency is designed to be 99.9% for both contaminants. NYSDEC evaluated the impacts of the controlled emissions using AERSCREEN. The estimated combined maximum impacts due to the two updated HCl synthesis units were well below the AGCs and SGCs for each contaminant. Short term ambient HCl and Cl2 concentrations were below 0.0001% of the SGCs (2100 and 290 micrograms per cubic meter, respectively). Annual HCl concentration was 0.001% of the AGC (20 micrograms per cubic meter), and annual chlorine concentration was 0.01% of the AGC (0.2 microgram per cubic meter).

Based on this evaluation, the use of caustic scrubbers on the upgraded synthesis units will comply with the control requirements of Table 4 in 6 NYCRR Part 212-2.2(b).

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 23: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 23.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001
Process: A05

Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE
CAS No: 007782-50-5 CHLORINE

Item 23.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Emission Points 36710 and 36711 are caustic scrubbers associated with the replacement HCl synthesis units. Scrubbing liquid (used to remove chlorine and hydrogen chloride) shall be sampled and analyzed to determine the sodium hydroxide concentration at least once per shift. The sodium hydroxide concentration shall not fall below 10% by weight at any time. A visual inspection shall be carried out by the operator at least once per shift to verify for each scrubber that the pump is operating and there is flow to the scrubber, and records of the inspections shall be maintained.

Parameter Monitored: CONCENTRATION
Lower Permit Limit: 10 percent by weight
Monitoring Frequency: PER SHIFT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 24: Compliance Demonstration
Effective between the dates of 07/17/2018 and 07/16/2028

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

Item 24.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: A-00001 Emission Point: 36701
Process: A05

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 24.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Emission Point 36701 is a packed gas absorption system. Olin shall maintain and monitor a minimum flow of 15 gpm through the scrubber. Records verifying flow through the scrubber shall be recorded by the operator once per shift.

Monitoring Frequency: PER SHIFT
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY