ENVIRONMENT
& HEALTH

Electronic Submission

Mr. Joshua Cook, P.E.
Regional Air Pollution Control Engineer
Region 6, Division of Air Resources
New York State Department of Environmental Conservation
317 Washington Street
Watertown, NY 13601

RE: Revere Copper Products, Inc. – Revised Air State Facility Permit Renewal and Modification Application, DEC ID 6-3013-00091
FILE: 1087689/*1940103004*

Date: July 21, 2023

Ramboll
94 New Karner Road
Suite 106
Albany, NY 12203
USA

T 518-724-7272
F 315-463-7554
https://Ramboll.com

Dear Mr. Cook:

On behalf of Revere Copper Products, Inc. (Revere), Ramboll Americas Engineering Solutions, Inc. (Ramboll) has enclosed two copies of a revised application to renew and modify the Air State Facility (ASF) Permit for Revere's facility located in Rome, New York. The current ASF Permit has an expiration date of October 31, 2023. A renewal application was submitted to New York State Department of Environmental Conservation (NYSDEC) on February 8, 2023, thereby meeting the requirement to submit a renewal application no less than 180 days (May 4, 2023) and no more than 18 months prior to the expiration date. The proposed modification involves the replacement of an existing cast furnace with a new furnace.

NYSDEC provided comments regarding the February 2023 application on April 20, 2023 (letter dated March 28), and representatives of Revere and NYSDEC met virtually to discuss the application on May 15. On June 8, NYSDEC representatives inspected the Revere facility and by letter dated June 23, an order on consent was issued based on installation (but not operation) of the new furnace. The schedule of compliance attached to the order required Revere to submit a complete ASF Permit renewal application containing the requested information identified in the Department's Notice of Incomplete Application no later than July 10, 2023; an extension to July 21, 2023 was requested by Revere and granted by NYSDEC.

Also, in accordance with the Schedule of Compliance, should Revere propose to commission or otherwise initiate the new furnace prior to receipt of the Permit Modification, Revere is to include for Department review and approval a temporary commissioning and/or operation plan, which includes sufficient detail to confirm the facility will be in compliance with applicable regulations during operation of the furnace.

This revised Permit application is submitted following receipt of comments from New York State Department of Environmental Conservation (NYSDEC) on April 20, 2023 and consists of the following:

- Attachment A – Pre-populated ASF Permit application forms provided by NYSDEC with edits to update information to reflect current and anticipated future operations and additional permit application forms for new emission points, emission sources, and processes
- Attachment B – Matrix of Processes, Emission Sources, Points, and Controls
- Attachment C – Emission Inventory (Tables 1 – 16)
- Attachment D – Regulatory Discussion (including an evaluation of Part 212 air toxics requirements)
- Attachment E – Air Dispersion Modeling Report
- Attachment F – Toxic – Best Available Control Technology (T-BACT) Analysis
- Attachment G – Full Environmental Assessment Form (FEAF)
- Attachment H – Commissioning Plan (including a description of commissioning activities and schedule, estimated 2023 equipment operating hours including commissioning, emission inventory reflecting the Plan operating hours, and modeling report)
- Exhibit 1 – Climate Leadership and Community Protection Act (CLCPA) Analysis
- Exhibit 2 – Public Participation Plan
- Exhibit 3 – Alliance Source Testing Program and Results
- Exhibit 4 – Emergency Generator Certification
- Exhibit 5 – Degreaser SDS Excerpts
- Exhibit 6 – Annealer Fluids SDS Excerpts.

Background

Revere operates boilers, furnaces, and metal working equipment that are authorized by an ASF Permit (Permit Number 6-3013-00091/00039), which was last modified effective March 24, 2015. Condition 1-1 in the ASF Permit establishes emission caps for nitrogen oxides (NO_X), sulfur dioxide (SO_2), total particulate matter (PM), and PM with diameters of less than or equal to 10 and 2.5 microns (PM_{10} and $PM_{2.5}$, respectively). In accordance with the ASF Permit, Revere maintains records of fuel use, baghouse pressure drop readings, operating hours, scrubber water flow rate, and monthly and rolling 12-month emissions of capped contaminants.

Facility Modifications

Revere has removed casting furnace 2057 (Emission Unit U-CAST1, Emission Source 01257) and began the installation of a similar induction furnace (Emission Source 02728) that will provide an estimated 23.3% increase in output casting. The new furnace will vent to an existing cyclone and baghouse (00C40/00B40) and Emission Point (00040). Estimated emissions increases resulting from the furnace replacement project have been calculated, including emissions from the increased furnace capacity as well as emissions from downstream operations as a result of increased furnace throughput. The increases in annual operating hours for downstream operations will vary depending on the manufacturing process flow and will range from 0 to 36% in comparison to 2021 operating hours and 0 to 23.3% in comparison to 2022 operating hours.

The following additional facility changes that have been made were identified in the February 2023 application:

- The facility no longer produces or uses brass

- The facility has switched from residual (No. 6) to distillate (No. 2) fuel oil for the backup fuel combusted by the main boilers (Emission Unit U-COMB1)
- Machine #1187 has been removed from the facility
- Emission unit U-GRANC and Emission Point 00180 have been removed from the facility
- U-PTNRM, BH500, and Emission Point 00500 are no longer in use
- A non-exempt solvent cleaning bath has been identified (New Emission Unit U-SOLV1, Process SOL, Emission Source 02600) that is subject to Subpart 226-1 (Solvent Cleaning Processes)
- Estimated facility-wide potential emissions of SO_2 dropped below 100 tons per year (tpy) due to the shift from No. 6 to No. 2 fuel oil. Revere requested that the facility-wide cap on SO_2 emissions and the fuel oil usage cap be removed from the permit.

Note that since the facility no longer produces or uses brass, it is no longer subject to Title 40 of the Code of Federal Regulations (40 CFR) Part 63, Subpart TTTTTT (6T) – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources. *Secondary nonferrous metals processing facility* is defined in Section 63.11472 as "a brass and bronze ingot making, secondary magnesium processing, or secondary zinc processing plant that uses furnace melting operations to melt post-consumer nonferrous metal scrap to make products including bars, ingots, blocks, or metal powders." Subpart 6T does not apply to secondary copper processing. Therefore, we are requesting that permit conditions associated with Subpart 6T be removed from the Permit.

In addition, the three main boilers will be operated as gas-fired boilers as defined in 40 CFR Part 63, Subpart JJJJJJ (6J). As such, the facility is not subject to Subpart 6J requirements, and we are requesting that permit conditions associated with Subpart 6J be removed from the Permit.

Differences Between the Revised Application and the February 8, 2023 Application

The enclosed revised application incorporates the following key differences from the February 8, 2023 application:

- Some of Revere's process emission rates in the February 2023 application were based on source testing conducted in 2001 and 2008 that did not include particle size distribution (PSD) analysis. Accordingly, Revere initiated source testing (for engineering purposes only) in May 2023 to develop updated emission rates for five emission sources:

  - 1723 Reversing Mill (U-ROLL1, Emission Point (EP) 00026, Source 01723)
  - 1721 First Run Down Mill (U-ROLL1, EP 00029, Source 01721, Control 00C29)
  - Cast Shop 1799 Holding Furnace and 2443 Melting Furnace (U-CAST1, EP 00039, Source 01799 and 02443, Cyclone 00C39, and Baghouse 00C39)
  - Cast Shop 2056 Melting Furnace (U-CAST1, EP 00040, Source 02056, Cyclone 00C40, and Baghouse 00B40)
  - 1715 Overhauler (U-OVER1, EP 00031, Source 01715, Control 00C31).

  For each of these emission sources, samples were collected by Alliance Technical Group, LLC (Alliance) on May 30 through June 2, 2023 to establish updated emission rates for total filterable particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and condensable PM. In addition, a sample collected from the 1715 Overhauler exhaust was analyzed for copper. A summary of the test program and results is provided in Exhibit

3. The updated emission and exhaust flow rates have been incorporated into the emission inventory, Part 212 evaluation, dispersion modeling, and modeling report that are included in this revised application.

- Based on the updated emission rates, the estimated facility-wide potential emissions of total PM, PM_{10}, and $PM_{2.5}$ are below 100 tons per year (tpy) each. Revere is requesting that the facility emission caps for these contaminants be removed from the permit.

- Testing was not able to be performed on the Central Vacuum System (U-CAST1, EP 00602, Source CSVAC, Cyclone CSC01, and Baghouse CSB01) during the May 2023 test program. Revere previously assumed the PM concentration in the Central Vacuum System exhaust was equivalent to the grain standard, *i.e.*, 0.05 grains/dry standard cubic foot (gr/dscf), which is overly conservative given the air pollution control devices in use (*i.e.,* cyclone and baghouse). For our calculations, we have assumed that the performance of the vacuum exhaust cyclone and filter housing system would perform similarly to the exhaust of the cyclone and filter housing operating on the cast furnace exhausts. To be conservative, we used the higher of two available cast furnace exhaust outlet concentrations from the May 2023 test program and applied it to the vacuum system exhaust. The performance of the vacuum cyclone and filter housing is reasonably expected to be similar since the design features of the two systems are also similar.

- NYSDEC provided updated meteorological data on July 3, 2023 and these data have been used in the updated modeling included with this revised application.

- Using the updated emission rates, exhaust flow rates, and meteorological data, Ramboll updated the dispersion model for PM_{10} and $PM_{2.5}$. The modeling results, which are presented in the modeling report in Attachment E, show that predicted impacts from the current facility configuration as well as proposed future operations (following operation of the new cast furnace) meet the PM_{10} and $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS).

- Revere has clarified the EPs associated with the 464 Tray Style Coil Annealing Furnace (U-ANNE1, Source 00464) and 1154 Annealing Furnace (U-ANNE1, Source 01154). In each of these processes, a natural gas-fired DX boiler provides DX gas consisting of natural gas combustion byproducts and heat to the annealing furnace; the DX gas becomes the atmosphere in the furnace during the annealing process. A separate small natural gas-fired combustion unit provides heat to the furnace during the annealing process. Copper from a rolling mill moves through the annealing furnace. Both the furnace entrance and exit have a chamber that captures fugitive emissions and vents them to the outside. There also is an emergency relief vent that engages if the DX gas pressure builds up in the annealing chamber; this rarely occurs.

  Each of these annealing furnaces has four EPs: one exempt EP for venting combustion gases from a small, exempt tube furnace that provides heat to the furnace; one EP for the furnace entry chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when entering the annealing furnace; one EP for the furnace exit chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when exiting the annealing furnace; and the exempt emergency relief vent. The DX furnace vent is directed to the annealing chamber and does not directly vent outside. The entrance and exit chamber EPs are understood to be the EPs venting process emissions from these operations. Therefore, the following process EPs for these two annealing furnaces should be included:

- o Emission Source 00464 – Tray Style/Coil Anneal: EPs 00189 (entrance chamber exhaust) and 00190 (exit chamber exhaust); both of these EPs are in the current ASF Permit as well as the revised application.
- o Emission Source 01154 – 1154 Annealing Furnace: EPs 00367 (entry chamber exhaust) and 00362 (exit chamber exhaust). EP 00367 is in the current ASF Permit but EP 00362 is a new EP.

These stacks and their parameters have been added to the revised ASF Permit application.

- Emissions from the combustion of natural gas by the DX boilers were double counted in the February 8, 2008 application with the DX combustion gas that becomes the annealing furnace atmosphere. This double counting has been corrected.

- The coolants and additives used in the rolling mills (U-ROLL1) were updated based on additional bath composition information provided by Revere. In addition, Revere rolling mill process engineers have indicated that the Kathon 886, an antimicrobial agent, is added to the 1723 Reversing Mill (U-ROLL1, EP 00026, Source 01723) and 1176 Bliss Mill (U-ROLL1, EP 00036, Source 01723) is completely consumed within 24 to 48 hours of its addition to the recirculating coolant. As a result, emissions associated with constituents in Kathon 886 have been removed from the updated emission inventory.

  When excessive biological growth (bacteria) is present in the water-soluble coolant systems, the pH of the solution is lowered from the acidic excretions of the bacteria. This biological growth is controlled by additions of antimicrobial agents to the coolant systems. Revere currently uses two different antimicrobials to stop the biological growth in the coolant systems: Grotan and Kathon. The Kathon additive is used as an initial dose at the start of a new coolant change. While the system residual of the Kathon additive is not testable, it is known to be consumed based on the rapid increase in pH (less excretion from bacteria). Revere relies on the biological results reported by the in-house laboratory to gauge the need for additional antimicrobials.

- Estimated actual annual operating hours have been updated based on information provided by Revere; some of the future projected annual operating hours in the revised application are higher and some are lower in comparison to those used in the February 2023 application.

- The distance to property line has been added for non-exempt emission points (see Tables 2 and 3 in Attachment E).

- The Part 212 air toxics evaluation (Attachment D) and modeling report (Attachment E) have been updated to incorporate the changes in emission rates, cooling water composition, and stack flow rates discussed above. Note that emission rates of constituents associated with particulate emissions, such as those from the casting and rolling mills, have been updated based on the May 2023 source testing results.

  As discussed in Attachment D, there are three constituents with predicted impacts that exceed the conservative interim annual guideline concentrations (AGCs) provided by the Air Toxics Section.

Actual annual emissions are estimated to be 668 pounds for the three constituents combined. Refer to the T-BACT analysis in Attachment F.

Two additional constituents, copper and 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, have modeled impacts that exceed their respective AGCs. Copper has been identified as a constituent potentially emitted from the Overhauler (U-OVER1, Source 01715, Wet Scrubber 00C31). 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol has been identified as a constituent potentially emitted from three rolling mills: Bliss Mill, Hot Mill, and Reversing Mill. These modeled exceedances occur in the future anticipated operating scenario but do not occur in the commissioning operating scenario.

Revere is proposing annual operating hour limits that will reduce the modeled impacts of these two constituents to 95% of their respective AGCs. Based on emission rates from the May 2023 testing and the resulting predicted impacts, the proposed operating hour limits would be 6,658 hours per year for the Overhauler and 7,858 hours per year for the Reversing Mill. However, we are proposing that the actual limits be based on the most recent Department-approved post-control hourly emission rates and resulting modeled impacts that are 95% of their respective AGCs.

- Additional compliance certifications are being proposed based on the results of the Part 212 evaluation and are included with the renewal application forms in Attachment A.

- Revere has developed a plan for commissioning the new cast furnace. A discussion of the commissioning activities and schedule, estimated 2023 equipment operating hours that include the new furnace operating hours during commissioning and additional operating hours for downstream emission sources, emission inventory reflecting the Plan operating hours, and modeling report are provided in Attachment H.

Additional Questions Included in NYSDEC's April 20, 2023 Letter

Supporting Documentation

In Table 7, did the facility assume that the emission factor for the new furnace was the same as the old furnace even though it is larger. If so, please provide justification to this assumption.

Response – It was assumed that the particulate matter emission factors established for the old furnace would also apply to the new furnace. The new furnace is smaller than the old furnace, with a capacity of 65,000 pounds (lb) of molten metal compared to the old furnace capacity of 110,000 lb. The primary difference is that the old furnace was a channel-type furnace that needed to maintain a volume of liquid metal at all times and took longer to heat the copper to the required temperatures, while the new furnace is an induction furnace that does not need to maintain a volume of liquid metal and can heat the copper to required temperatures more quickly than the older channel furnace. This potentially increases the actual production of the rest of the plant because the copper slabs can be poured at an increased frequency.

The updated hourly emission rates for the casting furnaces in Table 7 of the Emission Inventory (Attachment C) are based on May 2023 testing during the melting of copper. The new furnace was not in operation and was not tested; however, the 2056 Melting Furnace was tested, and these emission rates have been used to estimate emissions from the new furnace. Since the new furnace is significantly smaller, it is reasonable to assume that the hourly emissions would be lower; however, a conservative approach was taken to assume the same particulate matter mass emission rates as the 2056 Melting Furnace.

In Table 8, why was the emission rate potential used in calculating the PAE when in other tables the post control emission factor was used for PAE?

Response – This was an error in the calculations and the post-control emission factor should have been used. Table 8 in the Emission Inventory (Attachment C) has been updated.

In regulation section of Appendix D, the facility should go through a minor discussion concerning NSR with respect to the modification.

Response – The requested discussion has been added to the regulatory discussion in Attachment D.

Please provide the certification for the new emergency generator if it is certified.

The certification for the new emergency generator is provided in Exhibit 4.

Please provide the chemical composition page of the SDS for the degreasers.

Response – The chemical composition page of the SDS for the degreasers is provided in Exhibit 5. Additionally, the State Regulation page of the SDS is included in which the manufacturer confirms compliance with Subpart 226-1.

Please provide the chemical composition page of the SDS and information on how small a percentage of material for the lubricating/metal working fluids in the annealers.

Response – The chemical composition pages of the SDSs for Navi-Guard Roll Oil, Bonderite 860, Bonderite 870, and Wallover 40 are provided in Exhibit 6. Revere estimates approximately 0.25% of the annealing fluid is expected to remain on the metal and has the potential to be emitted. The remainder of the annealing fluid remains as a liquid and is drained out of the machine.

Additional Comment from NYSDEC Air Toxics Section (ATS) on July 20, 2023
In a July 20, 2023 email communication, the ATS provided the following additional comment regarding the modeling of impacts of copper and copper oxide:

CAS#s 7440-50-8 & 1317-38-0: *Due to the CAS# 1317-38-0 AC having its GCs based upon CAS# 7440-50-8 (because of CAS# 7440-50-8 being a component of CAS# 1317-38-0), <u>the emissions for these two ACs need to be combined for comparison to the CAS# 7440-50-8 Guideline Concentrations (GCs)</u>. The summed model-predicted impacts for these two ACs combined equates to a total conc. representing 101% of the CAS# 7440-50-8 AGC with the reduced Commissioning Plan emissions.*

Ramboll performed additional modeling for the Commissioning Plan operating scenario to evaluate the combined impacts of copper (CAS# 7440-50-8) and copper oxide (CAS# 1317-38-0). As discussed in the Commissioning Plan modeling report (Attachment H), the model-predicted impacts for copper and copper oxide combined are 0.468 $\mu g/m^3$, which is 98% of the copper AGC (0.48 $\mu g/m^3$).

Ramboll also performed additional modeling for the Permit Application operating scenario to evaluate the combined impacts of copper and copper oxide. As discussed in the Permit Application modeling report (Attachment E), the model-predicted impacts for copper and copper oxide combined are less than the AGC, provided public access to a small portion of the Revere parking lot is restricted. Revere will restrict public access to the portion of the parking lot as needed to demonstrate acceptable combined impacts of copper and copper oxide. Additional details demonstrating the methods and extents of the restrictions will be provided to NYSDEC during the week of July 24.

After the NYSDEC has an opportunity to review these application materials, Revere would like to have a meeting at Region 6 offices to discuss the application. Receipt of NYSDEC approval to proceed with the Commissioning Plan is an urgent priority for Revere. Should you have questions about the information in this application, please contact Dave Ozog of Revere at (315) 338-2160 or at DOzog@reverecopper.com, or Cris Hine of Ramboll at (518) 424-8768 or at Cris.Hine@Ramboll.com.

Yours sincerely,
Ramboll Americas Engineering Solutions, Inc.

Cristian L. Hine

Cristian L. Hine
Project Manager
D 518-724-7259
M 518-424-8768
Cris.Hine@Ramboll.com

Matthew Traister, P.E.
Vice President
D 513-697-2021
M 315-569-7882
matt.traister@ramboll.com

Attachment: Revised Air State Facility Permit Renewal/Modification Application and Commissioning Plan

cc: Craig Weill (NYSDEC)
Dave Ozog (Revere)
Steven Miraglia (Ramboll)

ATTACHMENT A
UPDATED ASF PERMIT RENEWAL/MODIFICATION APPLICATION FORMS

New York State Department of Environmental Conservation
Air Permit Application

NEW YORK STATE | Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC

Oct 24, 2022 11:55 am

Section I - Certification

Permit Application Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. **submitted. Based on my inquiry of the person or persons directly responsible for gathering the information I believe the information is true, accurate and complete. I am aware that there are significant penalties forsubmitting false information,** **including the possibility of fines and imprisonment for knowing violations.**

Responsible Official	David Ozog	**Title**	Lead Environmental Operations & Facilities Engineer
Signature		**Date**	July 21, 2023

Professional Engineer Certification

I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments as they pertain to the practice of engineering. **I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.**

Professional Engineer	Matthew Traister	**NYS License No.**	068979
Signature		**Date**	July 21, 2023

NEW YORK STATE | Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC

Oct 24, 2022 11:55 am

Section II - Identification Information

Permit Type: Air State Facility (ASF)
RENEWAL

General Permit Title:

☐ **Application involves construction of new facility** ☐ **Application involves construction of new emission unit(s)**

Owner / Firm

Name	REVERE COPPER PRODUCTS INC
Street	1 REVERE PARK
City	ROME
State	NY
Country	USA
Zip	13440 5581
Owner Classification	Corporation/Partnership
Taxpayer Id	161146203

Facility

Name	REVERE COPPER PRODUCTS INC
Address	ONE REVERE PARK
City	ROME
Zip	13440

Facility Contact Information

Name	David Ozog
Phone No.	3153382160
Affiliation	Revere Copper Products, Inc.
Fax No.	
Title	Lead Environmental Operations & Facilities Engineer
Street	~~Revere Copper Products Inc~~ 1 Revere Park
City	Rome
State	NY
Country	USA
Zip	13440
E-mail	dozog@reverecopper.com

Project Description

Application for renewal of Air State Facility (ASF) Permit.
In addition, Revere is seeking to modify the Air State Facility Permit as follows:

- Replace existing casting furnace 2057 (emission source 02057) with a new similar induction furnace (emission source 02728) that will provide an estimated 23.3% increase in output casting. Both the existing and new furnace are electrically heated. The replacement of the casting furnace also will result in a production increase by other upstream and downstream emission sources including the following: 1154 Bright Anneal, 1729-1734 Lee Wilson Anneal, 2383-2386 Ebner Anneal, 1715 Overhauler, 1176 Bliss Mill, 1706 Hot Mill, 1721 First Run Down Mill, 1723 Reversing Mill, 1724 Z-Mill, 1738 & 1739 Strand Anneal, 1740 Heavy Gauge, 2587 Galvanizing Furnace. Natural gas use for process heating will increase for the 1701 Cake Furnace, 1738 Strand Anneal, 1729-1734 Lee Wilson Anneal, 2383-2386 Ebner Anneal, 1154 Bright Anneal, 2587 Galvanizing Furnace.

- Replace No. 6 residual fuel oil with No. 2 distillate fuel oil as the backup fuel fired by the 3 main boilers.

- The facility no longer produces or uses brass. Therefore, it is no longer subject to Title 40 of the Code of Federal Regulations (40 CFR) Part 63, Subpart TTTTTT (6T) – National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources.

- The facility operates the 3 boilers in Emission Unit U-COMB1 as gas-fired boilers as defined in 40 CFR Part 63, Subpart JJJJJJ. As a result, the facility is not subject to Subpart JJJJJJ requirements.

NEW YORK STATE | Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section III - Facility Information

Classification

X **INDUSTRIAL**

SIC Codes

3351

NAICS Codes

3314

as backup fuel

galvanizing line that coats copper strip with zinc/tin.

as the primary fuel and

Facility Description

Revere Copper products is a secondary melter of copper ~~and copper alloys~~. The facility operates three dual-fuel (natural gas ~~or~~ no. 6 fuel oil) boilers, several electric induction furnaces for the melting of copper ~~and allow~~ scrap, several rolling mills, slitters, pick ling and cleaning lines, annealing furnaces, and a ~~metal coating line that coats sheets with lead, tin or other materials~~. The facility also operates several exempt combustion units. ~~the facility is also installing a galvanizing line for copper, copper alloys, and stainless steel sheeting~~.

Revere has switched the dual-fuel boilers to firing No. 2 fuel oil for backup.

Compliance Statements (Title V Only)

I certify that as of the date of this application the facility is in compliance with all applicable requirer NO

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block of section IV of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

- [ ] **This facility will continue to be operated and maintained in such manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.**
- [ ] **For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.**
- [ ] **Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine status.**

Facility Applicable Federal Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11196~~	~~a~~	~~1~~				
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11196~~	~~a~~	~~3~~				
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11201~~	~~b~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11205~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11210~~	~~c~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11214~~	~~c~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11223~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11225~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11225~~	~~b~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11225~~	~~c~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11225~~	~~d~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11225~~	~~g~~					
~~40~~	~~CFR~~	~~63~~	~~JJJJJJ~~	~~11235~~						
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11465~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11466~~						
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11467~~	~~a~~					

Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC

Oct 24, 2022 11:55 am

Section III - Facility Information
Facility Applicable Federal Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11467~~	~~c~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11467~~	~~e~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11467~~	~~g~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11468~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11469~~	~~a~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11469~~	~~b~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11469~~	~~c~~					
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11470~~						
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11471~~						
40	CFR	63	ZZZZ	6595	a	1				
40	CFR	63	ZZZZ	6603	a					
40	CFR	63	ZZZZ	6605	a					
40	CFR	63	ZZZZ	6605	b					
40	CFR	63	ZZZZ	6625	e					
40	CFR	63	ZZZZ	6625	f					
40	CFR	63	ZZZZ	6625	h					
40	CFR	63	ZZZZ	6625	i					
40	CFR	63	ZZZZ	6625	j					
40	CFR	63	ZZZZ	6640	f					
40	CFR	63	ZZZZ	6655	a					
40	CFR	63	ZZZZ	6655	e					
40	CFR	63	ZZZZ	6655	f					
40	CFR	63	ZZZZ	6660						
40	CFR	63	ZZZZ	6665						
6	NYCRR	211		2						
6	NYCRR	226								

Facility State Only Requirements

Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	201	5	2	c					
6	NYCRR	201	5	3	c					
6	NYCRR	211		1						
6	NYCRR	201	5							
	ECL	19	0301							

Add:
40 CFR Part 60, Subpart JJJJ (for the new natural gas-fired emergency generator
40 CFR Part 82, Subpart F

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section III - Facility Information

~~Facility Compliance Certification~~

~~Rule Citation~~

~~Title~~	~~Type~~	~~Part~~	~~Sub Part~~	~~Section~~	~~Sub Division~~	~~Parag~~	~~Sub Parag~~	~~Clause~~	~~Sub Clause~~	~~Item~~
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11465~~	~~a~~					

~~X Applicable Federal Requirement~~

~~Description~~

~~The owner or operator of an affected source that commenced construction on or before September 20, 2007 must comply with either a control efficiency limit or an outlet concentration limit for PM by routing emissions from each affected source through appropriate control. The control must achieve an outlet PM concentration limit of 0.015 gr/dscf. Each performance test must be performed according to the test methods and requirements listed in 40 CFR 11466(c). The owner or operator shall conduct a performance test within 90 days of the issuance of this permit.~~

~~If the results of the test indicate that the facility cannot meet the emission limits of this condition they will modify this process and permit, in order to meet the limit.~~

~~Monitoring Performed For~~

~~Emission Unit~~	~~UCAST1~~	~~Emission Point~~		~~Process~~	~~BP1~~	~~Emission Source~~	

~~Contaminants~~

~~Capping~~	~~CAS No.~~	~~Contaminant Name~~
☐	~~0NY075-00-0~~	~~PARTICULATES~~

~~Monitoring Information~~

~~X INTERMITTENT EMISSION TESTING~~

~~Work Practice Type~~	~~Process Material Code~~	~~Process Material Description~~	~~Ref Test Method~~
			~~Method 5~~

~~Parameter Code~~	~~Parameter Description~~	~~Manufacturer Name/Model No.~~

~~Limit Upper~~	~~Limit Lower~~	~~Limit Units Code~~	~~Limit Units Description~~
~~.015~~		~~12~~	~~grains per dscf~~

~~Averaging Method~~	~~Code~~	~~63~~	~~Desc~~	~~AVERAGING METHOD - SEE MONITORING DESCRIPTION~~
~~Monitoring Freq~~	~~Code~~	~~13~~	~~Desc~~	~~SINGLE OCCURRENCE~~
~~Reporting Reqs~~	~~Code~~	~~01~~	~~Desc~~	~~ONCE / BATCH OR MONITORING OCCURRENCE~~

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

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~~Facility Compliance Certification~~

~~Rule Citation~~

~~Title~~	~~Type~~	~~Part~~	~~Sub Part~~	~~Section~~	~~Sub Division~~	~~Parag~~	~~Sub Parag~~	~~Clause~~	~~Sub Clause~~	~~Item~~
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11465~~	~~a~~					

~~X Applicable Federal Requirement~~

~~Description~~

~~The owner or operator shall maintain emission from this process to not exceed .015 grains per dscf limit if it was verified during the stack test.~~

~~Records will be kept indicating the operation of the furnaces during this process, in a format acceptable to the department. These records will be submitted to the department at the frequently listed below, and document the furnaces operation that is occurring during this process.~~

~~Any noncompliance with the furnace operation monitored in this condition must be reported by sending a copy of such record to the NYSDEC, Region 6, within 30 days of the occurrence, including the amount of excess emissions that occurred, during noncompliance.~~

~~Monitoring Performed For~~

~~Emission Unit~~	~~UCAST1~~	~~Emission Point~~		~~Process~~	~~BP1~~	~~Emission Source~~	

~~Contaminants~~

~~Capping~~	~~CAS No.~~	~~Contaminant Name~~
☐	~~0NY075-00-0~~	~~PARTICULATES~~

~~Monitoring Information~~

~~X RECORD KEEPING/MAINTENANCE PROCEDURES~~

~~Work Practice~~	~~Process Material~~		~~Ref Test Method~~
~~Type~~	~~Code~~	~~Description~~	

~~Parameter~~		~~Manufacturer Name/Model No.~~
~~Code~~	~~Description~~	

~~Limit~~		~~Limit Units~~	
~~Upper~~	~~Lower~~	~~Code~~	~~Description~~

~~Averaging Method~~	~~Code~~		~~Desc~~	
~~Monitoring Freq~~	~~Code~~	~~14~~	~~Desc~~	~~AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Reqs~~	~~Code~~	~~14~~	~~Desc~~	~~SEMI-ANNUALLY (CALENDAR)~~

Section III - Facility Information

~~Facility Compliance Certification~~

~~Rule Citation~~

~~Title~~	~~Type~~	~~Part~~	~~Sub Part~~	~~Section~~	~~Sub Division~~	~~Parag~~	~~Sub Parag~~	~~Clause~~	~~Sub Clause~~	~~Item~~
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11468~~	~~b~~					

~~X Applicable Federal Requirement~~

~~Description~~

~~If the results of the visual inspection or VE test conducted under 40 CFR 63.11468(a) indicate a problem with the operation of the baghouse, including but not limited to air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions, the owner or operator must take immediate corrective action to return the baghouse to normal operation according to the equipment manufacturer's specifications or instructions and record the corrective action taken.~~

~~Corrective actions may include, but are not limited to the following:~~

~~(i) Sealing off defective bags or filter media;~~

~~(ii) Replacing defective bags or filter media or otherwise repairing the control device;~~

~~(iii) Sealing off a defective fabric filter compartment;~~

~~(iv) shutdown the pouring of brass (i.e. furnaces idled) producing the PM emissions within 3 hours of the problem discovery, unless the malfunction can be corrected within this time frame.~~

~~Monitoring Performed For~~

~~Emission Unit~~	~~UCAST1~~	~~Emission Point~~	~~00040~~	~~Process~~	~~BH2~~	~~Emission Source~~	

~~Monitoring Performed For~~

~~Emission Unit~~	~~UCAST1~~	~~Emission Point~~	~~00040~~	~~Process~~	~~BP2~~	~~Emission Source~~	

~~Contaminants~~

~~Capping~~	~~CAS No.~~	~~Contaminant Name~~
☐	~~0NY075-00-0~~	~~PARTICULATES~~

~~Monitoring Information~~

~~X RECORD KEEPING/MAINTENANCE PROCEDURES~~

~~Work Practice~~	~~Process Material~~		~~Ref Test Method~~
~~Type~~	~~Code~~	~~Description~~	

~~Parameter~~		~~Manufacturer Name/Model No.~~
~~Code~~	~~Description~~	

~~Limit~~		~~Limit Units~~	
~~Upper~~	~~Lower~~	~~Code~~	~~Description~~

~~Averaging Method~~	~~Code~~	~~76~~	~~Desc~~	~~MAXIMUM - NOT TO BE EXCEEDED PER OCCURRENCE~~
~~Monitoring Freq~~	~~Code~~	~~14~~	~~Desc~~	~~AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~
~~Reporting Reqs~~	~~Code~~	~~14~~	~~Desc~~	~~SEMI-ANNUALLY (CALENDAR)~~

NEW YORK STATE | Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC

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Section III - Facility Information

~~Facility Compliance Certification~~

~~Rule Citation~~										
~~Title~~	~~Type~~	~~Part~~	~~Sub Part~~	~~Section~~	~~Sub Division~~	~~Parag~~	~~Sub Parag~~	~~Clause~~	~~Sub Clause~~	~~Item~~
~~40~~	~~CFR~~	~~63~~	~~TTTTTT~~	~~11468~~	~~b~~					
~~X Applicable Federal Requirement~~										

~~Description~~

~~If the results of the visual inspection or VE test conducted under 40 CFR 63.11468(a) indicate a problem with the operation of the baghouse, including but not limited to air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions, the owner or operator must take appropriate corrective action to return the baghouse to normal operation according to the equipment manufacturer's specifications or instructions and record the corrective action taken, including operating in bypass mode (Process BP1).~~

~~Monitoring Performed For~~							
~~Emission Unit~~	~~UCAST1~~	~~Emission Point~~	~~00039~~	~~Process~~	~~BH1~~	~~Emission Source~~	

~~Contaminants~~

~~Capping~~	~~CAS No.~~	~~Contaminant Name~~
☐	~~0NY075-00-0~~	~~PARTICULATES~~

~~Monitoring Information~~					
~~X RECORD KEEPING/MAINTENANCE PROCEDURES~~					
~~Work Practice~~	~~Process Material~~			~~Ref Test Method~~	
~~Type~~	~~Code~~	~~Description~~			
~~Parameter~~				~~Manufacturer Name/Model No.~~	
~~Code~~	~~Description~~				
~~Limit~~		~~Limit Units~~			
~~Upper~~	~~Lower~~	~~Code~~	~~Description~~		
~~Averaging Method~~	~~Code~~		~~Desc~~		
~~Monitoring Freq~~	~~Code~~	~~14~~	~~Desc~~	~~AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION~~	
~~Reporting Reqs~~	~~Code~~	~~14~~	~~Desc~~	~~SEMI-ANNUALLY (CALENDAR)~~	

Facility Emissions Summary

Refer to the updated emissions inventory provided in Attachment C.

Cas No.	Contaminant Name	PTE (lbs/yr)	PTE (tons/yr)	Actual (lbs/yr)	Actual (tons/yr)
007440-36-0	ANTIMONY				
007440-38-2	ARSENIC				
000071-43-2	BENZENE				
000095-47-6	BENZENE,1,2-DIMETHYL				
007440-41-7	BERYLLIUM				
007440-43-9	CADMIUM				

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Renewal Number: 2

Facility: REVERE COPPER PRODUCTS INC

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Section III - Facility Information

Facility Emissions Summary

Cas No.	Contaminant Name	PTE		Actual	
		(lbs/yr)	(tons/yr)	(lbs/yr)	(tons/yr)
000124-38-9	CARBON DIOXIDE				
0NY750-00-0	CARBON DIOXIDE EQUIVALENTS				
0NY750-00-0	CARBON DIOXIDE EQUIVALENTS				
000630-08-0	CARBON MONOXIDE				
007440-47-3	CHROMIUM				
007440-48-4	COBALT				
000071-55-6	ETHANE, 1,1,1-TRICHLORO				
000111-76-2	ETHANOL, 2-BUTOXY-				
000100-41-4	ETHYLBENZENE				
000050-00-0	FORMALDEHYDE				
007647-01-0	HYDROGEN CHLORIDE				
007439-92-1	LEAD				
007439-96-5	MANGANESE				
007439-97-6	MERCURY				
000091-20-3	NAPHTHALENE				
007440-02-0	NICKEL METAL AND INSOLUBLE COMPOUNDS				
0NY210-00-0	OXIDES OF NITROGEN	~~190000~~			
0NY075-00-0	PARTICULATES	~~180000~~			
0NY075-02-5	PM 2.5	~~180000~~			
0NY075-00-5	PM-10	~~180000~~			
130498-29-2	POLYCYCLIC AROMATIC HYDROCARBONS				
007782-49-2	SELENIUM				
007446-09-5	SULFUR DIOXIDE	~~190000~~			
000108-88-3	TOLUENE				
0NY100-00-0	TOTAL HAP				
0NY998-00-0	VOC				
007440-66-6	ZINC				
007646-85-7	ZINC CHLORIDE				
001314-13-2	ZINC OXIDE (FUME)				

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UANNE1

This EU encompasses thirteen annealing units (Lee Wilson machine nos. 1729 to 1734, Ebner machine nos. 2383 to 2386, bright anneal machine no. 1154, strand anneal machine no. 1738, and tray style/coil anneal machine no. 464 entry and exit) used to anneal copper ~~and copper alloy~~ sheets from the rolling mills. All annealing units except for the tray style/coil anneal are located in the rolling mill. The Lee Wilson, Ebner, bright, strand, and tray style/coil ~~entry and tray style/coil exit~~ exhaust through EPs 00369, 00440, 00367, 00362, 00027, 00189, and 00190 respectively. This emissions unit also encompasses two sulfuric acid pickling lines (machines 1738 and 1740) used to clean copper ~~and copper allow~~ sheets. Machine nos. 1738 exhaust through EP 00027, machine no. 1740 exhausts through EP 00028. The particulate emissions (acid mists) are controlled by wet scrubbers.

Building

Building	Building Name	Length	Width	Orient.
1	BAR MILL			
51	ROLLING MILL			

Emission Point

Emission Unit	UANNE1	**Emission Pt.**	00027			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~82~~ 100	5 19	36	80		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
56.6	24,000	~~464.714~~ 464.723	~~4783.837~~ 4783.831	51	142	

Emission Unit	UANNE1	**Emission Pt.**	00028			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~88~~ 92	10	19	80		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
58.0	7,000	~~464.718~~ 464.722	~~4783.855~~ 4783.853	51	191	

Emission Unit	UANNE1	**Emission Pt.**	00189			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~25~~ 35	7	9	100		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
19	500	464.452 464.468	~~4784.016~~ 4784.007	1	531	

Emission Unit	UANNE1	**Emission Pt.**	00190			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~25~~ 42	8	9	100		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
19	500	~~464.438~~ 464.452	4784.036 4784.028	1	591	

Add EP 00362:
NYTM (E) - 464.694 NYTM (N) - 4783.850
Gound Elevation - 453 ft Height - 45 ft Ht.
Height Above Structure - -5 ft
Inside Diameter - 9 in.
Exit Temperature - 100 F
Exit Velocity - 19 fps
Exit Flow - 500 cfm
Distance to Property Line - 253 ft

NEW YORK STATE | Department of Environmental Conservation

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Section IV - Emission Unit Information

Emission Point

Emission Unit	UANNE1	**Emission Pt.**	00367			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~30~~ 45	~~15~~ 5	9 ~~12~~	~~150~~ 100		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
~~10.6~~ 19	500	~~464.702~~ 464.674	~~4783.872~~ 4783.827	51	180	

Emission Unit	UANNE1	**Emission Pt.**	00369			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	55 30	~~12~~ 15	7	100		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
0.001	0.016	~~464.424~~ 464.709	~~4784.052~~ 4783.863	51	244	

Emission Unit	UANNE1	**Emission Pt.**	00440			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	55 ~~30~~	~~25~~ 15	3	~~150~~ 100		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
59~~.1~~	174	~~464.691~~ 464.687	~~4783.845~~ 4783.880	51	440	

Emission Source / Control

Emission Unit	UANNE1	**Emission Source**	00464	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	~~01/01/2037~~ 1951	~~12/31/2037~~		464 TRAY STYLE/COIL ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	00S38	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
K	01/01/1967	12/31/1967		S&C FUME SCRUBBER/SC 12.5V
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**	001	**Desc**	WET SCRUBBER
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UANNE1	**Emission Source**	00S40	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
K	01/01/1968	12/31/1968		S&C AIR WASHER/S621
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**	001	**Desc**	WET SCRUBBER
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	01154	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	~~01/01/2049~~	~~12/31/2049~~		1154 BRIGHT ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code** 1949		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	01729	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1967	12/31/1967		1729 LEE WILSON ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	01730	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1967	12/31/1967		1730 LEE WILSON ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	01731	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1967	12/31/1967		1731 LEE WILSON ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UANNE1	Emission Source	01732		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		1732 LEE WILSON ANNEAL	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UANNE1	Emission Source	01733		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		1733 LEE WILSON ANNEAL	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UANNE1	Emission Source	01734		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		1734 LEE WILSON ANNEAL	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UANNE1	Emission Source	01738		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		TRAND ANNEAL(combination of DXG source , FLD source, and PCK	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UANNE1	Emission Source	01740		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		1740 HEAVY GAUGE CLEANING	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UANNE1	**Emission Source**	02383	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1978	12/31/1978		2383 EBNER ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	02384	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1978	12/31/1978		2384 EBNER ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	02385	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1978	12/31/1978		2385 EBNER ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UANNE1	**Emission Source**	02386	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I	01/01/1978	12/31/1978		2386 EBNER ANNEAL
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

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Section IV - Emission Unit Information

Process Information

Emission Unit	UANNE1	Process	DXG		
Source Classification Code (SCC)	Total Thruput Quantity / Hr	Total Thruput Quantity / Yr	Thruput Quantity Units Code	Thruput Quantity Units Description	
30490004					
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule Hrs / Day	Operating Schedule Days / Yr	Building	Floor / Location	
			51		

Description

DX by-products of combustion

The annealing atmosphere of ~~dx~~ gas emits ~~burned natural gas.~~

Emission Point Identifier(s)

00190	00027	00367	00189	00369	00362

Emission Source / Control Identifier(s)

00464	01154	01729	01730	01731	01732	01733	01734	01738

Emission Unit	UANNE1	Process	FLD		
Source Classification Code (SCC)	Total Thruput Quantity / Hr	Total Thruput Quantity / Yr	Thruput Quantity Units Code	Thruput Quantity Units Description	
30402201					
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule Hrs / Day	Operating Schedule Days / Yr	Building	Floor / Location	
			51		

Description

volatilzed

The annealing process emits a small amount of ~~burned~~ residual lubricating/metalworking fluid.

Emission Point Identifier(s)

00027	00369	00440	00367

Emission Source / Control Identifier(s)

01154	01729	01730	01731	01732	01733	01734	01738	02383	02384
02385	02386								

531

Section IV - Emission Unit Information

Process Information

Emission Unit	UANNE1	Process	PCK		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
39999999					

☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location
	Hrs / Day	Days / Yr		
			51	

Description

and cleaning material

The emissions of acid mists from the pickling process are ducted to and controlled by the wet scrubbers.

Emission Point Identifier(s)	
00028	00027

Emission Source / Control Identifier(s)			
00S38	00S40	01738	01740

Emission Unit Applicable Federal Requirements

Emission Unit	U-ANNE1	Emission Point		Process	PCK	Emission Source	00S38			
Title	**Type**	**Part**	**Sub Part**	**Section**	**Sub Division**	**Parag**	**Sub Parag**	**Clause**	**Sub Clause**	**Item**
6	NYCRR	201	7							

Emission Unit	U-ANNE1	Emission Point		Process	PCK	Emission Source	00S40			
Title	**Type**	**Part**	**Sub Part**	**Section**	**Sub Division**	**Parag**	**Sub Parag**	**Clause**	**Sub Clause**	**Item**
6	NYCRR	201	7							

531

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UCAST1

This Emission Unit encompasses the emissions from ~~five~~ four induction furnaces (machine nos. ~~1187,~~ 1799, 2443, 2056, and ~~2057~~ 2728). All of the furnaces are used to recycle(ie melt and pour) post consumer copper ~~and copper alloy materials, including brass.~~ ~~The billet induction furnace(1187) forms cylindrical billets.~~ The ~~remaining~~ furnaces produce ingots and rectangular cakes. Furnaces ~~1187,~~ 1799~~,~~ and 2443 exhaust through ~~ep~~ EP 00039 and furnaces 2056 and ~~2057~~ 2728 exhaust through ~~ep~~ EP 00040. A central vacuum system is used for housekeeping purposes. The particulate emissions are controlled by cyclones and baghouses. In addition, federally enforceable special permit conditions exist for these emission points to limit the particulate emissions.

Building

Building	Building Name	Length	Width	Orient.
21	CAST SHOP			

Emission Point

Emission Unit	UCAST1	Emission Pt.	00039			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
455	50	-5	48	200		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
~~60~~ 48	~~45000~~ 36,499	~~464.32~~ 464.315	~~4784.058~~ 4784.074	21	~~300~~ 384	

Emission Unit	UCAST1	Emission Pt.	00040			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
455	50	-5	48	200		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
48 ~~60~~	~~45000~~ 37,621	~~464.28~~ 464.282	~~4784.023~~ 4784.024	21	~~380~~ 313	

Emission Unit	UCAST1	Emission Pt.	00602			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
455	18	-37	6	~~175~~ 80		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
119	1400	~~464.337~~ 464.338	~~4784.08~~ 4784.083	21	~~415~~ 420	

Emission Source / Control

Emission Unit	UCAST1	Emission Source	00B39		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	03/01/1995	09/30/1995		GRIFFIN ENVIRONMENTAL CO/JA630CG	
Design Capacity		Units Code		Desc	
Control Type	Code	016	Desc	FABRIC FILTER	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UCAST1	**Emission Source**	00B40		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
K	03/01/1995	09/30/1995		GRIFFIN ENVIRONMENTAL CO/JA 630-CG	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**	016	**Desc**	FABRIC FILTER	
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Emission Unit	UCAST1	**Emission Source**	00C39		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
K	03/01/1995	09/30/1995		HOSOKAWA MIKROPUL ENV. SYSTEMS TYPE HE	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**	075	**Desc**	SINGLE CYCLONE	
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Emission Unit	UCAST1	**Emission Source**	00C40		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
K	03/01/1995	09/30/1995		HOSOKAWA MIKROPUL ENV. SYSTEMS/TYPE HE	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**	075	**Desc**	SINGLE CYCLONE	
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Removed from service Feb. 2016.
Removed from facility 2022

Emission Unit	UCAST1	**Emission Source**	01187		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
I				1187 MELTING FURNACE (BILLET)	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**		**Desc**		
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Emission Unit	UCAST1	**Emission Source**	01799		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
I				1799 HOLDING FURNACE	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**		**Desc**		
Waste Feed	**Code**		**Desc**	591	
Waste Type	**Code**		**Desc**		

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UCAST1	Emission Source	02056		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I				2056 MELTING FURNACE	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

May 2023

Emission Unit	UCAST1	Emission Source	02057	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
I				2057 MELTING FURNACE

Add new electric melting furnace:

2728 Melting Furnace
Installation Start May 2023

Emission Unit	UCAST1	Emission Source	02443		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I				2443 MELTING FURNACE	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UCAST1	Emission Source	CSB01		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	12/01/2014			JT Systems, Inc. Model JTS-TD-573-TI	
Design Capacity	1400	Units Code	39	Desc	cubic feet per minute
Control Type	Code	016	Desc	FABRIC FILTER	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UCAST1	Emission Source	CSC01		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	12/01/2014			JT Systems, Inc. Model JTS-030HE-cs	
Design Capacity	1400	Units Code	39	Desc	cubic feet per minute
Control Type	Code	075	Desc	SINGLE CYCLONE	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UCAST1	Emission Source	CSVAC		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	12/01/2014			Cast Shop Central Vacuum System	
Design Capacity	1400	Units Code	39	Desc	cubic feet per minute
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Process Information

Emission Unit	UCAST1	Process	BH1		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
30400224					
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location	
	Hrs / Day	Days / Yr			
			21		

Description

This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes including brass~~ (machine nos. ~~1187,~~ 1799, and 2443). Emission point EP00039 is associated with this process. Emissions are controlled by cyclones and baghouses. Each furnace has a hood that is ducted to the cyclone/baghouse unit associated with EP00039.

Emission Point Identifier(s)

00039

Emission Source / Control Identifier(s)

00B39	00C39	~~01187~~	01799	02443

Emission Unit	UCAST1	Process	BH2		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
30400224					
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location	
	Hrs / Day	Days / Yr			
			21		

2728

Description

This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes including brass~~ (machine nos. 2056 and ~~2057~~). Emission point~~s~~ EP00040 is associated with this process. Emissions are controlled by cyclones and baghouses. Each furnace has a hood that is ducted to the cyclone/baghouse unit associated with EP00040.

Emission Point Identifier(s)

00040

Emission Source / Control Identifier(s)

00B40	00C40	02056	~~02057~~	02728

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Section IV - Emission Unit Information

Process Information

Emission Unit	UCAST1	Process	BP1			
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units			
	Quantity / Hr	Quantity / Yr	Code	Description		
30400224						
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location		
	Hrs / Day	Days / Yr				
			21			

Description

Emission Point Identifier(s)

00039

Emission Source / Control Identifier(s)

00C39	~~01187~~	01799	02443

Process Description Missing:
This process encompasses the emissions from the induction furnaces used to melt and pour copper (machine nos. 1799 and 2443) when the baghouse is bypassed. EP 00039 is associated with this process. Emissions are controlled by cyclones. Each furnace has a hood that is ducted to the cyclone unit associated with EP 00039.

Emission Unit	UCAST1	Process	BP2			
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units			
	Quantity / Hr	Quantity / Yr	Code	Description		
30400224						
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location		
	Hrs / Day	Days / Yr				
			21			

Description

Emission Point Identifier(s)

00040

Emission Source / Control Identifier(s)

00C40	02056	~~02057~~	02728

Process Description Missing:
This process encompasses the emissions from the induction furnaces used to melt and pour copper (machine nos. 2056 and 2728). EP 00040 is associated with this process. Emissions are controlled by cyclones. Each furnace has a hood that is ducted to the cyclone unit associated with EP 00040.

Department of Environmental Conservation

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Section IV - Emission Unit Information

Process Information

Emission Unit	UCAST1	Process	VAC		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location	
	Hrs / Day	Days / Yr			
			21		

Description

The

Central vacuum system to provide exhaust at multiple locations within the Cast Shop. ~~Approximately 17 drop points will be installed and the~~ collected particulates are controlled through a cyclone and cartridge filter. The cartridge filter is located outside at ground level with discharge to the atmosphere.

Emission Point Identifier(s)
00602

Emission Source / Control Identifier(s)		
CSB01	CSC01	CSVAC

Emission Unit Applicable Federal Requirements

Emission Unit	U-CAST1	Emission Point	~~00039~~	Process			Emission Source			
Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	201	7							

Process BP1 and BP2

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UCOMB1

This emission unit (EU) encompasses boilers 1,2 & 3 located at the boiler house. Boilers 1 and 2 (42.0 mmbtu/hr boilers) exhaust through emission point (EP) 00004. Boiler 3 (57.2 mmbtu/hr boiler) exhausts through EP00003. Each boiler is dual-fueled (natural gas as the primary fuel and ~~no. 6~~ No. 2 distillate fuel oil as the back-up fuel). ~~Sulfur dioxide emissions are capped by restricting no. 6 fuel oil usage from all three boilers.~~

Building

Building	Building Name	Length	Width	Orient.
15	BOILER ROOM			

Emission Point

Emission Unit	UCOMB1	Emission Pt.	00003			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	60	~~30~~ 22	50	390		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
~~10~~ 9.4	7700	~~464.495~~ 464.490	~~4784.075~~ 4784.069	15	505	

Emission Unit	UCOMB1	Emission Pt.	00004			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	150	~~130~~ 112	84	200		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
~~7~~ 7.3	16800	~~464.5~~ 464.492	~~4784.091~~ 4784.078	15	482	

Emission Source / Control

Emission Unit	UCOMB1	Emission Source	00BR1		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
C	01/01/1950	12/31/1950		BABCOCK-WILCOX FJ-18	
Design Capacity	42	Units Code	25	Desc	million Btu per hour
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UCOMB1	Emission Source	00BR2		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
C	~~01/01/2047~~	~~12/31/2047~~		KEELER TYPE CP (BUILT UP BOILER)	
Design Capacity	42	Units Code	25	Desc	million Btu per hour
Control Type	Code 1950		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UCOMB1	Emission Source	00BR3		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
C	~~01/01/2047~~ 1951	~~12/31/2047~~		KEELER TYPE CP (BUILT UP BOILER)	
Design Capacity	57.2	**Units Code**	25	**Desc**	million Btu per hour
Control Type	**Code**		**Desc**		
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Process Information

Emission Unit	UCOMB1	Process	F01	
Source Classification Code (SCC)	**Total Thruput Quantity / Hr**	**Total Thruput Quantity / Yr**	**Thruput Quantity Units Code**	**Thruput Quantity Units Description**
10200402				

☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule Hrs / Day	Operating Schedule Days / Yr	Building	Floor / Location
			15	

Description

distillate fuel oil (No. 2)

Three boilers firing ~~residual fuel oil (no. 6)~~ to produce steam for process heating and general heating.

Emission Point Identifier(s)

00003	00004

Emission Source / Control Identifier(s)

00BR1	00BR2	00BR3

Emission Unit	UCOMB1	Process	G01	
Source Classification Code (SCC)	**Total Thruput Quantity / Hr**	**Total Thruput Quantity / Yr**	**Thruput Quantity Units Code**	**Thruput Quantity Units Description**
10200602				

☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule Hrs / Day	Operating Schedule Days / Yr	Building	Floor / Location
			15	

Description

Three boilers firing natural gas to produce steam for process heating and general heating.

Type text here

Emission Point Identifier(s)

00003	00004

Emission Source / Control Identifier(s)

00BR1	00BR2	00BR3

Section IV - Emission Unit Information

Emission Unit Applicable Federal Requirements

Emission Unit	U-COMB1	**Emission Point**	00003	**Process**		**Emission Source**	00BR3			
Title	**Type**	**Part**	**Sub Part**	**Section**	**Sub Division**	**Parag**	**Sub Parag**	**Clause**	**Sub Clause**	**Item**
6	NYCRR	227	1	1 ~~2~~	a ~~b~~	2 ~~1~~				

ADD:
Emission Unit: U-COMB1 Emission Point: 00004 Process Emission Source: 00BR1, 00BR2
6 NYCRR 227 1 1 a 2

Emission Unit Emissions Summary

Emission Unit	U-COMB1			
CAS No.	**Contaminant Name**			
000630-08-0	CARBON MONOXIDE			
ERP (lb/yr)	**PTE (lb/hr)**	**PTE (lb/yr)**	**Actual (lb/hr)**	**Actual (lb/yr)**
~~36792~~	~~1.899~~	~~16640~~		~~2905.5~~

Emission Unit	U-COMB1			
CAS No.	**Contaminant Name**			
0NY210-00-0	OXIDES OF NITROGEN			
ERP (lb/yr)	**PTE (lb/hr)**	**PTE (lb/yr)**	**Actual (lb/hr)**	**Actual (lb/yr)**
~~404712~~	~~10.99~~	~~96300~~		~~17076~~

Emission Unit	U-COMB1			
CAS No.	**Contaminant Name**			
0NY075-00-0	PARTICULATES			
ERP (lb/yr)	**PTE (lb/hr)**	**PTE (lb/yr)**	**Actual (lb/hr)**	**Actual (lb/yr)**
~~125129.6~~	~~2.15~~	~~18840~~		~~13774~~

Emission Unit	U-COMB1			
CAS No.	**Contaminant Name**			
007446-09-5	SULFUR DIOXIDE			
ERP (lb/yr)	**PTE (lb/hr)**	**PTE (lb/yr)**	**Actual (lb/hr)**	**Actual (lb/yr)**
~~1803543~~	~~21.7~~	~~190000~~		~~102~~

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Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UFURN1

This EU encompasses the walking beam furnace (machine no. 1701) used to preheat copper ~~and copper alloy~~ cake prior to hot rolling. The furnace is fired by natural gas and has a maximum heat input rating of 51.8 mmbtu/hr. The emissions exhaust through ~~ep~~ 00041. EP

Building

Building	Building Name	Length	Width	Orient.
51	ROLLING MILL			

Emission Point

Emission Unit	UFURN1	Emission Pt.	00041			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	60	~~21~~ 20	51	510		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
44	37000	~~464.726~~ 464.737	~~4783.782~~ 4783.786	51	9.8	

Emission Source / Control

Emission Unit	UFURN1	Emission Source	01701		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1967	12/31/1967		SALEM WALKING BEAM FURNACE	
Design Capacity	51.8	Units Code	25	Desc	million Btu per hour
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Process Information

Emission Unit	UFURN1	Process	G02		
Source Classification Code (SCC)	Total Thruput Quantity / Hr	Total Thruput Quantity / Yr	Thruput Quantity Units Code	Thruput Quantity Units Description	
10200602					

☐ Confidential

☐ Operating At Maximum Capacity

Operating Schedule Hrs / Day	Operating Schedule Days / Yr	Building	Floor / Location
		51	

Description

Natural gas is fired in the furnace, used to reheat metal.

Emission Point Identifier(s)
00041

Emission Source / Control Identifier(s)
01701

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Section IV - Emission Unit Information

Emission Unit Emissions Summary

Emission Unit	U-FURN1			
CAS No.	**Contaminant Name**			
0NY210-00-0				
ERP (lb/yr)	**PTE (lb/hr)**		**Actual (lb/hr)**	**Actual (lb/yr)**
48000	5.48	48000		16736

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Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UGALV1

This emission unit consists of a Zinc-Tin coating line to galvanize Copper, ~~Copper Alloy and Stainless Steel~~ sheeting. The process consists of five sources for cleaning, surface prepartion, sheet pre-heating and galvanizing. The sources include an acid pickling tank, a pre-flux tank, a dryer(exempt) and a Galvanizing pot that includes a top-flux kettle.

Building

Building	Building Name	Length	Width	Orient.
51	ROLLING MILL			

Emission Point

Emission Unit	UGALV1	**Emission Pt.**	00600			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~46~~ 45	~~5~~ 4	24	70		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
74	14000	~~464.621~~ 464.624	~~4783.933~~ 4783.941	51	~~550~~ 73.5	

Emission Unit	UGALV1	**Emission Pt.**	00601			
Ground Elev (ft)	**Height (ft)**	**Height Above Structure (ft)**	**Inside Diameter (in)**	**Exit Temp (`F)**	**Cross Section Length (in)**	**Cross Section Width (in)**
453	~~26~~ 44	5	22	70		
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**
63	10000	~~464.645~~ 464.631	~~4783.949~~ 4783.954	51	~~550~~ 25.4	

Emission Source / Control

Emission Unit	UGALV1	**Emission Source**	02587		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
I		08/30/2013		2587 Zinc-Tin Coating	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**		**Desc**		
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

Emission Unit	UGALV1	**Emission Source**	S6001		
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**	
K		08/30/2013		Fabric Filter-baghouse	
Design Capacity		**Units Code**		**Desc**	
Control Type	**Code**	016	**Desc**	FABRIC FILTER	
Waste Feed	**Code**		**Desc**		
Waste Type	**Code**		**Desc**		

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section IV - Emission Unit Information

Process Information

Emission Unit	UGALV1	Process	GAL			
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units			
	Quantity / Hr	Quantity / Yr	Code	Description		
30400805						
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location		
	Hrs / Day	Days / Yr				
			51	Main Floor		

Description

Process consists of metal preheater, top-flux application(Zinc-Potassium Chloride) and galvanizing kettle containing molten Tin(50%) and Zinc(50%) of emission source 02587. Emissions from galvanizing kettle ~~will be~~ are ducted to emission point 00601. Particulate emission are controlled by a baghouse emission source S6001.

A 9.7 MMBtu/hr natural gas fired furnace is used to preheat metal sheeting and melt Zinc-Tin metal

Emission Point Identifier(s)

00601

Emission Source / Control Identifier(s)

02587 S6001

Emission Unit	UGALV1	Process	PIC			
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units			
	Quantity / Hr	Quantity / Yr	Code	Description		
39999999						
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location		
	Hrs / Day	Days / Yr				
			51	Main Floor		

Description

Zinc-Ammonia-Barium

Process consists of Hydrochloric Acid~~(10%)~~ pickling /cleaning tank at 180 degree F, and followed by a preflux solution tank (~~Zinc-Ammonia~~ Chloride) of emission source 02587. Emissions from Hydrochloric Acid and preflux tanks are ducted to and controlled by a wet scrubber emission source S6000

Emission Point Identifier(s)

00600

Emission Source / Control Identifier(s)

02587 S6000

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

EU U-GRANC and its emission sources have been removed from the facility as of 2021

Section IV - Emission Unit Information

Emission Unit Description

~~Emission Unit~~	~~UGRANC~~

~~This emission unit consists of a 16 MMBtu/hr natural gas fired furnace, for heating billets before metal extrusion process. The furnace was installed in 1983, therefore, it was previously exempt from permitting under 6 NYCRR 201-3.2(c)(2).~~

~~Building~~

~~Building~~	~~Building Name~~	~~Length~~	~~Width~~	~~Orient.~~
~~1~~	~~BAR MILL~~			

~~Emission Point~~

Emission Unit	~~UGRANC~~	~~Emission Pt.~~	~~00180~~			
~~Ground Elev (ft)~~	Height (ft)	~~Height Above Structure (ft)~~	Inside Diameter (in)	~~Exit Temp (°F)~~	~~Cross Section~~ ~~Length (in)~~	~~Width (in)~~
453	~~45~~	~~10~~	~~36~~			
~~Exit Velocity (FPS)~~	~~Exit Flow (ACFM)~~	~~NYTM (E) (KM)~~	~~NYTM (N) (KM)~~	~~Building~~	~~Distance to Property Line (ft)~~	~~Date of Removal~~
		~~464.344~~	~~4783.98~~	~~1~~	~~450~~	

Emission Source / Control

Emission Unit	UGRANC	Emission Source	GRANC	
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.
C	06/01/1983		2021	Granco furnace
Design Capacity	16	Units Code	25	Desc: million Btu per hour
Control Type	Code		Desc	
Waste Feed	Code		Desc	
Waste Type	Code		Desc	

~~Process Information~~

~~Emission Unit~~	~~UGRANC~~	~~Process~~	~~GAS~~		
~~Source Classification Code (SCC)~~	~~Total Thruput~~ ~~Quantity / Hr~~	~~Quantity / Yr~~	~~Thruput Quantity Units~~ ~~Code~~	~~Description~~	
~~39999999~~					
☐ ~~Confidential~~ ☐ ~~Operating At Maximum Capacity~~	~~Operating Schedule~~ ~~Hrs / Day~~	~~Days / Yr~~	~~Building~~	~~Floor / Location~~	
			~~1~~	~~main~~	

~~Description~~

~~The Granco furnace heats billets to approximately 1750 deg. F for a metal extrusion process. The furnace fires natural gas exclusively.~~

~~Emission Point Identifier(s)~~
~~00180~~

~~Emission Source / Control Identifier(s)~~
~~GRANC~~

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section IV - Emission Unit Information

Emission Unit Emissions Summary

~~Emission Unit~~	U-GRANC			
~~CAS No.~~	~~Contaminant Name~~			
~~000630-08-0~~	~~CARBON MONOXIDE~~			
ERP (lb/yr)	~~**PTE (lb/hr)**~~	**PTE (lb/yr)**	**Actual (lb/hr)**	**Actual (lb/yr)**
~~11774~~	~~1.344~~	~~11774~~		~~3460~~

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Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section IV - Emission Unit Information

Emission Unit Description

Emission Unit	UOVER1

This EU encompasses the overhauler (machine no. 1715) used to shave the outside surface of copper ~~alloy~~ materials with cutter blades. This process produces chips and shavings, which are collected inside the exhaust system and sent back to the cast shop for remelting. The emissions exhaust through ~~ep~~ EP 00031. The particulate emissions are controlled by a wet scrubber/~~rotoclone.~~ rotocone

Building

Building	Building Name	Length	Width	Orient.
51	ROLLING MILL			

Emission Point

Emission Unit	UOVER1	Emission Pt.	00031			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	~~44~~ 35	~~6~~ 5	48	70		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
~~40~~ 51	~~30000~~ 38827	~~464.77~~ 464.775	~~4783.876~~ 4783.875	51	80.4	

Emission Source / Control

Emission Unit	UOVER1	Emission Source	00C31		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	01/01/1968	12/31/1968		STEINHORST SCRUBBER	
Design Capacity	30000	Units Code	39	Desc	cubic feet per minute
Control Type	Code	001	Desc	WET SCRUBBER	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UOVER1	Emission Source	01715		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1968	12/31/1968		1715 OVERHAULER	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC

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Section IV - Emission Unit Information

Process Information

Emission Unit	UOVER1	Process	OVR		
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units		
	Quantity / Hr	Quantity / Yr	Code	Description	
39999999					
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location	
	Hrs / Day	Days / Yr			
			51		

Description

The emissions from the cutting and shaving of the overhauler process are ducted to and controlled by the wet scrubber/rotoclone.

Emission Point Identifier(s)
00031

Emission Source / Control Identifier(s)	
00C31	01715

Emission Unit Applicable Federal Requirements

Emission Unit	U-OVER1	Emission Point		Process	OVR	Emission Source	00C31			
Title	Type	Part	Sub Part	Section	Sub Division	Parag	Sub Parag	Clause	Sub Clause	Item
6	NYCRR	201	7							

Emission Unit Emissions Summary

Emission Unit	U-OVER1			
CAS No.	Contaminant Name			
0NY075-00-0	PARTICULATES			
ERP (lb/yr)	PTE (lb/hr)	PTE (lb/yr)	Actual (lb/hr)	Actual (lb/yr)
4205	~~0.48~~	4205		~~1716~~

Department of Environmental Conservation

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Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

EU U-PTNRM and its emission sources have been shut down since 2011. The equipment remains on site but is not usable.

Section IV - Emission Unit Information

~~Emission Unit Description~~

~~Emission Unit~~	~~UPTNRM~~

~~The EU encompasses the emissions from the sanding and coating processes in the patina room.~~

~~Building~~

~~Building~~	~~Building Name~~	~~Length~~	~~Width~~	~~Orient.~~
~~1~~	~~BAR MILL~~			

~~Emission Point~~

Emission Unit	~~UPTNRM~~	~~Emission Pt.~~	~~00500~~			
~~Ground Elev (ft)~~	Height (ft)	~~Height Above Structure (ft)~~	Inside Diameter (in)	~~Exit Temp (°F)~~	~~Cross Section~~ ~~Length (in)~~	~~Width (in)~~
455	~~10~~	~~20~~		~~68~~	~~21~~	~~21~~
~~Exit Velocity (FPS)~~	~~Exit Flow (ACFM)~~	~~NYTM (E) (KM)~~	~~NYTM (N) (KM)~~	~~Building~~	~~Distance to Property Line (ft)~~	~~Date of Removal~~
		~~464.485~~	~~4784.014~~	~~1~~		

Emission Source / Control

Emission Unit	UPTNRM	**Emission Source**	BH500	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
K			2011	DUST COLLECTOR
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**	016	**Desc**	FABRIC FILTER
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	UPTNRM	**Emission Source**	PTNR1	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I			2011	SANDER
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

Emission Unit	~~UPTNRM~~	**Emission Source**	PTNR2	
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**
I			2011	SURFACE COATER
Design Capacity		**Units Code**		**Desc**
Control Type	**Code**		**Desc**	
Waste Feed	**Code**		**Desc**	
Waste Type	**Code**		**Desc**	

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Section IV - Emission Unit Information

~~Process Information~~

~~Emission Unit~~	~~UPTNRM~~	~~Process~~	~~P01~~		
~~Source Classification Code (SCC)~~	~~Total Thruput~~		~~Thruput Quantity Units~~		
	~~Quantity / Hr~~	~~Quantity / Yr~~	~~Code~~	~~Description~~	
~~30400224~~					
☐ ~~Confidential~~ ☐ ~~Operating At Maximum Capacity~~	~~Operating Schedule~~		~~Building~~	~~Floor / Location~~	
	~~Hrs / Day~~	~~Days / Yr~~			
			~~1~~		

~~Description~~

~~This process encompasses the emissions from the sanding of copper/copper alloy sheets. Emissions are exhausted through a dust collector and then to EP00500T~~

~~Emission Point Identifier(s)~~
~~00500~~

~~Emission Source / Control Identifier(s)~~	
~~BH500~~	~~PTNR1~~

~~Emission Unit~~	~~UPTNRM~~	~~Process~~	~~P02~~		
Source Classification Code (SCC)	~~Total Thruput~~		~~Thruput Quantity Units~~		
	Quantity / Hr	Quantity / Yr	Code	Description	
30400224					
☐ Confidential ☐ Operating At Maximum Capacity	~~Operating Schedule~~		Building	Floor / Location	
	Hrs / Day	Days / Yr			
			1		

~~Description~~

~~This process encompasses the emissions from the surface coating of copper/copper alloy sheet. The coating operation has an enclosed hood with a small centrifugal fan that vents internally to the patina room.~~

~~Emission Point Identifier(s)~~

~~Emission Source / Control Identifier(s)~~
~~PTNR2~~

~~Emission Unit Emissions Summary~~

~~Emission Unit~~	~~U-PTNRM~~			
~~CAS No.~~	~~Contaminant Name~~			
~~0NY075-00-0~~	~~PARTICULATES~~			
~~ERP (lb/yr)~~	~~PTE (lb/hr)~~	~~PTE (lb/yr)~~	~~Actual (lb/hr)~~	~~Actual (lb/yr)~~
~~2.6~~	~~3.0E-6~~	~~0.026~~		~~0.013~~

New York State Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section IV - Emission Unit Information

please remove space
(should be 00029)

Emission Unit Description

Emission Unit	UROLL1

This EU encompasses five rolling mills (machine nos. 1176, 1706, 1721, 1723, and 1724), which use lubricating/metalworking fluid in the rolling of copper ~~and copper alloy~~ sheets. Machine nos. 1176, 1706, 1721, 1723, and 1724 exhaust through eps 00036, 00 029, 00026, and 00025 respectively. Each mill emits a small amoaunt of lubricating/metalworking fluid. The emissions from ~~eps~~ EPs 00029, 00030, and 00036 are controlled by two mist eliminators and a baffle chamber respectively.

Building

Building	Building Name	Length	Width	Orient.
51	ROLLING MILL			

Emission Point

Emission Unit	UROLL1	Emission Pt.	00025			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	44	~~14~~ 4	42	150		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
53	30600	~~464.687~~ 464.655	~~4783.893~~ 4783.842	51	226	

Emission Unit	UROLL1	Emission Pt.	00026			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	~~30~~ 57	~~5~~ 6	36	70		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
56 ~~53~~	23554 ~~22500~~	~~464.666~~ 464.707	~~4783.913~~ 4783.903	51	102	

Emission Unit	UROLL1	Emission Pt.	00029			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	60	~~30~~ 22	72	70		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
36 ~~31~~ 7.7	61334 ~~13000~~	~~464.655~~ 464.761	~~4783.869~~ 4783.889	51	76.8	

Emission Unit	UROLL1	Emission Pt.	00030			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section Length (in)	Cross Section Width (in)
453	80	~~30~~ 29	30	115		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
68	20000	~~464.636~~ 464.770	~~4783.878~~ 4783.822	51	4.5	

NEW YORK STATE | Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Section IV - Emission Unit Information

Emission Point

Emission Unit	UROLL1	Emission Pt.	00036			
Ground Elev (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp (`F)	Cross Section	
					Length (in)	Width (in)
453	45	~~6~~ 5	18	70		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
6	620	~~464.617~~ 464.634	~~4783.894~~ 4783.899	51	161	

Emission Source / Control

Emission Unit	UROLL1	Emission Source	00C29		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	01/01/1967	12/31/1967		STEINHORST MIST ELIMINATOR	
Design Capacity		Units Code		Desc	
Control Type	Code	014	Desc	MIST ELIMINATOR	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UROLL1	Emission Source	00C30		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	01/01/1967	12/31/1967		STEINHORST MIST ELIMINATOR	
Design Capacity		Units Code		Desc	
Control Type	Code	014	Desc	MIST ELIMINATOR	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UROLL1	Emission Source	00C36		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
K	01/01/1953	12/31/1953		REVERE COPPER PRODUCTS, INC.	
Design Capacity		Units Code		Desc	
Control Type	Code	078	Desc	BAFFLE	
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

Emission Unit	UROLL1	Emission Source	01176		
Source Type	Date of Construction	Date of Operation	Date of Removal	Manufacturer's Name/Model No.	
I	01/01/1953	12/31/1953		1176 BLISS MILL	
Design Capacity		Units Code		Desc	
Control Type	Code		Desc		
Waste Feed	Code		Desc		
Waste Type	Code		Desc		

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Section IV - Emission Unit Information

Emission Source / Control

Emission Unit	UROLL1	Emission Source	01706			
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**		
I	01/01/1967	12/31/1967		1706 HOT MILL		
Design Capacity		**Units Code**		**Desc**		
Control Type	**Code**		**Desc**			
Waste Feed	**Code**		**Desc**			
Waste Type	**Code**		**Desc**			

Emission Unit	UROLL1	Emission Source	01721			
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**		
I	01/01/1968	12/31/1968		1721 FIRST RUN DOWN MILL		
Design Capacity		**Units Code**		**Desc**		
Control Type	**Code**		**Desc**			
Waste Feed	**Code**		**Desc**			
Waste Type	**Code**		**Desc**			

Emission Unit	UROLL1	Emission Source	01723			
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**		
I	01/01/1967	12/31/1967		1723 REVERSING MILL		
Design Capacity		**Units Code**		**Desc**		
Control Type	**Code**		**Desc**			
Waste Feed	**Code**		**Desc**			
Waste Type	**Code**		**Desc**			

Emission Unit	UROLL1	Emission Source	01724			
Source Type	**Date of Construction**	**Date of Operation**	**Date of Removal**	**Manufacturer's Name/Model No.**		
I	01/01/1967	12/31/1967		1724 SENDZIMER (Z) MILL		
Design Capacity		**Units Code**		**Desc**		
Control Type	**Code**		**Desc**			
Waste Feed	**Code**		**Desc**			
Waste Type	**Code**		**Desc**			

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Facility: REVERE COPPER PRODUCTS INC

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Section IV - Emission Unit Information

Process Information

Emission Unit	UROLL1	Process	ROL			
Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units			
	Quantity / Hr	Quantity / Yr	Code	Description		
30499999						
☐ Confidential ☐ Operating At Maximum Capacity	Operating Schedule		Building	Floor / Location		
	Hrs / Day	Days / Yr				
			51			

Description

The rolling process in each mill emits a small amount of lubricating/metalworking fluid.

Emission Point Identifier(s)				
00030	00025	00036	00026	00029

Emission Source / Control Identifier(s)							
00C29	00C30	00C36	01176	01706	01721	01723	01724

Emission Unit Emissions Summary

Emission Unit	U-ROLL1			
CAS No.	Contaminant Name			
0NY075-00-0	PARTICULATES			
ERP (lb/yr)	PTE (lb/hr)	PTE (lb/yr)	Actual (lb/hr)	Actual (lb/yr)
47173		47173		

See separate form for U-SOLV1

New York State Department of Environmental Conservation
Air Permit Application

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Section IV - Emission Unit Information

Emission Unit Description	☐ Continuation Sheet(s)
Emission Unit	U - S O L V 1

This EU encompasses one non-exempt solvent degreaser located in the Rolling Mill Grinding Room. The degreaser exhausts fugitively to the room and uses a Subpart 226-1 compliant solvent.

Building Information ☐ Continuation Sheet(s)

Building ID	Building Name	Length (ft)	Width (ft)	Orientation
51	Rolling Mill			

Emission Point Information ☐ Continuation Sheet(s)

Emission Point:

Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)

Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Point:

Ground Elevation (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)

Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Source/Control Information ☐ Continuation Sheet(s)

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model Number
0 2 6 0 0	I	1993					Solvent Degreaser

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description
550	0045	gallons				

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model Number

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

New York State Department of Environmental Conservation
Air Permit Application

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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Process Information

☐ Continuation Sheet(s)

Emission Unit	U - S O L V 1	Process	S O L

Process Description

Solvent emissions from the 550-gallon degreaser.

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description
24150000				

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hours/Day	Days/Year		
			51	

Emission Point Identifier(s)

Emission Source/Control Identifier(s)

02600						

Emission Unit	-	Process	

Process Description

Source Classification Code (SCC)	Total Throughput		Throughput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

	Operating Schedule		Building	Floor/Location
☐ Confidential ☐ Operating at Maximum Capacity	Hours/Day	Days/Year		

Emission Point Identifier(s)

Emission Source/Control Identifier(s)

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Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements							☐ Continuation Sheet(s)		
				Title	Type	Part	Subpart	Section	Subdiv.	Parag.	Subparag.	Cl.	Subcl.
U-SOLV1		SOL	02600	6	NYCRR	226	1	3					
U-SOLV1		SOL	02600	6	NYCRR	226	1	4	a				
U-SOLV1		SOL	02600	6	NYCRR	226	1	5	a				

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements							☐ Continuation Sheet(s)		
				Title	Type	Part	Subpart	Section	Subdiv.	Parag.	Subparag.	Cl.	Subcl.

Emission Unit Compliance Certification

☐ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

☐ Applicable Federal Requirement ☐ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS Number	Contaminant Name

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of a Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Compliance Activity Description

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer's Name/Model Number

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description

New York State Department of Environmental Conservation
Air Permit Application Form

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	1	a				

		CAS No.	Contaminant Name
☐ Applicable Federal Requirement ☒ State Only Requirement	☐ Capping		Cadmium Compounds

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

Cadmium compounds are classified as a High Toxicity Air Contaminant (HTAC). The facility owner or operator shall either limit the actual annual cadmium compound emissions from all process operations at the facility so as to not exceed the MEL listed for the individual HTAC of 1 pound/year; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants for the environmental rating assigned to the contaminant by the department.
The facility maintains operating hours of the casting furnaces (emission unit U-CAST1) to demonstrate actual annual cadmium compound emissions are less than 1 pound/year.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

Continuation Sheet _1___ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

DEC ID
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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	1	a				

		CAS No.	Contaminant Name
☐ Applicable Federal Requirement ☒ State Only Requirement	☐ Capping		Chromium Compounds

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

Chromium compounds are classified as a High Toxicity Air Contaminant (HTAC). The facility owner or operator shall either limit the actual annual chromium compound emissions from all process operations at the facility so as to not exceed the MEL listed for the individual HTAC of 250 pounds/year; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants for the environmental rating assigned to the contaminant by the department.
The facility maintains operating hours of the casting furnaces (emission unit U-CAST1) to demonstrate actual annual chromium compound emissions are less than 250 pounds/year.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

Continuation Sheet _2___ of _11___

DEC ID
6 - 3 0 1 3 - 0 0 0 9 1

Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	1	a				

		CAS No.	Contaminant Name
☐ Applicable Federal Requirement ☒ State Only Requirement	☐ Capping		Mercury Compounds

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☐ Work Practice Involving Specific Operations
- ☒ Record Keeping/Maintenance Procedures

Description

Mercury compounds are classified as a High Toxicity Air Contaminant (HTAC). The facility owner or operator shall either limit the actual annual mercury compound emissions from all process operations at the facility so as to not exceed the MEL listed for the individual HTAC of 5 pounds/year; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants for the environmental rating assigned to the contaminant by the department.
The facility maintains operating hours of the casting furnaces (emission unit U-CAST1) to demonstrate actual annual mercury compound emissions are less than 5 pounds/year.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

Continuation Sheet _3___ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DEC ID
6 - 3 0 1 3 - 0 0 0 9 1

Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	1	a				

		CAS No.	Contaminant Name
☐ Applicable Federal Requirement ☒ State Only Requirement	☐ Capping		Lead Compounds

Monitoring Information

- ☐ Continuous Emission Monitoring
- ☐ Intermittent Emission Testing
- ☐ Ambient Air Monitoring
- ☐ Monitoring of Process or Control Device Parameters as a Surrogate
- ☐ Work Practice Involving Specific Operations
- ☒ Record Keeping/Maintenance Procedures

Description

Lead compounds are classified as a High Toxicity Air Contaminant (HTAC). The facility owner or operator shall either limit the actual annual lead compound emissions from all process operations at the facility so as to not exceed the MEL listed for the individual HTAC of 5 pounds/year; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants for the environmental rating assigned to the contaminant by the department.
The facility maintains operating hours of the casting furnaces (emission unit U-CAST1) to demonstrate actual annual lead compound emissions are less than 5 pounds/year.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

New York State Department of Environmental Conservation
Air Permit Application Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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Section III - Facility Information

Facility Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	1	a				

☐ Applicable Federal Requirement ☒ State Only Requirement	☐ Capping	CAS No.	Contaminant Name
			Nickel Compounds

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

Nickel is classified as a High Toxicity Air Contaminant (HTAC). The facility owner or operator shall either limit the actual annual nickel compound emissions from all process operations at the facility so as to not exceed the MEL listed for the individual HTAC of 10 pounds/year; or demonstrate compliance with the air cleaning requirements for the HTAC as specified in subdivision 212-2.3(b), table 4 – degree of air cleaning required for non-criteria air contaminants for the environmental rating assigned to the contaminant by the department. The facility maintains operating hours of the casting furnaces (emission unit U-CAST1) to demonstrate actual annual nickel compound emissions are less than 10 pounds/year.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

Continuation Sheet _5___ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

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Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	a				

☒ Applicable Federal Requirement ☐ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-CAST1	00040			NY075-00-5	PM-10

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B and has an emission rate potential (ERP) of greater than or equal to 20 lb/hr and less than 100 lb/hr. As such, the facility must demonstrate a control efficiency of at least 91% is achieved, as specified in Subdivision 212-2.3(a), Table 3 – Degree of Air Cleaning Required for Criteria Air Contaminants.

While operating this process the source owner shall operate the baghouse within the pressure drop range determined during the most recent Department-approved performance test. Pressure drop readings will be monitored and recorded once per operating day to demonstrate proper operation of the cyclone and baghouse and effective control of PM-10. Until such time that a new performance test is conducted, the pressure limit in the current permit will be used (i.e., 2 to 6 inches of water).

Any noncompliance with the pressure drop range in this condition must be reported by sending a copy of such record to the NYSDEC, Region 6, within 30 days of the occurrence.

Other B-rated constituents (iron oxide, copper oxide, and graphite) have estimated ERPs greater than 10 lb/hr and are subject to 90% control in accordance with 212-2.3(b) Table 4. Compliance with the 91% control efficiency requirement for PM-10 will satisfy the 90% control requirement for the individual B-rated constituents.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		10	Pressure Change

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
		03	Daily	15	Annually (Calendar)

Continuation Sheet __6__ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

DEC ID
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Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	a				

☒ Applicable Federal Requirement ☐ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-CAST1	00040			NY075-02-5	PM-2.5

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B and has an emission rate potential (ERP) of greater than or equal to 20 lb/hr and less than 100 lb/hr. As such, the facility must demonstrate a control efficiency of at least 91% is achieved, as specified in Subdivision 212-2.3(a), Table 3 – Degree of Air Cleaning Required for Criteria Air Contaminants.

While operating this process the source owner shall operate the baghouse within the pressure drop range determined during the most recent Department-approved performance test. Pressure drop readings will be monitored and recorded once per operating day to demonstrate proper operation of the cyclone and baghouse and effective control of PM-2.5. Until such time that a new performance test is conducted, the pressure limit in the current permit will be used (i.e., 2 to 6 inches of water).

Any noncompliance with the pressure drop range in this condition must be reported by sending a copy of such record to the NYSDEC, Region 6, within 30 days of the occurrence.

Other B-rated constituents (iron oxide, copper oxide, and graphite) have estimated ERPs greater than 10 lb/hr and are subject to 90% control in accordance with 212-2.3(b) Table 4. Compliance with the 91% control efficiency requirement for PM-2.5 will satisfy the 90% control requirement for the individual B-rated constituents.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		10	Pressure Change

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
		03	Daily	15	Annually (Calendar)

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	a				

☒ Applicable Federal Requirement ☐ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-CAST1	00602			NY075-00-5	PM-10

Monitoring Information

☐ Continuous Emission Monitoring ☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Intermittent Emission Testing ☐ Work Practice Involving Specific Operations
☐ Ambient Air Monitoring ☐ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B and has an emission rate potential (ERP) of greater than or equal to 20 lb/hr and less than 100 lb/hr. As such, the facility must demonstrate a control efficiency of at least 91% is achieved, as specified in Subdivision 212-2.3(a), Table 3 – Degree of Air Cleaning Required for Criteria Air Contaminants.

While operating this process the source owner shall operate the baghouse within the pressure drop range determined during the most recent Department-approved performance test. Pressure drop readings will be monitored and recorded once per operating day to demonstrate proper operation of the cyclone and baghouse and effective control of PM-10.

Any noncompliance with the pressure drop range in this condition must be reported by sending a copy of such record to the NYSDEC, Region 6, within 30 days of the occurrence.

Other B-rated constituents (copper oxide and graphite) have estimated ERPs greater than 10 lb/hr and are subject to 90% control in accordance with 212-2.3(b) Table 4. Compliance with the 91% control efficiency requirement for PM-10 will satisfy the 90% control requirement for the individual B-rated constituents.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		10	Pressure Change

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
		03	Daily	15	Annually (Calendar)

Continuation Sheet _8___ of _11___

DEC ID
6 - 3 0 1 3 - 0 0 0 9 1

Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	a				

☒ Applicable Federal Requirement ☐ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-CAST1	00602			NY075-02-5	PM-2.5

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☒ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☐ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B and has an emission rate potential (ERP) of greater than or equal to 20 lb/hr and less than 100 lb/hr. As such, the facility must demonstrate a control efficiency of at least 91% is achieved, as specified in Subdivision 212-2.3(a), Table 3 – Degree of Air Cleaning Required for Criteria Air Contaminants.

While operating this process the source owner shall operate the baghouse within the pressure drop range determined during the most recent Department-approved performance test. Pressure drop readings will be monitored and recorded once per operating day to demonstrate proper operation of the cyclone and baghouse and effective control of PM-2.5.

Any noncompliance with the pressure drop range in this condition must be reported by sending a copy of such record to the NYSDEC, Region 6, within 30 days of the occurrence.

Other B-rated constituents (copper oxide and graphite) have estimated ERPs greater than 10 lb/hr and are subject to 90% control in accordance with 212-2.3(b) Table 4. Compliance with the 91% control efficiency requirement for PM-2.5 will satisfy the 90% control requirement for the individual B-rated constituents.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		10	Pressure Change

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
		03	Daily	15	Annually (Calendar)

Continuation Sheet __9__ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

DEC ID
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Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	b				

☐ Applicable Federal Requirement ☒ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-OVER1	00031			07440-50-8	Copper

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B. Non-criteria contaminants given an ER of B and having an emission rate potential (ERP) of less than 10 pounds per hour must demonstrate that ambient impacts of each contaminant at the fence line of the facility are less than the annual (AGC) and short term (SGC) guideline concentrations for the air contaminant, as specified in Subdivision 212-2.3(b), Table 4 – Degree of Air Cleaning Required for Non-Criteria Air Contaminants.

The facility is limiting annual operating hours of the Overhauler such that modeled impacts of copper are 95% or less of the copper AGC. The annual operating hour limit is to be based on the most recent Department-approved post-control hourly emission rate. Based on the May 2023 test results, the post-control hourly emission rate of copper from the Overhauler is 0.37 lb/hr and the resulting predicted annual impact based on 6,132 annual operating hours is 0.455 μg/m^3, which is 95% of the AGC of 0.48 μg/m^3.

The allowable annual operating hours will be adjusted based on the most recent Department-approved post-control hourly emission rate. The facility maintains monthly records of operating hours of the Overhauler (emission source 01715) to demonstrate 12-month operating hours are less than the annual operating hour cap.

Work Practice	Process Material		Reference Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

New York State Department of Environmental Conservation
Air Permit Application Form

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Section IV - Emission Unit Information

Emission Unit Compliance Certification (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
6	NYCRR	212	2	3	b				

☐ Applicable Federal Requirement ☒ State Only Requirement ☐ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
U-ROLL1	00026			04719-04-4	2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

Monitoring Information

☐ Continuous Emission Monitoring
☐ Intermittent Emission Testing
☐ Ambient Air Monitoring
☐ Monitoring of Process or Control Device Parameters as a Surrogate
☐ Work Practice Involving Specific Operations
☒ Record Keeping/Maintenance Procedures

Description

The contaminant listed above has been given an Environmental Rating (ER) of B. Non-criteria contaminants given an ER of B and having an emission rate potential (ERP) of less than 10 pounds per hour must demonstrate that ambient impacts of each contaminant at the fence line of the facility are less than the annual (AGC) and short term (SGC) guideline concentrations for the air contaminant, as specified in Subdivision 212-2.3(b), Table 4 – Degree of Air Cleaning Required for Non-Criteria Air Contaminants.

The facility is limiting annual operating hours of the Reversing Mill such that modeled impacts of 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol are 95% or less of the AGC. The annual operating hour limit is to be based on the most recent Department-approved post-control hourly emission rate. Based on the May 2023 test results, the post-control hourly emission rate of the above compound from the Reversing Mill is 0.021 lb/hr and the resulting predicted annual impact based on 7,858 annual operating hours is 0.057 µg/m3, which is 95% of the interim AGC assigned by NYSDEC of 0.06 µg/m3.

The allowable annual operating hours will be adjusted based on the most recent Department-approved post-control hourly emission rate. The facility maintains monthly records of operating hours of the Reversing Mill (emission source 01723) to demonstrate 12-month operating hours are less than the annual operating hour cap.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
17	Annual Max. Rolled Monthly	05	Monthly	15	Annually (Calendar)

Continuation Sheet _11___ of _11___

New York State Department of Environmental Conservation
Air Permit Application Form

DEC ID
6-3013-00091

Section IV - Emission Unit Information

Determination of Non-Applicability (continuation)

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	63	TTTTTT						

Emission Unit	Emission Point	Process	Emission Source	
U-CAST1				☐ Applicable Federal Requirement ☐ State Only Requirement

Description

The facility no longer produces or uses brass; therefore, it is no longer subject to 40 CFR Part 63, Subpart TTTTTT (6T). Secondary nonferrous metals processing facility is defined in Section 63.11472 as "a brass and bronze ingot making, secondary magnesium processing, or secondary zinc processing plant that uses furnace melting operations to melt post-consumer nonferrous metal scrap to make products including bars, ingots, blocks, or metal powders. Subpart 6T does not apply to secondary copper processing.

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause
40	CFR	63	JJJJJJ						

Emission Unit	Emission Point	Process	Emission Source	
U-COMB1				☐ Applicable Federal Requirement ☐ State Only Requirement

Description

The facility's boilers are operated as gas-fired boilers as defined in 40 CFR Part 63, Subpart JJJJJJ (6J). The facility is switching from No. 6 to No. 2 fuel oil as the back up fuel. Fuel oil is only fired during periods of natural gas curtailment or supply interruption, and up to 48 hours per year for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel does not exceed a combined total of 48 hours during any calendar year.

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

Emission Unit	Emission Point	Process	Emission Source	
				☐ Applicable Federal Requirement ☐ State Only Requirement

Description

Rule Citation

Title	Type	Part	Subpart	Section	Subdivision	Paragraph	Subparagraph	Clause	Subclause

Emission Unit	Emission Point	Process	Emission Source	
				☐ Applicable Federal Requirement ☐ State Only Requirement

Description

Continuation Sheet ____ of ____

Department of Environmental Conservation

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Supporting Documentation

- [ ] Aerial Photo (___ / ___ / _______)
- [ ] Air Quality Model (___ / ___ / _______)
- [ ] Air State Facility Permit (___ / ___ / _______)
- [ ] Air Title V Facility Permit (___ / ___ / _______)
- [ ] Alternative Fuel Monitoring Schedule (___ / ___ / _______)
- [ ] Ambient Air Monitoring Plan (___ / ___ / _______)
- [ ] Analysis of Contemporaneous Emission Increase/Decrease (___ / ___ / _______)
- [ ] Article 11, Title 5 Permit for Interference with Fish & Wildlife (___ / ___ / _______)
- [ ] Authorized Agent Letter (___ / ___ / _______)
- [x] BACT Demonstration (___ / ___ / _______) T-BACT In Attachment F
- [ ] Baseline Period Demonstration (___ / ___ / _______)
- [ ] Beneficial Use Determination (BUD) (___ / ___ / _______)
- [ ] Blasting Chart - Ground Vibration Limits (___ / ___ / _______)
- [ ] Building Identification Table (___ / ___ / _______)
- [x] Calculations (___ / ___ / _______) Emissions Inventory in Attachment C
- [ ] Capping Letter/Package (___ / ___ / _______)
- [ ] Certificate of Capacity (Resource Recovery Facility) (___ / ___ / _______)
- [x] CLCPA analysis (___ / ___ / _______) Exhibit 1
- [ ] Compliance Assurance Monitoring Plan (CAM) (___ / ___ / _______)
- [ ] Confidentiality Justification (___ / ___ / _______)
- [ ] Construction and Demolition Debris Tracking Document (___ / ___ / _______)
- [ ] Construction Detail Drawings (___ / ___ / _______)
- [ ] Continuous Emissions Monitoring Plans/QA/QC (___ / ___ / _______)
- [ ] Control Equipment Layout (___ / ___ / _______)
- [ ] Custom Schedule for Fuel Nitrogen and Sulfur Monitoring (___ / ___ / _______)
- [x] Dispersion modeling (___ / ___ / _______) Attachment E
- [ ] Drawings/Blueprints (___ / ___ / _______)
- [ ] Elevations/Sections (___ / ___ / _______)
- [x] Emission Inventory Report (___ / ___ / _______) Attachment C
- [ ] Emission Survey (___ / ___ / _______)
- [ ] Emission Unit Summary (___ / ___ / _______)
- [ ] EPA Memo Re: Technical Infeasibility of Monitoring Nitrogen in Fuel (___ / ___ / _______)
- [ ] Episode Action Plan (___ / ___ / _______)
- [ ] Equipment Manufacturers Information (___ / ___ / _______)
- [ ] ERC Quantification (___ / ___ / _______)
- [ ] Exemption Related Document (___ / ___ / _______)
- [ ] Existing Certificates to Operate and/or Permits to Construct (___ / ___ / _______)
- [ ] Existing Consent Order (___ / ___ / _______)
- [ ] Existing Methane Migration & Recovery Well Plan (___ / ___ / _______)
- [ ] Existing Permit Figures (___ / ___ / _______)
- [x] Facility Location Map (___ / ___ / _______) Attachment F
- [ ] Facility-Wide Operating Permit Submittal Schedule (___ / ___ / _______)
- [ ] Fugitive Dust Control Plan (___ / ___ / _______)
- [ ] General Flow Diagram (___ / ___ / _______)
- [ ] Generating Plant Site & Section Sheet (___ / ___ / _______)

DEC ID: 6301300091 **Application ID:** 630130009100039 **Renewal Number: 2**

Facility: REVERE COPPER PRODUCTS INC Oct 24, 2022 11:55 am

Supporting Documentation

- [ ] LAER Demonstration (___ / ___ / _______)
- [ ] Letter of Intent to Commence Work (___ / ___ / _______)
- [X] List of Exempt Activities ~~(form attached)~~ (___ / ___ / _______) Attachment B
- [ ] MACT Demonstration (___ / ___ / _______)
- [ ] Methods Used To Determine Compliance (form attached) (___ / ___ / _______)
- [X] Miscellaneous Attachments - Not Otherwise Specified (___ / ___ / _______) Commissioning Plan, Attachment H; Public Participation Plan, Exhibit 2; Alliance Source Testing Program and Results, Exhibit 3; Emergency Generator Certification, Exhibit 4; Degreaser SDS Excerpts, Exhibit 5; Annealer Fluids SDS Excerpts, Exhibit 6
- [ ] Miscellaneous Correspondence (___ / ___ / _______)
- [ ] Mitigation Planting Plan (___ / ___ / _______)
- [ ] MSDS Information Sheets (___ / ___ / _______)
- [ ] Non-CEM: Custom Monitoring, Recordkeeping and/or Reporting Plan (___ / ___ / _______)
- [ ] Notice Covenant (___ / ___ / _______)
- [ ] Notice of Intent to Commence Work (___ / ___ / _______)
- [ ] NOx RACT Compliance Plan (___ / ___ / _______)
- [ ] NOx RACT Operating Plan (___ / ___ / _______)
- [ ] Opacity Compliance Plan (___ / ___ / _______)
- [ ] Operational Flexibility:Desc of Alternative Operating Scenarios and Protocols (___ / ___ / _______)
- [ ] P.E. Certification (form attached) (___ / ___ / _______)
- [ ] Permit Sign (___ / ___ / _______)
- [ ] Pesticide Treatment Area Map (___ / ___ / _______)
- [ ] Photograph(s) (___ / ___ / _______)
- [ ] Plot Plan (___ / ___ / _______)
- [X] Process Flow Diagram(s) (___ / ___ / _______) Attachment B
- [ ] Process Material Specification Data (___ / ___ / _______)
- [ ] Process Operation Log Sheet(s) (___ / ___ / _______)
- [ ] Project Location Map (___ / ___ / _______)
- [ ] PSD Permit Correlation Tables (___ / ___ / _______)
- [ ] RACT Demonstration (___ / ___ / _______)
- [X] Regulatory Analysis Summary (___ / ___ / _______) Attachment D
- [X] Results of SEQR Review (___ / ___ / _______) Attachment G
- [ ] Seed Mixture Recommendations (___ / ___ / _______)
- [ ] Short Environmental Assessment Form (___ / ___ / _______)
- [ ] Site Plan (___ / ___ / _______)
- [ ] Solid Waste Annual Report Form (___ / ___ / _______)
- [ ] SPDES Permit (___ / ___ / _______)
- [ ] Stack Test Protocols/Reports (___ / ___ / _______)
- [ ] Title IV Acid Rain Permit Application (___ / ___ / _______)
- [ ] Transfer Form (___ / ___ / _______)
- [ ] VOC RACT Compliance Plan (___ / ___ / _______)
- [ ] Wood Waste Specifications (___ / ___ / _______)
- [ ] WQC - Basis for Conditions (___ / ___ / _______)

ATTACHMENT B
MATRIX OF EMISSION UNITS, PROCESSES, SOURCES, AND POINTS

Matrix of Emission Units, Processes, Emission Sources, Control Devices, and Emission Points[a]

Revere Copper Products, Inc.

Rome, New York

Emission Unit ID	Emission Unit Description	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	Building
U-ANNE1	This EU encompasses thirteen annealing units (Lee Wilson machine nos. 1729 to 1734, Ebner machine nos. 2383 to 2386, bright anneal machine no. 1154, strand anneal machine no. 1738, and tray style/coil anneal machine no. 464 entry and exit) used to anneal copper ~~and copper alloy~~ sheets from the rolling mills. All annealing units except for the tray style/coil anneal are located in the rolling mill. The Lee Wilson, Ebner, bright, strand, tray style/coil entry and tray style/coil exit exhaust through EPs 00369, 00440, 00367, 00027, 00189, and 00190 respectively. This EU also encompasses two sulfuric acid pickling lines (machines 1738 and 1740) used to clean copper ~~and copper allow~~ sheets. Machine 1738 exhausts through EP 00027, and machine 1740 exhausts through EP 00028. ~~The particulate~~ ~~e~~Emissions from pickling and cleaning processes (acid and cleaning material mists) are controlled by wet scrubbers.	DXG	The annealing atmosphere of DX gas emits ~~burned~~ by-products of combustion ~~natural gas~~.	00464	Tray Style/Coil Anneal (Entry and Exit)	---	---	00189/ 00190	1
				01154	Bright Anneal (Entry and Exit)	---	---	00367/ 00362	51
				01729	1729 Lee Wilson Anneal	---	---	00369	51
				01730	1730 Lee Wilson Anneal	---	---	00369	51
				01731	1731 Lee Wilson Anneal	---	---	00369	51
				01732	1732 Lee Wilson Anneal	---	---	00369	51
				01733	**1733 Lee Wilson Anneal**	---	---	00369	51
				01734	**1734 Lee Wilson Anneal**	---	---	00369	51
				01738	1738 Strand Anneal	---	---	00027	51
		FLD	The annealing process emits a small amount of ~~burned~~ volatilized residual lubricating/metalworking fluid.	**01154**	**Bright Anneal**	---	---	00367	51
				01729	1729 Lee Wilson Anneal	---	---	00369	51
				01730	1730 Lee Wilson Anneal	---	---	00369	51
				01731	1731 Lee Wilson Anneal	---	---	00369	51
				01732	1732 Lee Wilson Anneal	---	---	00369	51
				01733	**1733 Lee Wilson Anneal**	---	---	00369	51
				01734	**1734 Lee Wilson Anneal**	---	---	00369	51
				01738	1738 Strand Anneal	---	---	00027	51
				02383	**2383 Ebner Anneal**	---	---	00440	51
				02384	**2384 Ebner Anneal**	---	---	00440	51
				02385	2385 Ebner Anneal	---	---	00440	51
				02386	2386 Ebner Anneal	---	---	00440	51
		PCK	The emissions of acid and cleaning material mists from the pickling process are ducted to and controlled by wet scrubbers.	01738	1738 Strand Anneal Cleaning	00S38	Wet Scrubber	00027	51
				01740	1740 Heavy Gauge Cleaning (Entry and Exit)	00S40	Wet Scrubber	00028	51
U-CAST1	This EU encompasses the emissions from four ~~five~~ induction furnaces (machine nos. ~~1187,~~ 1799, 2443, 2056, and 2728 ~~2057~~). All of the furnaces are used to recycle (i.e., melt and pour) post consumer copper ~~and copper alloy materials, including brass~~. ~~The billet induction furnace (1187) forms cylindrical billets.~~ The ~~remaining~~ furnaces produce ingots and rectangular cakes. Furnaces ~~1187,~~ 1799~~,~~ and 2443 exhaust through EP 00039 and furnaces 2056 and 2728 ~~2057~~ exhaust through EP 00040. A central vacuum system is used for housekeeping purposes. The particulate emissions are controlled by cyclones and baghouses. In addition, federally enforceable special permit conditions exist for these emission points to limit the particulate emissions.	BH1	This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes including brass~~ (machine nos. ~~1187,~~ 1799~~,~~ and 2443). EP 00039 is associated with this process. Emissions are controlled by cyclones and baghouses. Each furnace has a hood that is ducted to the cyclone/baghouse unit associated with EP 00039.	~~01187~~	~~Billet Furnace~~	~~00B39/00C39~~	~~Single Cyclone/Fabric Filter~~	~~00039~~	~~21~~
				01799	1799 Holding Furnace	00B39/00C39	Single Cyclone/Fabric Filter	00039	21
				02443	2443 Melting Furnace	00B39/00C39	Single Cyclone/Fabric Filter	00039	21
		BH2	This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes including brass~~ (machine nos. 2056 and 2728 ~~2057~~). EP 00040 is associated with this process. Emissions are controlled by cyclones and baghouses. Each furnace has a hood that is ducted to the cyclone/baghouse unit associated with EP 00040.	02056	2056 Melting Furnace	00B40/00C40	Single Cyclone/Fabric Filter	00040	21
				02728	**2728 Melting Furnace**	00B40/00C40	Single Cyclone/Fabric Filter	00040	21
				~~02057~~	~~2057 Melting Furnace~~	~~00B40/00C40~~	~~Single Cyclone/Fabric Filter~~	~~00040~~	~~21~~

Matrix of Emission Units, Processes, Emission Sources, Control Devices, and Emission Points[a]

Revere Copper Products, Inc.

Rome, New York

Emission Unit ID	Emission Unit Description	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	Building
		BP1	This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes~~ (machine nos. ~~1187,~~ 1799~~,~~ and 2443) when the baghouse is bypassed. EP 00039 is associated with this process. Emissions are controlled by cyclones. Each furnace has a hood that is ducted to the cyclone unit associated with EP 00039.	~~01187~~	~~Billet Furnace~~	~~00C39~~	~~Single Cyclone~~	~~00039~~	~~21~~
				01799	1799 Holding Furnace	00C39	Single Cyclone	00039	21
				02443	2443 Melting Furnace	00C39	Single Cyclone	00039	21
		BP2	This process encompasses the emissions from the induction furnaces used to melt and pour copper ~~and copper alloy cakes~~ (machine nos. 2056 and ~~2057~~ 2728). EP 00040 is associated with this process. Emissions are controlled by cyclones. Each furnace has a hood that is ducted to the cyclone unit associated with EP 00040.	02056	2056 Melting Furnace	00C40	Single Cyclone	00040	21
				02728	**2728 Melting Furnace**	00B40/00C40	Single Cyclone	00040	21
				~~02057~~	~~2057 Melting Furnace~~	~~00C40~~	~~Single Cyclone~~	~~00040~~	~~21~~
		VAC	Central vacuum system to provide exhaust at multiple locations within the Cast Shop. ~~Approximately 17 drop points will be installed and the~~ The collected ~~capture~~ particulates are controlled through a cyclone and cartridge filter. The cartridge filter is located outside at ground level with discharge to the atmosphere.	CSVAC	Central Exhaust	CSB01/CSC01	Single Cyclone/Fabric Filter	00602	21
U-GALV1	This emission unit consists of a Zinc-Tin coating line to galvanize Copper~~, Copper Alloy and Stainless Steel~~ sheeting. The process consists of five sources for cleaning, surface preparation, sheet pre-heating and galvanizing. The sources include an acid pickling tank, a pre-flux tank, a dryer (exempt) and a Galvanizing pot that includes a top-flux kettle.	GAL	Process consists of metal preheater, top-flux application (Zinc-Potassium Chloride) and galvanizing kettle containing molten Tin(50%) and Zinc(50%) of emission source 02587. Emissions from galvanizing kettle ~~will be~~ are ducted to emission point 00601. Particulate emissions are controlled by a baghouse (S6001). A 9.7 MMBtu/hr natural gas fired furnace is used to preheat metal sheeting and melt Zinc-Tin metal.	02587	Molten Metal Tank for Zinc-Tin Coating	S6001	Fabric Filter	00601	51
		PIC	Process consists of Hydrochloric Acid (10%) pickling/cleaning tank at 180 degree F, and followed by a preflux solution tank containing Zinc-Ammonia-Barium Chloride (emission source 02587). Emissions from Hydrochloric Acid and preflux tanks are ducted to and controlled by a wet scrubber (S6000).	02587	Acid Tank	S6000	Wet Scrubber	00600	51

Matrix of Emission Units, Processes, Emission Sources, Control Devices, and Emission Points[(a)]

Revere Copper Products, Inc.

Rome, New York

Emission Unit ID	Emission Unit Description	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	Building
U-COMB1	This EU encompasses Boilers 1,2 & 3 located at the boiler house. Boilers 1 and 2 (42.0 MMBtu/hr boilers) exhaust through EP 00004. Boiler 3 (57.2 MMBtu/hr boiler) exhausts through EP 00003. Each boiler is dual-fueled (natural gas as the primary fuel and ~~No. 6~~ fuel oil as the back-up fuel). ~~Sulfur dioxide emissions are capped by restricting No. 6 fuel oil usage from all three boilers.~~ The boiler burners are being replaced with burners that will fire No. 2 fuel oil for backup instead of No. 6	F01	Three boilers firing ~~residual fuel oil (no. 6)~~ distillate fuel oil (No. 2) to produce steam for process heating and general heating.	00BR1	Boiler #1	---	~~---~~	00004	15
				00BR2	Boiler #2	---	~~---~~	00004	15
				00BR3	Boiler #3	---	~~---~~	00003	15
		G01	Three boilers firing natural gas to produce steam for process heating and general heating.	00BR1	Boiler #1	---	---	00004	15
				00BR2	Boiler #2	---	---	00004	15
				00BR3	Boiler #3	---	---	00003	15
U-FURN1	This EU encompasses the walking beam furnace (machine no. 1701) used to preheat copper ~~and copper alloy~~ cake prior to hot rolling. The furnace is fired by natural gas and has a maximum heat input rating of 51.8 MMBtu/hr. The emissions exhaust through EP 00041.	G02	Natural gas is fired in the furnace, used to reheat metal.	01701	1701 Walking Beam Furnace	---	---	00041	51
~~U-GRANC~~	~~This EU consists of a 16 MMBtu/hr natural gas-fired furnace used to heat billets before metal extrusion process. The furnace was installed in 1983, therefore, it was previously exempt from permitting under 6 NYCRR 201-~~	~~GAS~~	~~The Granco furnace heats billets to approximately 1750 deg. F for a metal extrusion process. The furnace fires natural gas exclusively.~~	~~GRANC~~	~~Granco Furnace~~	~~---~~	~~---~~	~~00180~~	~~1~~
U-OVER1	This EU encompasses the overhauler (machine no. 1715) used to shave the outside surface of copper ~~alloy~~ materials with cutter blades. This process produces chips and shavings, which are collected inside the exhaust system and sent back to the cast shop for remelting. The emissions exhaust through EP 00031. The particulate emissions are controlled by a wet scrubber/rotoclone.	OVR	The emissions from the cutting and shaving of the overhauler process are ducted to and controlled by the wet scrubber/rotoclone.	**01715**	**1715 Overhauler**	00C31	Wet Scrubber	00031	51
~~U-PTNRM~~	~~This EU encompasses the emissions from the sanding and coating processes in the Patina Room.~~	~~P01~~	~~This process encompasses the emissions from the sanding of copper/copper alloy sheets. Emissions are exhausted through a dust collector and then to EP 00500T.~~	~~PTNR1~~	~~---~~	~~BH500~~	~~Fabric Filter~~	~~00500~~	~~1~~
		~~P02~~	~~This process encompasses the emissions from the surface coating of copper/copper alloy sheet. The coating operation has an enclosed hood with a small centrifugal fan that vents internally to the Patina Room.~~	~~PTNR2~~	~~---~~	~~---~~	~~---~~	~~---~~	~~1~~

Matrix of Emission Units, Processes, Emission Sources, Control Devices, and Emission Points[(a)]

Revere Copper Products, Inc.

Rome, New York

Emission Unit ID	Emission Unit Description	Process ID	Process Description	Source ID	Source Description	Control ID	Control Description	Emission Point ID	Building
U-ROLL1	This EU encompasses five rolling mills (machine Nos. 1176, 1706, 1721, 1723, and 1724), which use lubricating/metalworking fluid in the rolling of copper ~~and copper alloy~~ sheets. Machine Nos. 1176, 1706, 1721, 1723, and 1724 exhaust through EPs 00036, 00 029, 00026, and 00025, respectively. Each mill emits a small amount of lubricating/ metalworking fluid. The emissions from EPs 00029, 00030, and 00036 are controlled by two mist eliminators and a baffle chamber, respectively.	ROL	The rolling process in each mill emits a small amount of lubricating/ metalworking fluid.	01176	1176 Bliss Mill	00C36	Baffle Chamber	00036	51
				01706	1706 Hot Mill	00C30	Mist Eliminator	00030	51
				01721	1721 First Run Down Mill	00C29	Mist Eliminator	00029	51
				01723	1723 Reversing Mill	---	---	00026	51
				01724	1724 Z-Mill	---	---	00025	51
U-SOLV1	This EU encompasses one non-exempt solvent degreaser located in the Rolling Mill Grinding Room. The degreaser exhausts fugitively to the room and uses a Subpart 226-1 compliant solvent.	SOL	Solvent emissions from the 550-gallon degreaser.	02600	Grinding Room Degreaser	---	---	---	51

Notes:

(a) Information changes from language in the existing Air State Facility Permit are indicated in red font, with stikeout indicating language to be removed.

ATTACHMENT C
EMISSION INVENTORY

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
U-COMB1	15 Boiler Room	00004	BR1 Boiler 1	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	42.0 million Btu per hour (MMBtu/hr)	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
		00004	BR2 Boiler 2	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	42.0 MMBtu/hr	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
		00003	BR3 Boiler 3	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	57.2 MMBtu/hr	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
U-CAST1	21 Cast Shop	00039	1799 Holding Furnace	BH1 Process (Baghouse) BP1 Process (By-pass)	---	Copper	6 NYCRR 212
		00039	2443 Melting Furnace	BH1 Process (Baghouse) BP1 Process (By-pass)	---	Copper	6 NYCRR 212
		00040	2056 Melting Furnace	BH2 Process (Baghouse) BP2 Process (By-pass)	---	Copper	6 NYCRR 212
		00040	New 2728 Melting Furnace	BH2 Process (Baghouse) BP2 Process (By-pass)	---	Copper	6 NYCRR 212
		~~00040~~	~~2057 Melting Furnace~~	~~BH1 Process (Baghouse)~~ ~~BP2 Process (By-pass)~~	~~---~~	~~Copper~~	~~6 NYCRR 212~~
		00602	Central Vacuum System	VAC Process	---	Fugitive Dust	6 NYCRR 212
U-FURN1	51 Rolling Mill	00041	1701 Walking Beam Furnace	G02 Combustion	51.8 MMBtu/hr	Natural gas	6 NYCRR 227-1.3(a)
U-OVER1	51 Rolling Mill	00031	1715 Overhauler	OVR Process	---	Copper sheet	6 NYCRR 212
U-ROLL1	51 Rolling Mill	00036	1176 Bliss Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00030	1706 Hot Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00029	1721 First Run Down Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00026	1723 Reversing Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
		00025	1724 Z-Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
U-ANNE1	51 Rolling Mill	00369	1729 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1730 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1731 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1732 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1733 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1734 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00440	2383 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2384 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2385 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2386 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00367/ 00362	1154 Bright Anneal (Entry and Exit)	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
		00027	1738 Strand Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Entry	PCK Process	---	Copper sheet and sulfuric acid	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Exit	PCK Process	---	Copper sheet and sulfuric acid	6 NYCRR 212
		00027	1738 Strand Anneal Cleaning	Cleaning	---	Cleaning solutions	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Entry	Cleaning	---	Cleaning solutions	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Exit	Cleaning	---	Cleaning solutions	6 NYCRR 212
	1 Bar Mill	00189/ 00190	464 Tray Style/Coil Anneal (Entry and Exit)	DXG Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
U-GALV1	51 Rolling Mill	00600	02587 - Muriatic Acid Pickling Tank	PIC Process	---	Copper sheet, muriatic acid, and flux	6 NYCRR 212
		00601	02587 - Galvanizing Kettle	GAL Process	---	Copper sheet, molten tin and zinc, and flux	6 NYCRR 212
			Galvanizing Furnace	Combustion	9.7 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)
U-SOLV1	51 Rolling Mill	Fugitive	Degreaser	SOL Process	550 Gallons	226-1 Compliant Solvent	6 NYCRR 226-1; 6 NYCRR 212
Exempt	51 Rolling Mill	00335	1727 Lee Wilson Anneal	Combustion	1.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00335	1728 Lee Wilson Anneal	Combustion	1.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00334	2381 Ebner Anneal	Combustion	1.6 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00334	2382 Ebner Anneal	Combustion	1.6 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00366	1154 Bright Anneal	Combustion	1.5 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00358	1738 Strand Anneal	Combustion	4.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	1 Bar Mill	00202	464 Tray Style/Coil Anneal	Combustion	1.5 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
	Main Office Bldg.		2 Building Heaters	Combustion	2 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Maint. Storage Bldg.		Building Heater	Combustion	0.074 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Operations Bldg.		Building Heater	Combustion	0.491 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Maint. Office Bldg.		Building Heater	Combustion	0.225 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Cast Shop Office Bldg.		Building Heater	Combustion	0.113 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Facility		22 Unit Heaters	Combustion	1 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Facility		10 Water Heaters	Combustion	0.25 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	~~Cast Shop~~		~~Emergency Generator~~	~~Combustion~~	~~94-hp~~	~~Natural gas~~	~~Exempt - 6 NYCRR 201-3.2(c)(6)~~
	Powerhouse		Emergency Generator	Combustion	168-hp	Diesel	Exempt - 6 NYCRR 201-3.2(c)(6)
	Soap House		Emergency Generator	Combustion	2680-hp	Diesel	Exempt - 6 NYCRR 201-3.2(c)(6)
	Main Office		Emergency Generator	Combustion	34-hp	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(6)
	Cast Shop		Emergency Generator - Coreless Furnace	Combustion	335-hp	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(6); 40 CFR 60 Subpart JJJJ
	1 Bar Mill Area		Sodium Hydroxide Storage Tank	---	6,000 gallon	---	Exempt - 6 NYCRR 201-3.2(c)(25)
	1 Bar Mill Area		Grinders for Maintenance	---	---	---	Trivial - 6 NYCRR 201-3.3(c)(52)
	1 Bar Mill Area		Bar Mill Tanks (Degreasing Units)	---	---	non-HAP acids / caustics	Trivial - 6 NYCRR 201-3.3(c)(47) and 6 NYCRR 201-3.3(c)(48)
	1 Bar Mill Area		Silver Plating Line (Silver Cyanide and Potassium Cyanide)	---	---	Cyanide compounds	(b)
	Facility		Degreaser (Simple Green)	---	---	Caustics	Trivial - 6 NYCRR 201-3.3(c)(48)

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements

Notes:

(a) Revere has switched the oil fired by the boilers from No. 6 to No. 2 fuel oil.

(b) The silver plating line had internal worker exposure testing performed in the past, which showed that the only exposures to workers were particulate matter when mixing the solution. As this is not exhausted to atmosphere, this operation not considered an air emissions source and emissions were not quantified.

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
U-COMB1 Natural Gas Combustion (Table 3)							
Carbon Monoxide	00630-08-0	7,938	4.0	101,863	51		
Nitrogen Oxides	NY210-00-0	9,450	4.7	121,266	61		
Sulfur Dioxide	07446-09-5	57	2.8E-02	728	0.36		
Total Particulate Matter	NY075-00-0	718	0.36	9,216	4.6		
PM_{10}	NY075-00-5	718	0.36	9,216	4.6		
$PM_{2.5}$	NY075-02-5	718	0.36	9,216	4.6		
Volatile Organic Compounds	NY998-00-0	520	0.26	6,670	3.3		
Carbon Dioxide	00124-38-9	11,275,324	5,638	144,689,112	72,345		
Methane	00074-82-8	213	0.11	2,727	1.4		
Nitrous Oxide	10024-97-2	21	1.1E-02	273	0.14		
Carbon Dioxide Equivalents	CO2e	11,299,507	5,650	144,999,433	72,500		
Total HAPs	NY100-00-0	178	8.9E-02	2,290	1.1		
Arsenic	07440-38-2	1.9E-02	9.5E-06	0.24	1.2E-04		
Benzene	00071-43-2	0.20	9.9E-05	2.5	1.3E-03		
Beryllium	07440-41-7	1.1E-03	5.7E-07	1.5E-02	7.3E-06		
Cadmium	07440-43-9	0.10	5.2E-05	1.3	6.7E-04		
Chromium	07440-47-3	0.13	6.6E-05	1.7	8.5E-04		
Cobalt	07440-48-4	7.9E-03	4.0E-06	0.10	5.1E-05		
Dichlorobenzene	25321-22-6	0.11	5.7E-05	1.5	7.3E-04		
Formaldehyde	00050-00-0	7.1	3.5E-03	91	4.5E-02		
Hexane	00110-54-3	170	8.5E-02	2,183	1.1		
Lead	07439-92-1	4.7E-02	2.4E-05	0.61	3.0E-04		
Manganese	07439-96-5	3.6E-02	1.8E-05	0.46	2.3E-04		
Mercury	07439-97-6	2.5E-02	1.2E-05	0.32	1.6E-04		
Naphthalene	00091-20-3	5.8E-02	2.9E-05	0.74	3.7E-04		
Nickel	07440-02-0	0.20	9.9E-05	2.5	1.3E-03		
Polycyclic Organic Matter	POM	8.3E-03	4.2E-06	0.11	5.3E-05		
Selenium	07782-49-2	2.3E-03	1.1E-06	2.9E-02	1.5E-05		
Toluene	00108-88-3	0.32	1.6E-04	4.1	2.1E-03		

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Miscellaneous Facility-Wide Natural Gas Combustion (Table 3)							
Carbon Monoxide	00630-08-0	36,491	18	69,688	35		
Nitrogen Oxides	NY210-00-0	43,442	22	82,962	41		
Sulfur Dioxide	07446-09-5	261	0.13	498	0.25		
Total Particulate Matter	NY075-00-0	3,302	1.7	6,305	3.2		
PM_{10}	NY075-00-5	3,302	1.7	6,305	3.2		
$PM_{2.5}$	NY075-02-5	3,302	1.7	6,305	3.2		
Volatile Organic Compounds	NY998-00-0	2,389	1.2	4,563	2.3		
Carbon Dioxide	00124-38-9	51,832,501	25,916	98,986,740	49,493		
Methane	00074-82-8	977	0.49	1,866	0.93		
Nitrous Oxide	10024-97-2	98	4.9E-02	187	9.3E-02		
Carbon Dioxide Equivalents	CO2e	51,943,669	25,972	99,199,041	49,600		
Total HAPs	NY100-00-0	820	0.41	1,567	0.78		
Arsenic	07440-38-2	8.7E-02	4.3E-05	0.17	8.3E-05		
Benzene	00071-43-2	0.91	4.6E-04	1.7	8.7E-04		
Beryllium	07440-41-7	5.2E-03	2.6E-06	1.0E-02	5.0E-06		
Cadmium	07440-43-9	0.48	2.4E-04	0.91	4.6E-04		
Chromium	07440-47-3	0.61	3.0E-04	1.2	5.8E-04		
Cobalt	07440-48-4	3.6E-02	1.8E-05	7.0E-02	3.5E-05		
Dichlorobenzene	25321-22-6	0.52	2.6E-04	1.00	5.0E-04		
Formaldehyde	00050-00-0	33	1.6E-02	62	3.1E-02		
Hexane	00110-54-3	782	0.39	1,493	0.75		
Lead	07439-92-1	0.22	1.1E-04	0.41	2.1E-04		
Manganese	07439-96-5	0.17	8.3E-05	0.32	1.6E-04		
Mercury	07439-97-6	0.11	5.6E-05	0.22	1.1E-04		
Naphthalene	00091-20-3	0.26	1.3E-04	0.51	2.5E-04		
Nickel	07440-02-0	0.91	4.6E-04	1.7	8.7E-04		
Polycyclic Organic Matter	POM	3.8E-02	1.9E-05	7.3E-02	3.7E-05		
Selenium	07782-49-2	1.0E-02	5.2E-06	2.0E-02	1.0E-05		
Toluene	00108-88-3	1.5	7.4E-04	2.8	1.4E-03		

Table 2
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Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
DX Gas Combustion (Table 4)							
Carbon Monoxide	00630-08-0	4,706	2.4	5,124	2.6		
Nitrogen Oxides	NY210-00-0	5,602	2.8	6,100	3.1		
Sulfur Dioxide	07446-09-5	34	1.7E-02	37	1.8E-02		
Total Particulate Matter	NY075-00-0	426	0.21	464	0.23		
PM_{10}	NY075-00-5	426	0.21	464	0.23		
$PM_{2.5}$	NY075-02-5	426	0.21	464	0.23		
Volatile Organic Compounds	NY998-00-0	308	0.15	336	0.17		
Carbon Dioxide	00124-38-9	6,684,640	3,342	7,278,805	3,639		
Methane	00074-82-8	126	6.3E-02	137	6.9E-02		
Nitrous Oxide	10024-97-2	13	6.3E-03	14	6.9E-03		
Carbon Dioxide Equivalents	CO2e	6,698,977	3,349	7,294,416	3,647		
Total HAPs	NY100-00-0	106	5.3E-02	115	5.8E-02		
Arsenic	07440-38-2	1.1E-02	5.6E-06	1.2E-02	6.1E-06		
Benzene	00071-43-2	0.12	5.9E-05	0.13	6.4E-05		
Beryllium	07440-41-7	6.7E-04	3.4E-07	7.3E-04	3.7E-07		
Cadmium	07440-43-9	6.2E-02	3.1E-05	6.7E-02	3.4E-05		
Chromium	07440-47-3	7.8E-02	3.9E-05	8.5E-02	4.3E-05		
Cobalt	07440-48-4	4.7E-03	2.4E-06	5.1E-03	2.6E-06		
Dichlorobenzene	25321-22-6	6.7E-02	3.4E-05	7.3E-02	3.7E-05		
Formaldehyde	00050-00-0	4.2	2.1E-03	4.6	2.3E-03		
Hexane	00110-54-3	101	5.0E-02	110	5.5E-02		
Lead	07439-92-1	2.8E-02	1.4E-05	3.1E-02	1.5E-05		
Manganese	07439-96-5	2.1E-02	1.1E-05	2.3E-02	1.2E-05		
Mercury	07439-97-6	1.5E-02	7.3E-06	1.6E-02	7.9E-06		
Naphthalene	00091-20-3	3.4E-02	1.7E-05	3.7E-02	1.9E-05		
Nickel	07440-02-0	0.12	5.9E-05	0.13	6.4E-05		
Polycyclic Organic Matter	POM	4.9E-03	2.5E-06	5.4E-03	2.7E-06		
Selenium	07782-49-2	1.3E-03	6.7E-07	1.5E-03	7.3E-07		
Toluene	00108-88-3	0.19	9.5E-05	0.21	1.0E-04		

Confidential

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Fuel Oil Combustion (Table 5)							
Carbon Monoxide	00630-08-0	283	0.14	44,175	22		
Nitrogen Oxides	NY210-00-0	1,133	0.57	176,702	88		
Sulfur Dioxide	07446-09-5	12	6.0E-03	1,882	0.94		
Total Particulate Matter	NY075-00-0	187	9.3E-02	29,156	15		
PM_{10}	NY075-00-5	57	2.8E-02	8,835	4.4		
$PM_{2.5}$	NY075-02-5	14	7.1E-03	2,209	1.1		
Carbon Dioxide	00124-38-9	1,312,719	656	204,789,904	102,395		
Nitrous Oxide	10024-97-2	52	2.6E-02	8,181	4.1		
Methane	00074-82-8	10	5.2E-03	1,636	0.82		
Carbon Dioxide Equivalents	CO2e	1,320,249	660	205,964,651	102,982		
Volatile Organic Compounds	NY998-00-0	11	5.7E-03	1,767	0.88		
Total HAPs	NY100-00-0	4.0	2.0E-03	629	0.31		
Arsenic	07440-38-2	3.2E-02	1.6E-05	4.9	2.5E-03		
Beryllium	07440-41-7	2.4E-02	1.2E-05	3.7	1.9E-03		
Cadmium	07440-43-9	2.4E-02	1.2E-05	3.7	1.9E-03		
Chromium	07440-47-3	2.4E-02	1.2E-05	3.7	1.9E-03		
Formaldehyde	00050-00-0	3.5	1.7E-03	539	0.27		
Lead	07439-92-1	7.1E-02	3.6E-05	11	5.6E-03		
Manganese	07439-96-5	4.8E-02	2.4E-05	7.4	3.7E-03		
Mercury	07439-96-5	4.8E-02	2.4E-05	7.4	3.7E-03		
Nickel	07440-02-0	2.4E-02	1.2E-05	3.7	1.9E-03		
Polycyclic Organic Matter	POM	0.19	9.3E-05	29	1.5E-02		
Selenium	07782-49-2	0.12	5.9E-05	19	9.3E-03		
Emergency Generators (Table 6)							
Carbon Monoxide	00630-08-0	208	0.10	10,422	5.2		
Nitrogen Oxides	NY210-00-0	636	0.32	33,532	17		
Sulfur Dioxide	07446-09-5	8.6	4.3E-03	185	9.2E-02		
Total Particulate Matter	NY075-00-0	20	9.9E-03	848	0.42		
PM_{10}	NY075-00-5	18	8.8E-03	719	0.36		
$PM_{2.5}$	NY075-02-5	16	8.1E-03	631	0.32		

Table 2
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Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[a] (tpy)	Major Source Threshold (tpy)
Volatile Organic Compounds	NY998-00-0	32	1.6E-02	1,349	0.67		
Carbon Dioxide	00124-38-9	33,105	17	1,782,146	891		
Methane	00074-82-8	37	1.9E-02	1,565	0.78		
Nitrous Oxide	10024-97-2	0.00	0.0E+00	0.0	0.0E+00		
Total HAPs	NY100-00-0	2.4	1.2E-03	102	5.1E-02		
Acenaphthene	00083-32-9	7.8E-04	3.9E-07	4.6E-02	2.3E-05		
Acenaphthylene	00208-96-8	1.7E-03	8.4E-07	9.6E-02	4.8E-05		
Acetaldehyde	00075-07-0	0.27	1.4E-04	11	5.4E-03		
Acrolein	00107-02-8	0.16	8.0E-05	6.5	3.2E-03		
Anthracene	00120-12-7	2.4E-04	1.2E-07	1.3E-02	6.3E-06		
Benzene	00071-43-2	0.16	8.2E-05	8.5	4.3E-03		
Benz(a)anthracene	00056-55-3	1.4E-04	7.1E-08	6.8E-03	3.4E-06		
Benz(a)pyrene	00050-32-8	4.4E-05	2.2E-08	2.5E-03	1.3E-06		
Benzo(b)fluoranthene	00205-99-2	1.7E-04	8.7E-08	1.1E-02	5.3E-06		
Benzo(g,h,i)perylene	00191-24-2	1.1E-04	5.5E-08	6.0E-03	3.0E-06		
Benzo(e)pyrene	00192-97-2	1.2E-05	5.8E-09	4.9E-04	2.4E-07		
Benzo(b,k)fluoranthene	00207-08-9	3.7E-05	1.9E-08	2.1E-03	1.1E-06		
Biphenyl	00092-52-4	6.0E-03	3.0E-06	0.25	1.2E-04		
Carbon Tetrachloride	00056-23-5	1.1E-03	5.6E-07	4.5E-02	2.3E-05		
Chlorobenzene	00108-90-7	9.2E-04	4.6E-07	3.7E-02	1.9E-05		
Chloroethane	00075-00-3	5.3E-05	2.6E-08	2.2E-03	1.1E-06		
Chloroform	00067-66-3	8.7E-04	4.3E-07	3.5E-02	1.7E-05		
Chrysene	00218-01-9	2.6E-04	1.3E-07	1.5E-02	7.7E-06		
Dibenzo(a,h)anthracene	00053-70-3	6.9E-05	3.4E-08	3.6E-03	1.8E-06		
1,1-Dichloroethane	00075-34-3	7.2E-04	3.6E-07	2.9E-02	1.4E-05		
1,2-Dichloroethane	00107-06-2	7.2E-04	3.6E-07	2.9E-02	1.4E-05		
1,2-Dichloropropane	00078-87-5	8.2E-04	4.1E-07	3.3E-02	1.6E-05		
1,3-Dichloropropene	00542-75-6	8.0E-04	4.0E-07	3.2E-02	1.6E-05		
Ethylbenzene	00100-41-4	1.2E-03	6.2E-07	4.9E-02	2.5E-05		
Ethylene Dibromide	00106-93-4	1.3E-03	6.7E-07	5.4E-02	2.7E-05		
Ethylene Dichloride	00107-06-2	7.2E-04	3.6E-07	2.9E-02	1.4E-05		
Fluoranthene	00206-44-0	8.6E-04	4.3E-07	4.3E-02	2.2E-05		

Table 2
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Revere Copper Products, Inc
Rome, NY

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Fluorene	00086-73-7	2.9E-03	1.5E-06	0.14	7.2E-05		
Formaldehyde	00050-00-0	1.6	8.1E-04	66	3.3E-02		
Hexane	00110-54-3	3.1E-02	1.6E-05	1.3	6.5E-04		
Indeno(1,2,3-cd)pyrene	00193-39-5	7.3E-05	3.6E-08	4.1E-03	2.0E-06		
Naphthalene	00091-20-3	2.5E-02	1.2E-05	1.4	6.8E-04		
PAH	130498-29-2	1.4E-03	7.1E-07	4.8E-02	2.4E-05		
Phenanthrene	00085-01-8	7.3E-03	3.6E-06	0.41	2.1E-04		
Pyrene	00129-00-0	7.3E-04	3.7E-07	3.9E-02	2.0E-05		
Styrene	00100-42-5	7.2E-04	3.6E-07	2.9E-02	1.5E-05		
1,1,2,2-Tetrachloroethane	00079-34-5	1.2E-03	6.2E-07	5.0E-02	2.5E-05		
Toluene	00108-88-3	6.8E-02	3.4E-05	3.4	1.7E-03		
1,1,2-Trichloroethane	00079-00-5	9.7E-04	4.8E-07	3.9E-02	2.0E-05		
2,2,4-Trimethylpentane	00540-84-1	7.0E-03	3.5E-06	0.29	1.5E-04		
Vinyl Chloride	00075-01-4	4.5E-04	2.3E-07	1.8E-02	9.1E-06		
Xylenes	01330-20-7	4.3E-02	2.2E-05	2.2	1.1E-03		
U-CAST1 Furnaces (Table 7)							
Total Particulate Matter	NY075-00-0	11,673	5.8	22,669	11		
PM_{10}	NY075-00-5	6,202	3.1	13,226	6.6		
$PM_{2.5}$	NY075-02-5	2,223	1.1	4,596	2.3		
Graphite	07782-42-5	4,705	2.4	9,180	4.6		
Copper oxide	01317-38-0	3,593	1.8	7,010	3.5		
Iron oxide	01309-37-1	1,068	0.53	2,084	1.0		
Aluminum oxide	01344-28-1	32	1.6E-02	63	3.1E-02		
Zinc oxide	01314-13-2	9.9	4.9E-03	19	9.6E-03		
Magnesium oxide	01309-48-4	2.8	1.4E-03	5.4	2.7E-03		
Barium oxide	01304-28-5	0.43	2.2E-04	0.84	4.2E-04		
Silver oxide	20667-12-3	0.11	5.7E-05	0.22	1.1E-04		
Total HAPs	NY100-00-0	6.7	3.3E-03	13	6.5E-03		
Lead oxide	01314-41-6	3.9	1.9E-03	7.5	3.8E-03		
Manganese oxide	01313-13-9	2.8	1.4E-03	5.4	2.7E-03		
Nickel oxide	01313-99-1	0.25	1.2E-04	0.48	2.4E-04		

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Cadmium oxide	01306-19-0	8.0E-02	4.0E-05	0.16	7.8E-05		
Chromium oxide	01333-82-0	0.11	5.5E-05	0.21	1.1E-04		
Mercury oxide	21908-53-2	1.0E-03	5.2E-07	2.0E-03	1.0E-06		
U-CAST1 VAC Process (Table 8)							
Total Particulate Matter	NY075-00-0	12	6.2E-03	315	0.16		
PM_{10}	NY075-00-5	12	6.2E-03	315	0.16		
$PM_{2.5}$	NY075-02-5	12	6.2E-03	315	0.16		
Graphite	07782-42-5	5.0	2.5E-03	126	6.3E-02		
Copper oxide	01317-38-0	3.8	1.9E-03	96	4.8E-02		
Iron oxide	01309-37-1	1.1	5.7E-04	29	1.4E-02		
Aluminum oxide	01344-28-1	3.4E-02	1.7E-05	0.86	4.3E-04		
Zinc oxide	01314-13-2	1.0E-02	5.2E-06	0.26	1.3E-04		
Magnesium oxide	01309-48-4	2.9E-03	1.5E-06	7.4E-02	3.7E-05		
Barium oxide	01304-28-5	4.6E-04	2.3E-07	1.2E-02	5.8E-06		
Silver oxide	20667-12-3	1.2E-04	6.1E-08	3.1E-03	1.5E-06		
Total HAPs	NY100-00-0	7.5E-03	3.7E-06	0.19	9.4E-05		
Lead oxide	01314-41-6	4.1E-03	2.0E-06	0.10	5.2E-05		
Manganese oxide	01313-13-9	2.9E-03	1.5E-06	7.4E-02	3.7E-05		
Nickel oxide	01313-99-1	2.6E-04	1.3E-07	6.6E-03	3.3E-06		
Cadmium oxide	01306-19-0	8.4E-05	4.2E-08	2.1E-03	1.1E-06		
Chromium oxide	01333-82-0	1.2E-04	5.8E-08	2.9E-03	1.5E-06		
Mercury oxide	21908-53-2	1.1E-06	5.5E-10	2.8E-05	1.4E-08		
U-ROLL1 (Table 9)							
Total Particulate Matter	NY075-00-0	9,282	4.6	22,232	11		
PM_{10}	NY075-00-5	9,039	4.5	21,891	11		
$PM_{2.5}$	NY075-02-5	7,960	4.0	20,424	10		
Propane-1,2-diol	00057-55-6	111	5.6E-02	166	8.3E-02		
Hexylene glycol	00107-41-5	59	2.9E-02	68	3.4E-02		
2-Butoxyethanol	00111-76-2	2.2E-07	1.1E-10	1.3E-06	6.3E-10		
2-Amino-2-methyl-1-propanol	00124-68-5	3.0E-02	1.5E-05	0.18	8.8E-05		

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Alkanolamine	00141-43-5	195	9.8E-02	476	0.24		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	11	5.6E-03	17	8.3E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	243	0.12	540	0.27		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	111	5.6E-02	166	8.3E-02		
Nonylphenol, ethoxylated	09016-45-9	193	9.7E-02	473	0.24		
Fatty alcohol alkoxylate	37335-03-8	0.15	7.6E-05	0.88	4.4E-04		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	186	9.3E-02	277	0.14		
Amines, tallow alkyl, ethoxylated	61791-26-2	111	5.6E-02	166	8.3E-02		
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	1,000	0.50	1,162	0.58		
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.79	3.9E-04	4.6	2.3E-03		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	754	0.38	7,293	3.6		
Sulfonic acids, petroleum, sodium salts	68608-26-4	305	0.15	639	0.32		
Petroleum distillates	Trade Secret #1	4.3E-06	2.2E-09	2.5E-05	1.3E-08		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)	(b)	(b)		
Base oil	Trade Secret #3	193	9.7E-02	473	0.24		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	3,340	1.7	4,993	2.5		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	111	5.6E-02	166	8.3E-02		
Trade Secret	Trade Secret #8	371	0.19	555	0.28		
U-OVER1 (Table 10)							
Total Particulate Matter	NY075-00-0	17,713	8.9	19,441	10		
PM_{10}	NY075-00-5	4,368	2.2	4,794	2.4		
$PM_{2.5}$	NY075-02-5	4,004	2.0	4,394	2.2		
Copper	07440-50-8	2,250	1.1	2,470	1.2		
Tin	07440-31-5	3.3E-02	1.6E-05	3.6E-02	1.8E-05		
Silver	07440-22-4	1.5E-02	7.3E-06	1.6E-02	8.0E-06		
Tellurium	13494-80-9	3.6E-03	1.8E-06	4.0E-03	2.0E-06		

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	2,208	1.1	2,424	1.2		
Proprietary emulsifier	Trade Secret #6	315	0.16	346	0.17		
HAPs	NY100-00-0	2.3E-03	1.2E-06	2.6E-03	1.3E-06		
Phosphorus	07723-14-0	2.3E-03	1.2E-06	2.6E-03	1.3E-06		
U-ANNE1 (Table 11)							
VOC	NY998-00-0	187	9.3E-02	521	0.26		
Diethylene glycol	00111-46-6	8.1	4.1E-03	13	6.4E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03	14	7.2E-03		
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03	10	5.1E-03		
Polyethylene glycol	25322-68-3	11	5.3E-03	20	9.8E-03		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	156	7.8E-02	456	0.23		
Petroleum distillates	Trade Secret #1	15	7.6E-03	29	1.5E-02		
Azole derivative	Trade Secret #7	10	5.2E-03	18	9.0E-03		
U-ANNE1 - Pickling (Table 12)							
Total Particulate Matter	NY075-00-0	1,276	0.64	1,276	0.64		
PM_{10}	NY075-00-5	1,276	0.64	1,276	0.64		
$PM_{2.5}$	NY075-02-5	1,276	0.64	1,276	0.64		
Sulfuric acid	07664-93-9	1,276	0.64	1,276	0.64		
U-ANNE1 - Cleaning (Table 13)							
Total Particulate Matter	NY075-00-0	152	7.6E-02	312	0.16		
PM_{10}	NY075-00-5	152	7.6E-02	312	0.16		
$PM_{2.5}$	NY075-02-5	152	7.6E-02	312	0.16		
Diethylene glycol	00111-46-6	1.6E-02	8.0E-06	9.8E-02	4.9E-05		
Sodium metasilicate	06834-92-0	13	6.7E-03	26	1.3E-02		
Hydrogen peroxide	07722-84-1	18	8.9E-03	49	2.4E-02		
Sodium phosphate, tribasic	10101-89-0	5.3	2.7E-03	10	5.2E-03		
Polyethylene glycol	25322-68-3	0.19	9.6E-05	1.2	5.9E-04		

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Azole derivative	Trade Secret #7	0.19	9.6E-05	1.2	5.9E-04		
U-GALV1 Molten Tank (Table 14)							
Total Particulate Matter	NY075-00-0	3.9	1.9E-03	183	9.2E-02		
PM_{10}	NY075-00-5	3.9	1.9E-03	183	9.2E-02		
$PM_{2.5}$	NY075-02-5	3.9	1.9E-03	183	9.2E-02		
Zinc	07440-66-6	1.9	9.6E-04	91	4.5E-02		
Tin	07440-31-5	1.9	9.6E-04	91	4.5E-02		
Zinc chloride	07646-85-7	2.7E-02	1.4E-05	1.3	6.4E-04		
Ammonium chloride	12125-02-9	1.2E-02	5.8E-06	0.55	2.7E-04		
U-GALV1 Acid Tank (Table 15)							
Total Particulate Matter	NY075-00-0	3.3	1.6E-03	155	7.8E-02		
PM_{10}	NY075-00-5	3.3	1.6E-03	155	7.8E-02		
$PM_{2.5}$	NY075-02-5	3.3	1.6E-03	155	7.8E-02		
Zinc chloride	07646-85-7	0.25	1.3E-04	12	6.0E-03		
Barium chloride	10361-37-2	0.25	1.3E-04	12	6.0E-03		
Ammonium chloride	12125-02-9	0.25	1.3E-04	12	6.0E-03		
HAPs	NY100-00-0	2.5	1.3E-03	119	6.0E-02		
Hydrogen chloride	07647-01-0	2.5	1.3E-03	119	6.0E-02		
Parts Washer (Table 16)							
VOC	NY998-00-0	181	9.1E-02	434	0.22		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02	434	0.22		
Process Source Emissions Subject to Part 212, Total							
Total Particulate Matter	NY075-00-0	39,980	20	66,585	33		
PM_{10}	NY075-00-5	20,831	10	42,153	21		
$PM_{2.5}$	NY075-02-5	15,496	7.7	31,657	16		
Propane-1,2-diol	00057-55-6	111	5.6E-02	166	8.3E-02		
Hexylene glycol	00107-41-5	59	2.9E-02	68	3.4E-02		
2-Amino-2-methyl-1-propanol	00124-68-5	3.0E-02	1.5E-05	0.18	8.8E-05		

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Alkanolamine	00141-43-5	195	9.8E-02	476	0.24		
Barium oxide	01304-28-5	0.42	2.1E-04	0.85	4.3E-04		
Iron oxide	01309-37-1	1,049	0.52	2,112	1.1		
Magnesium oxide	01309-48-4	2.7	1.4E-03	5.4	2.7E-03		
Zinc oxide	01314-13-2	9.7	4.8E-03	19	9.7E-03		
Copper oxide	01317-38-0	3,528	1.8	7,106	3.6		
Aluminum oxide	01344-28-1	32	1.6E-02	64	3.2E-02		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	11	5.6E-03	17	8.3E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	243	0.12	540	0.27		
Sodium metasilicate	06834-92-0	13	6.7E-03	26	1.3E-02		
Silver	07440-22-4	1.5E-02	7.3E-06	1.6E-02	8.0E-06		
Tin	07440-31-5	1.9	9.7E-04	91	4.5E-02		
Copper	07440-50-8	2,250	1.1	2,470	1.2		
Zinc	07440-66-6	1.9	9.6E-04	91	4.5E-02		
Zinc chloride	07646-85-7	0.28	1.4E-04	13	6.6E-03		
Hydrogen chloride	07647-01-0	2.5	1.3E-03	119	6.0E-02		
Sulfuric acid	07664-93-9	1,276	0.64	1,276	0.64		
Hydrogen peroxide	07722-84-1	18	8.9E-03	49	2.4E-02		
Graphite	07782-42-5	4,620	2.3	9,306	4.7		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	111	5.6E-02	166	8.3E-02		
Nonylphenol, ethoxylated	09016-45-9	193	9.7E-02	473	0.24		
Sodium phosphate, tribasic	10101-89-0	5.3	2.7E-03	10	5.2E-03		
Barium chloride	10361-37-2	0.25	1.3E-04	12	6.0E-03		
Ammonium chloride	12125-02-9	0.26	1.3E-04	12	6.2E-03		
Tellurium	13494-80-9	3.6E-03	1.8E-06	4.0E-03	2.0E-06		
Silver oxide	20667-12-3	0.11	5.6E-05	0.23	1.1E-04		
Fatty alcohol alkoxylate	37335-03-8	0.15	7.6E-05	0.88	4.4E-04		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	186	9.3E-02	277	0.14		
Amines, tallow alkyl, ethoxylated	61791-26-2	111	5.6E-02	166	8.3E-02		
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	1,000	0.50	1,162	0.58		

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Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.79	3.9E-04	4.6	2.3E-03		
Sulfonic acids, petroleum, sodium salts	68608-26-4	305	0.15	639	0.32		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)	(b)	(b)		
Base oil	Trade Secret #3	193	9.7E-02	473	0.24		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5,548	2.8	7,417	3.7		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	111	5.6E-02	166	8.3E-02		
Proprietary emulsifier	Trade Secret #6	315	0.16	346	0.17		
Trade Secret	Trade Secret #8	371	0.19	555	0.28		
VOC	NY998-00-0	368	0.18	955	0.48		
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03	10	5.1E-03		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02	434	0.22		
Particulate/VOC[(c)]							
Diethylene glycol	00111-46-6	8.1	4.1E-03	13	6.4E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03	14	7.2E-03		
Polyethylene glycol	25322-68-3	11	5.4E-03	21	1.0E-02		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	910	0.46	7,749	3.9		
Petroleum distillates	Trade Secret #1	15	7.6E-03	29	1.5E-02		
Azole derivative	Trade Secret #7	11	5.3E-03	19	9.6E-03		
Total HAPs	NY100-00-0	9.1	4.5E-03	133	6.6E-02		
Cadmium oxide	01306-19-0	7.8E-02	3.9E-05	0.16	7.9E-05		
Nickel oxide	01313-99-1	0.24	1.2E-04	0.49	2.4E-04		
Lead oxide	01314-41-6	3.8	1.9E-03	7.6	3.8E-03		
Chromium oxide	01333-82-0	0.11	5.4E-05	0.22	1.1E-04		
Hydrogen chloride	07647-01-0	2.5	1.3E-03	119	6.0E-02		
Phosphorus	07723-14-0	2.3E-03	1.2E-06	2.6E-03	1.3E-06		
Mercury oxide	21908-53-2	1.0E-03	5.1E-07	2.1E-03	1.0E-06		

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Facility Total							
Carbon Monoxide	00630-08-0	49,626	25	187,098	94		100
Nitrogen Oxides	NY210-00-0	60,262	30	299,296	150	95	100
Sulfur Dioxide	07446-09-5	372	0.19	2,601	1.3	95	100
Carbon Dioxide	00124-38-9	71,138,289	35,569	312,837,596	156,419		
Methane	00074-82-8	1,363	0.68	6,295	3.1		
Nitrous Oxide	10024-97-2	184	0.09	8,381	4.2		
Carbon Dioxide Equivalents	CO2e	71,262,402	35,631	312,458,109	156,229		
Total Particulate Matter	NY075-00-0	44,768	22	103,357	52	90	
PM_{10}	NY075-00-5	25,576	13	58,857	29	90	100
$PM_{2.5}$	NY075-02-5	20,110	10	48,273	24	90	100
Propane-1,2-diol	00057-55-6	111	5.6E-02	166	8.3E-02		
Hexylene glycol	00107-41-5	59	2.9E-02	68	3.4E-02		
2-Amino-2-methyl-1-propanol	00124-68-5	3.0E-02	1.5E-05	0.18	8.8E-05		
Alkanolamine	00141-43-5	195	9.8E-02	476	0.24		
Barium oxide	01304-28-5	0.43	2.2E-04	8.5E-01	4.3E-04		
Iron oxide	01309-37-1	1,069	0.53	2,112	1.1		
Magnesium oxide	01309-48-4	2.8	1.4E-03	5.4	2.7E-03		
Zinc oxide	01314-13-2	9.9	4.9E-03	19	9.7E-03		
Copper oxide	01317-38-0	3,597	1.8	7,106	3.6		
Aluminum oxide	01344-28-1	32	1.6E-02	64	3.2E-02		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	11	5.6E-03	17	8.3E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	243	0.12	540	0.27		
Sodium metasilicate	06834-92-0	13.3	6.7E-03	26	1.3E-02		
Silver	07440-22-4	1.5E-02	7.3E-06	1.6E-02	8.0E-06		
Tin	07440-31-5	1.9	9.7E-04	91	4.5E-02		
Copper	07440-50-8	2,250	1.1	2,470	1.2		
Zinc	07440-66-6	1.9	9.6E-04	91	4.5E-02		
Zinc chloride	07646-85-7	0.28	1.4E-04	13	6.6E-03		
Hydrogen chloride	07647-01-0	2.5	1.3E-03	119	6.0E-02		
Sulfuric acid	07664-93-9	1,276	0.64	1,276	0.64		

Table 2
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Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[a] (tpy)	Major Source Threshold (tpy)
Hydrogen peroxide	07722-84-1	18	8.9E-03	49	2.4E-02		
Graphite	07782-42-5	4,710	2.4	9,306	4.7		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	111	5.6E-02	166	8.3E-02		
Nonylphenol, ethoxylated	09016-45-9	193	9.7E-02	473	0.24		
Sodium phosphate, tribasic	10101-89-0	5.3	2.7E-03	10	5.2E-03		
Barium chloride	10361-37-2	0.25	1.3E-04	12	6.0E-03		
Ammonium chloride	12125-02-9	0.26	1.3E-04	12	6.2E-03		
Tellurium	13494-80-9	3.6E-03	1.8E-06	4.0E-03	2.0E-06		
Silver oxide	20667-12-3	0.11	5.7E-05	0.23	1.1E-04		
Fatty alcohol alkoxylate	37335-03-8	0.15	7.6E-05	0.88	4.4E-04		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	186	9.3E-02	277	0.14		
Amines, tallow alkyl, ethoxylated	61791-26-2	111	5.6E-02	166	8.3E-02		
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	1,000	0.50	1,162	0.58		
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.79	3.9E-04	4.6	2.3E-03		
Sulfonic acids, petroleum, sodium salts	68608-26-4	305	0.15	639	0.32		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)	(b)	(b)		
Base oil	Trade Secret #3	193	9.7E-02	473	0.24		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5,548	2.8	7,417	3.7		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	111	5.6E-02	166	8.3E-02		
Proprietary emulsifier	Trade Secret #6	315	0.16	346	0.17		
Trade Secret	Trade Secret #8	371	0.19	555	0.28		
Volatile Organic Compounds	NY998-00-0	3,628	1.8	13,873	6.9		50
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03	10	5.1E-03		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02	434	0.22		
Particulate/VOC[c]							
Diethylene glycol	00111-46-6	8.1	4.1E-03	13	6.4E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03	14	7.2E-03		
Polyethylene glycol	25322-68-3	11	5.4E-03	21	1.0E-02		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	910	0.46	7,749	3.9		

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Revere Copper Products, Inc
Rome, NY

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Petroleum distillates	Trade Secret #1	15	7.6E-03	29	1.5E-02		
Azole derivative	Trade Secret #7	11	5.3E-03	19	9.6E-03		
Total HAPs	NY100-00-0	1,120	0.56	4,206	2.1		25
Formaldehyde	00050-00-0	49	2.4E-02	671	0.34		10
Benz(a)pyrene	00050-32-8	4.4E-05	2.2E-08	2.5E-03	1.3E-06		10
Dibenzo(a,h)anthracene	00053-70-3	6.9E-05	3.4E-08	3.6E-03	1.8E-06		10
Carbon Tetrachloride	00056-23-5	1.1E-03	5.6E-07	4.5E-02	2.3E-05		10
Benz(a)anthracene	00056-55-3	1.4E-04	7.1E-08	6.8E-03	3.4E-06		10
Chloroform	00067-66-3	8.7E-04	4.3E-07	3.5E-02	1.7E-05		10
Benzene	00071-43-2	1.4	7.0E-04	13	6.5E-03		10
Chloroethane	00075-00-3	5.3E-05	2.6E-08	2.2E-03	1.1E-06		10
Vinyl Chloride	00075-01-4	4.5E-04	2.3E-07	1.8E-02	9.1E-06		10
Acetaldehyde	00075-07-0	0.27	1.4E-04	11	5.4E-03		10
1,1-Dichloroethane	00075-34-3	7.2E-04	3.6E-07	2.9E-02	1.4E-05		10
1,2-Dichloropropane	00078-87-5	8.2E-04	4.1E-07	3.3E-02	1.6E-05		10
1,1,2-Trichloroethane	00079-00-5	9.7E-04	4.8E-07	3.9E-02	2.0E-05		10
1,1,2,2-Tetrachloroethane	00079-34-5	1.2E-03	6.2E-07	5.0E-02	2.5E-05		10
Acenaphthene	00083-32-9	7.8E-04	3.9E-07	4.6E-02	2.3E-05		10
Phenanthrene	00085-01-8	7.3E-03	3.6E-06	0.41	2.1E-04		10
Fluorene	00086-73-7	2.9E-03	1.5E-06	0.14	7.2E-05		10
Naphthalene	00091-20-3	0.38	1.9E-04	2.6	1.3E-03		10
Biphenyl	00092-52-4	6.0E-03	3.0E-06	0.25	1.2E-04		10
Ethylbenzene	00100-41-4	1.2E-03	6.2E-07	4.9E-02	2.5E-05		10
Styrene	00100-42-5	7.2E-04	3.6E-07	2.9E-02	1.5E-05		10
Ethylene Dibromide	00106-93-4	1.3E-03	6.7E-07	5.4E-02	2.7E-05		10
Acrolein	00107-02-8	0.16	8.0E-05	6.5	3.2E-03		10
Ethylene Dichloride	00107-06-2	1.4E-03	7.2E-07	5.8E-02	2.9E-05		10
Toluene	00108-88-3	2.1	1.0E-03	11	5.3E-03		10
Chlorobenzene	00108-90-7	9.2E-04	4.6E-07	3.7E-02	1.9E-05		10
Hexane	00110-54-3	1,053	0.53	3,787	1.9		10
Anthracene	00120-12-7	2.4E-04	1.2E-07	1.3E-02	6.3E-06		10
Pyrene	00129-00-0	7.3E-04	3.7E-07	3.9E-02	2.0E-05		10

Confidential

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Potential Annual Emissions (lb/yr)	Potential Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Benzo(g,h,i)perylene	00191-24-2	1.1E-04	5.5E-08	6.0E-03	3.0E-06		10
Benzo(e)pyrene	00192-97-2	1.2E-05	5.8E-09	4.9E-04	2.4E-07		10
Indeno(1,2,3-cd)pyrene	00193-39-5	7.3E-05	3.6E-08	4.1E-03	2.0E-06		10
Benzo(b)fluoranthene	00205-99-2	1.7E-04	8.7E-08	1.1E-02	5.3E-06		10
Fluoranthene	00206-44-0	8.6E-04	4.3E-07	4.3E-02	2.2E-05		10
Benzo(b,k)fluoranthene	00207-08-9	3.7E-05	1.9E-08	2.1E-03	1.1E-06		10
Acenaphthylene	00208-96-8	1.7E-03	8.4E-07	9.6E-02	4.8E-05		10
Chrysene	00218-01-9	2.6E-04	1.3E-07	1.5E-02	7.7E-06		10
2,2,4-Trimethylpentane	00540-84-1	7.0E-03	3.5E-06	0.29	1.5E-04		10
1,3-Dichloropropene	00542-75-6	8.0E-04	4.0E-07	3.2E-02	1.6E-05		10
Cadmium oxide	01306-19-0	8.0E-02	4.0E-05	0.16	7.9E-05		10
Nickel oxide	01313-99-1	0.25	1.2E-04	0.49	2.4E-04		10
Lead oxide	01314-41-6	3.9	1.9E-03	7.6	3.8E-03		10
Xylenes	01330-20-7	4.3E-02	2.2E-05	2.2	1.1E-03		10
Chromium oxide	01333-82-0	1.1E-01	5.5E-05	0.22	1.1E-04		10
Lead	07439-92-1	0.36	1.8E-04	12	5.8E-03		10
Manganese	07439-96-5	0.32	1.6E-04	15	7.6E-03		10
Mercury	07439-96-5	0.32	1.6E-04	15	7.6E-03		10
Nickel	07440-02-0	1.3	6.3E-04	5.6	2.8E-03		10
Arsenic	07440-38-2	0.15	7.4E-05	5.1	2.6E-03		10
Beryllium	07440-41-7	3.1E-02	1.5E-05	3.7	1.9E-03		10
Cadmium	07440-43-9	0.67	3.3E-04	4.7	2.3E-03		10
Chromium	07440-47-3	0.8	4.2E-04	5.0	2.5E-03		10
Cobalt	07440-48-4	4.9E-02	2.5E-05	0.18	8.8E-05		10
Hydrogen chloride	07647-01-0	2.5	1.3E-03	119	6.0E-02		10
Phosphorus	07723-14-0	2.3E-03	1.2E-06	2.6E-03	1.3E-06		10
Selenium	07782-49-2	0.13	6.6E-05	19	9.3E-03		10
PAH	130498-29-2	1.4E-03	7.1E-07	4.8E-02	2.4E-05		10
Mercury oxide	21908-53-2	1.0E-03	5.2E-07	2.1E-03	1.0E-06		10
Dichlorobenzene	25321-22-6	0.70	3.5E-04	2.5	1.3E-03		10
Polycyclic Organic Matter	POM	0.24	1.2E-04	29	1.5E-02		10

Table 2
Summary of Facility Total Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

		Actual Annual Emissions		Potential Annual Emissions		Emission Cap[(a)]	Major Source Threshold
Emission Source and Contaminants	CAS Number	(lb/yr)	(tpy)	(lb/yr)	(tpy)	(tpy)	(tpy)

Notes:

(a) Emission caps are based on existing and proposed caps. The sulfur dioxide cap will no longer be required due to the change from No. 6 to No. 2 fuel oil combustion by the boilers and the current sulfur content limit of No. 2 fuel oil. Based on the updated emission estimates, the Total Particulate Matter, PM_{10}, and $PM_{2.5}$ caps will no longer be required.

(b) This pollutant is present in a biocide applied on some of the Rolling Mills and was included in the prior permit application as being potentially emitted from the Rolling Mills. Upon further investigation, the biocide is completely consumed by the bacteria within 24 hours of application and is not expected to be released to the atmosphere. As such, this biocide has been removed from the Emission Inventory tables. This pollutant has been left in the inventory to maintain the same Trade Secret identification methodology to avoid possible confusion.

(c) Contaminants in this section are emitted as a particulate oil mist from some processes and as gaseous VOCs from others.

Table 3

Natural Gas Combustion
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factors[a] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Future Projected Fuel Usage[b] (MMscf/year)	Potential Fuel Usage[c] (MMscf/year)	Actual Annual Emissions[d] (lb/yr)	Actual Annual Emissions[d] (tpy)	Potential Annual Emissions[e] (lb/yr)	Potential Annual Emissions[e] (tpy)
U-COMB1			**141**	**94.5**	**1,213**				
Three boilers (two at 42 MMBtu/hr ea and one at 57.2 MMBtu/hr) firing natural gas.									
Carbon Monoxide	00630-08-0	84				7,938	4.0	101,863	51
Nitrogen Oxides	NY210-00-0	100				9,450	4.7	121,266	61
Sulfur Dioxide	07446-09-5	0.60				57	2.8E-02	728	0.36
PM (Total)	NY075-00-0	7.6				718	0.36	9,216	4.6
PM_{10}	NY075-00-5	7.6				718	0.36	9,216	4.6
$PM_{2.5}$	NY075-02-5	7.6				718	0.36	9,216	4.6
Carbon Dioxide	00124-38-9	119,316				11,275,324	5,638	144,689,112	72,345
Methane	00074-82-8	2.2				213	0.11	2,727	1.4
Nitrous Oxide	10024-97-2	0.22				21	1.1E-02	273	0.14
Volatile Organic Compounds	NY998-00-0	5.5				520	0.26	6,670	3.3
Total HAPs	NY100-00-0					178	8.9E-02	2,290	1.1
Arsenic	07440-38-2	2.0E-04				1.9E-02	9.5E-06	0.24	1.2E-04
Benzene	00071-43-2	2.1E-03				0.20	9.9E-05	2.5	1.3E-03
Beryllium	07440-41-7	1.2E-05				1.1E-03	5.7E-07	1.5E-02	7.3E-06
Cadmium	07440-43-9	1.1E-03				0.10	5.2E-05	1.3	6.7E-04
Chromium	07440-47-3	1.4E-03				0.13	6.6E-05	1.7	8.5E-04
Cobalt	07440-48-4	8.4E-05				7.9E-03	4.0E-06	0.10	5.1E-05
Dichlorobenzene	25321-22-6	1.2E-03				0.11	5.7E-05	1.5	7.3E-04
Formaldehyde	00050-00-0	7.5E-02				7.1	3.5E-03	91	4.5E-02
Hexane	00110-54-3	1.8				170	8.5E-02	2,183	1.1
Lead	07439-92-1	5.0E-04				4.7E-02	2.4E-05	0.61	3.0E-04
Manganese	07439-96-5	3.8E-04				3.6E-02	1.8E-05	0.46	2.3E-04
Mercury	07439-97-6	2.6E-04				2.5E-02	1.2E-05	0.32	1.6E-04
Naphthalene	00091-20-3	6.1E-04				5.8E-02	2.9E-05	0.74	3.7E-04
Nickel	07440-02-0	2.1E-03				0.20	9.9E-05	2.5	1.3E-03
Polycyclic Organic Matter	POM	8.8E-05				8.3E-03	4.2E-06	0.11	5.3E-05
Selenium	07782-49-2	2.4E-05				2.3E-03	1.1E-06	2.9E-02	1.5E-05
Toluene	00108-88-3	3.4E-03				0.32	1.6E-04	4.1	2.1E-03

Table 3

Natural Gas Combustion

Summary of Actual and Potential Emissions

Revere Copper Products, Inc

Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factors[a] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Future Projected Fuel Usage[b] (MMscf/year)	Potential Fuel Usage[c] (MMscf/year)	Actual Annual Emissions[d] (lb/yr)	Actual Annual Emissions[d] (tpy)	Potential Annual Emissions[e] (lb/yr)	Potential Annual Emissions[e] (tpy)
Miscellaneous Facility-Wide			**97**	**434**	**830**				
Facility-Wide Natural Gas Combustion across all other combustion units.									
Carbon Monoxide	00630-08-0	84				36,491	18	69,688	35
Nitrogen Oxides	NY210-00-0	100				43,442	22	82,962	41
Sulfur Dioxide	07446-09-5	0.60				261	0.13	498	0.25
PM (Total)	NY075-00-0	7.6				3,302	1.7	6,305	3.2
PM_{10}	NY075-00-5	7.6				3,302	1.7	6,305	3.2
$PM_{2.5}$	NY075-02-5	7.6				3,302	1.7	6,305	3.2
Carbon Dioxide	00124-38-9	119,316				51,832,501	25,916	98,986,740	49,493
Methane	00074-82-8	2.2				977	0.49	1,866	0.93
Nitrous Oxide	10024-97-2	0.22				98	4.9E-02	187	9.3E-02
Volatile Organic Compounds	NY998-00-0	5.5				2,389	1.2	4,563	2.3
Total HAPs	NY100-00-0					820	0.41	1,567	0.78
Arsenic	07440-38-2	2.0E-04				8.7E-02	4.3E-05	0.17	8.3E-05
Benzene	00071-43-2	2.1E-03				0.91	4.6E-04	1.7	8.7E-04
Beryllium	07440-41-7	1.2E-05				5.2E-03	2.6E-06	1.0E-02	5.0E-06
Cadmium	07440-43-9	1.1E-03				0.48	2.4E-04	0.91	4.6E-04
Chromium	07440-47-3	1.4E-03				0.61	3.0E-04	1.2	5.8E-04
Cobalt	07440-48-4	8.4E-05				3.6E-02	1.8E-05	7.0E-02	3.5E-05
Dichlorobenzene	25321-22-6	1.2E-03				0.52	2.6E-04	1.00	5.0E-04
Formaldehyde	00050-00-0	7.5E-02				33	1.6E-02	62	3.1E-02
Hexane	00110-54-3	1.8				782	0.39	1,493	0.75
Lead	07439-92-1	5.0E-04				0.22	1.1E-04	0.41	2.1E-04
Manganese	07439-96-5	3.8E-04				0.17	8.3E-05	0.32	1.6E-04
Mercury	07439-97-6	2.6E-04				0.11	5.6E-05	0.22	1.1E-04
Naphthalene	00091-20-3	6.1E-04				0.26	1.3E-04	0.51	2.5E-04
Nickel	07440-02-0	2.1E-03				0.91	4.6E-04	1.7	8.7E-04
Polycyclic Organic Matter	POM	8.8E-05				3.8E-02	1.9E-05	7.3E-02	3.7E-05
Selenium	07782-49-2	2.4E-05				1.0E-02	5.2E-06	2.0E-02	1.0E-05
Toluene	00108-88-3	3.4E-03				1.5	7.4E-04	2.8	1.4E-03

Table 3

Natural Gas Combustion
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factors[a] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Future Projected Fuel Usage[b] (MMscf/year)	Potential Fuel Usage[c] (MMscf/year)	Actual Annual Emissions[d]		Potential Annual Emissions[e]	
						(lb/yr)	(tpy)	(lb/yr)	(tpy)

Notes:

(a) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.4 - Natural Gas Combustion (July 1998). Greenhouse gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.

(b) The Future Projected Fuel Usage for the miscellaneous units (other than the main boilers) is scaled up from 2022 to reflect increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(c) Potential Fuel Usage (MMscf/yr) = Total Heat Input Rating (MMBtu/hr) x 8,760 (hr/yr) ÷ 1,020 (MMBtu/MMscf).

(d) Actual Emissions (lb/yr) = Actual Fuel Usage (MMscf/yr) x Emission Factors (lb/MMscf).

Actual Emissions (ton/yr) = Actual Emissions (lb/yr) ÷ 2000 (lb/ton).

(e) Potential Emissions (lb/yr) = Potential Fuel Usage (MMscf/yr) x Emission Factors (lb/MMscf).

Potential Emissions (ton/yr) = Potential Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 4
DXG Combustion[a]
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[c] (MMscf/year)	Potential Fuel Usage[d] (MMscf/year)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
01729-01734			**1.25E-03**	**9.2**	**22**				
Six Lee Wilson Annealing Units in the Rolling Mill									
Carbon Monoxide	00630-08-0	84				774	0.39	1,840	0.92
Nitrogen Oxides	NY210-00-0	100				922	0.46	2,190	1.1
Sulfur Dioxide	07446-09-5	0.6				5.5	2.8E-03	13	6.6E-03
PM (Total)	NY075-00-0	7.6				70	3.5E-02	166	8.3E-02
PM_{10}	NY075-00-5	7.6				70	3.5E-02	166	8.3E-02
$PM_{2.5}$	NY075-02-5	7.6				70	3.5E-02	166	8.3E-02
Carbon Dioxide	00124-38-9	119,316				1,099,840	550	2,613,012	1,307
Methane	00074-82-8	2.2				21	1.0E-02	49	2.5E-02
Nitrous Oxide	10024-97-2	0.2				2.1	1.0E-03	4.9	2.5E-03
Volatile Organic Compounds	NY998-00-0	5.5				51	2.5E-02	120	6.0E-02
Total HAPs	NY100-00-0					17	8.7E-03	41	2.1E-02
Arsenic	07440-38-2	2.0E-04				1.8E-03	9.2E-07	4.4E-03	2.2E-06
Benzene	00071-43-2	2.1E-03				1.9E-02	9.7E-06	4.6E-02	2.3E-05
Beryllium	07440-41-7	1.2E-05				1.1E-04	5.5E-08	2.6E-04	1.3E-07
Cadmium	07440-43-9	1.1E-03				1.0E-02	5.1E-06	2.4E-02	1.2E-05
Chromium	07440-47-3	1.4E-03				1.3E-02	6.5E-06	3.1E-02	1.5E-05
Cobalt	07440-48-4	8.4E-05				7.7E-04	3.9E-07	1.8E-03	9.2E-07
Dichlorobenzene	25321-22-6	1.2E-03				1.1E-02	5.5E-06	2.6E-02	1.3E-05
Formaldehyde	00050-00-0	7.5E-02				0.69	3.5E-04	1.6	8.2E-04
Hexane	00110-54-3	1.8E+00				17	8.3E-03	39	2.0E-02
Lead	07439-92-1	5.00E-04				4.6E-03	2.3E-06	1.1E-02	5.5E-06
Manganese	07439-96-5	3.8E-04				3.5E-03	1.8E-06	8.3E-03	4.2E-06
Mercury	07439-97-6	2.6E-04				2.4E-03	1.2E-06	5.7E-03	2.8E-06
Naphthalene	00091-20-3	6.1E-04				5.6E-03	2.8E-06	1.3E-02	6.7E-06
Nickel	07440-02-0	2.1E-03				1.9E-02	9.7E-06	4.6E-02	2.3E-05
Polycyclic Organic Matter	POM	8.8E-05				8.1E-04	4.1E-07	1.9E-03	9.7E-07
Selenium	07782-49-2	2.4E-05				2.2E-04	1.1E-07	5.3E-04	2.6E-07
Toluene	00108-88-3	3.4E-03				3.1E-02	1.6E-05	7.4E-02	3.7E-05

Table 4
DXG Combustion[(a)]
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(b)] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[(c)] (MMscf/year)	Potential Fuel Usage[(d)] (MMscf/year)	Actual Annual Emissions[(e)] (lb/yr)	Actual Annual Emissions[(e)] (tpy)	Potential Annual Emissions[(f)] (lb/yr)	Potential Annual Emissions[(f)] (tpy)
01154			**8.07E-04**	**4.5**	**7.1**				
One Bright Anneal Unit in the Rolling Mill									
Carbon Monoxide	00630-08-0	84				378	0.19	594	0.30
Nitrogen Oxides	NY210-00-0	100				451	0.23	707	0.35
Sulfur Dioxide	07446-09-5	0.60				2.7	1.4E-03	4.2	2.1E-03
PM (Total)	NY075-00-0	7.6				34	1.7E-02	54	2.7E-02
PM_{10}	NY075-00-5	7.6				34	1.7E-02	54	2.7E-02
$PM_{2.5}$	NY075-02-5	7.6				34	1.7E-02	54	2.7E-02
Volatile Organic Compounds	NY998-00-0	5.5				25	1.2E-02	39	1.9E-02
Carbon Dioxide	00124-38-9	119,316				537,596	269	843,480	422
Methane	00074-82-8	2.2				10	5.1E-03	16	7.9E-03
Nitrous Oxide	10024-97-2	0.22				1.0	5.1E-04	1.6	7.9E-04
Total HAPs	NY100-00-0					8.5	4.3E-03	13	6.7E-03
Arsenic	07440-38-2	2.0E-04				9.0E-04	4.5E-07	1.4E-03	7.1E-07
Benzene	00071-43-2	2.1E-03				9.5E-03	4.7E-06	1.5E-02	7.4E-06
Beryllium	07440-41-7	1.2E-05				5.4E-05	2.7E-08	8.5E-05	4.2E-08
Cadmium	07440-43-9	1.1E-03				5.0E-03	2.5E-06	7.8E-03	3.9E-06
Chromium	07440-47-3	1.4E-03				6.3E-03	3.2E-06	9.9E-03	4.9E-06
Cobalt	07440-48-4	8.4E-05				3.8E-04	1.9E-07	5.9E-04	3.0E-07
Dichlorobenzene	25321-22-6	1.2E-03				5.4E-03	2.7E-06	8.5E-03	4.2E-06
Formaldehyde	00050-00-0	7.5E-02				0.34	1.7E-04	0.53	2.7E-04
Lead	07439-92-1	5.0E-04				2.3E-03	1.1E-06	3.5E-03	1.8E-06
Hexane	00110-54-3	1.8				8.1	4.1E-03	13	6.4E-03
Manganese	07439-96-5	3.8E-04				1.7E-03	8.6E-07	2.7E-03	1.3E-06
Mercury	07439-97-6	2.6E-04				1.2E-03	5.9E-07	1.8E-03	9.2E-07
Naphthalene	00091-20-3	6.1E-04				2.7E-03	1.4E-06	4.3E-03	2.2E-06
Nickel	07440-02-0	2.1E-03				9.5E-03	4.7E-06	1.5E-02	7.4E-06
Polycyclic Organic Matter	POM	8.8E-05				4.0E-04	2.0E-07	6.2E-04	3.1E-07
Selenium	07782-49-2	2.4E-05				1.1E-04	5.4E-08	1.7E-04	8.5E-08
Toluene	00108-88-3	3.4E-03				1.5E-02	7.7E-06	2.4E-02	1.2E-05

Table 4
DXG Combustion[a]
Summary of Actual and Potential Emissions

Revere Copper Products, Inc

Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[c] (MMscf/year)	Potential Fuel Usage[d] (MMscf/year)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
01738			**1.47E-03**	**37**	**13**				
One Strand Anneal Unit in the Rolling Mill									
Carbon Monoxide	00630-08-0	84				3,082	1.5	1,079	0.54
Nitrogen Oxides	NY210-00-0	100				3,669	1.8	1,285	0.64
Sulfur Dioxide	07446-09-5	0.60				22	1.1E-02	7.7	3.9E-03
PM (Total)	NY075-00-0	7.6				279	1.4E-01	98	4.9E-02
PM_{10}	NY075-00-5	7.6				279	1.4E-01	98	4.9E-02
$PM_{2.5}$	NY075-02-5	7.6				279	1.4E-01	98	4.9E-02
Volatile Organic Compounds	NY998-00-0	5.5				202	1.0E-01	71	3.5E-02
Carbon Dioxide	00124-38-9	119,316				4,377,426	2,189	1,533,315	767
Methane	00074-82-8	2.2				82	4.1E-02	29	1.4E-02
Nitrous Oxide	10024-97-2	0.22				8.2	4.1E-03	2.9	1.4E-03
Total HAPs	NY100-00-0					69	3.5E-02	24	1.2E-02
Arsenic	07440-38-2	2.0E-04				7.3E-03	3.7E-06	2.6E-03	1.3E-06
Benzene	00071-43-2	2.1E-03				7.7E-02	3.9E-05	2.7E-02	1.3E-05
Beryllium	07440-41-7	1.2E-05				4.4E-04	2.2E-07	1.5E-04	7.7E-08
Cadmium	07440-43-9	1.1E-03				4.0E-02	2.0E-05	1.4E-02	7.1E-06
Chromium	07440-47-3	1.4E-03				5.1E-02	2.6E-05	1.8E-02	9.0E-06
Cobalt	07440-48-4	8.4E-05				3.1E-03	1.5E-06	1.1E-03	5.4E-07
Dichlorobenzene	25321-22-6	1.2E-03				4.4E-02	2.2E-05	1.5E-02	7.7E-06
Formaldehyde	00050-00-0	7.5E-02				2.8	1.4E-03	0.96	4.8E-04
Hexane	00110-54-3	1.8				66	3.3E-02	23	1.2E-02
Lead	07439-92-1	5.0E-04				1.8E-02	9.2E-06	6.4E-03	3.2E-06
Manganese	07439-96-5	3.8E-04				1.4E-02	7.0E-06	4.9E-03	2.4E-06
Mercury	07439-97-6	2.6E-04				9.5E-03	4.8E-06	3.3E-03	1.7E-06
Naphthalene	00091-20-3	6.1E-04				2.2E-02	1.1E-05	7.8E-03	3.9E-06
Nickel	07440-02-0	2.1E-03				7.7E-02	3.9E-05	2.7E-02	1.3E-05
Polycyclic Organic Matter	POM	8.8E-05				3.2E-03	1.6E-06	1.1E-03	5.7E-07
Selenium	07782-49-2	2.4E-05				8.8E-04	4.4E-07	3.1E-04	1.5E-07
Toluene	00108-88-3	3.4E-03				0.12	6.2E-05	4.4E-02	2.2E-05

Table 4
DXG Combustion[a]
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[c] (MMscf/year)	Potential Fuel Usage[d] (MMscf/year)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
00464			**2.19E-03**	**5.6**	**19**				
One Tray Style/Coil Anneal Unit in the Bar Mill									
Carbon Monoxide	00630-08-0	84				472	0.24	1,611	0.81
Nitrogen Oxides	NY210-00-0	100				561	0.28	1,918	0.96
Sulfur Dioxide	07446-09-5	0.60				3.4	1.7E-03	12	5.8E-03
PM (Total)	NY075-00-0	7.6				43	2.1E-02	146	7.3E-02
PM_{10}	NY075-00-5	7.6				43	2.1E-02	146	7.3E-02
$PM_{2.5}$	NY075-02-5	7.6				43	2.1E-02	146	7.3E-02
Volatile Organic Compounds	NY998-00-0	5.5				31	1.5E-02	106	5.3E-02
Carbon Dioxide	00124-38-9	119,316				669,778	335	2,288,998	1,144
Methane	00074-82-8	2.2				13	6.3E-03	43	2.2E-02
Nitrous Oxide	10024-97-2	0.22				1.3	6.3E-04	4.3	2.2E-03
Total HAPs	NY100-00-0					11	5.3E-03	36	1.8E-02
Arsenic	07440-38-2	2.0E-04				1.1E-03	5.6E-07	3.8E-03	1.9E-06
Benzene	00071-43-2	2.1E-03				1.2E-02	5.9E-06	4.0E-02	2.0E-05
Beryllium	07440-41-7	1.2E-05				6.7E-05	3.4E-08	2.3E-04	1.2E-07
Cadmium	07440-43-9	1.1E-03				6.2E-03	3.1E-06	2.1E-02	1.1E-05
Chromium	07440-47-3	1.4E-03				7.9E-03	3.9E-06	2.7E-02	1.3E-05
Cobalt	07440-48-4	8.4E-05				4.7E-04	2.4E-07	1.6E-03	8.1E-07
Dichlorobenzene	25321-22-6	1.2E-03				6.7E-03	3.4E-06	2.3E-02	1.2E-05
Formaldehyde	00050-00-0	7.5E-02				0.42	2.1E-04	1.4	7.2E-04
Hexane	00110-54-3	1.8				10	5.1E-03	35	1.7E-02
Lead	07439-92-1	5.0E-04				2.8E-03	1.4E-06	9.6E-03	4.8E-06
Manganese	07439-96-5	3.8E-04				2.1E-03	1.1E-06	7.3E-03	3.6E-06
Mercury	07439-97-6	2.6E-04				1.5E-03	7.3E-07	5.0E-03	2.5E-06
Naphthalene	00091-20-3	6.1E-04				3.4E-03	1.7E-06	1.2E-02	5.9E-06
Nickel	07440-02-0	2.1E-03				1.2E-02	5.9E-06	4.0E-02	2.0E-05
Polycyclic Organic Matter	POM	8.8E-05				5.0E-04	2.5E-07	1.7E-03	8.5E-07
Selenium	07782-49-2	2.4E-05				1.3E-04	6.7E-08	4.6E-04	2.3E-07
Toluene	00108-88-3	3.4E-03				1.9E-02	9.5E-06	6.5E-02	3.3E-05

Table 4
DXG Combustion[(a)]
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(b)] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[(c)] (MMscf/year)	Potential Fuel Usage[(d)] (MMscf/year)	Actual Annual Emissions[(e)] (lb/yr)	Actual Annual Emissions[(e)] (tpy)	Potential Annual Emissions[(f)] (lb/yr)	Potential Annual Emissions[(f)] (tpy)
Total				**56.0**					
Carbon Monoxide	00630-08-0					4,706	2.4	5,124	2.6
Nitrogen Oxides	NY210-00-0					5,602	2.8	6,100	3.1
Sulfur Dioxide	07446-09-5					34	1.7E-02	37	1.8E-02
PM (Total)	NY075-00-0					426	0.21	464	0.23
PM_{10}	NY075-00-5					426	0.21	464	0.23
$PM_{2.5}$	NY075-02-5					426	0.21	464	0.23
Volatile Organic Compounds	NY998-00-0					308	0.15	336	0.17
Carbon Dioxide	00124-38-9					6,684,640	3,342	7,278,805	3,639
Methane	00074-82-8					126	6.3E-02	137	6.9E-02
Nitrous Oxide	10024-97-2					13	6.3E-03	14	6.9E-03
Total HAPs	NY100-00-0					106	5.3E-02	115	5.8E-02
Arsenic	07440-38-2					1.1E-02	5.6E-06	1.2E-02	6.1E-06
Benzene	00071-43-2					0.12	5.9E-05	0.13	6.4E-05
Beryllium	07440-41-7					6.7E-04	3.4E-07	7.3E-04	3.7E-07
Cadmium	07440-43-9					6.2E-02	3.1E-05	6.7E-02	3.4E-05
Chromium	07440-47-3					7.8E-02	3.9E-05	8.5E-02	4.3E-05
Cobalt	07440-48-4					4.7E-03	2.4E-06	5.1E-03	2.6E-06
Dichlorobenzene	25321-22-6					6.7E-02	3.4E-05	7.3E-02	3.7E-05
Formaldehyde	00050-00-0					4.2	2.1E-03	4.6	2.3E-03
Hexane	00110-54-3					101	5.0E-02	110	5.5E-02
Lead	07439-92-1					2.8E-02	1.4E-05	3.1E-02	1.5E-05
Manganese	07439-96-5					2.1E-02	1.1E-05	2.3E-02	1.2E-05
Mercury	07439-97-6					1.5E-02	7.3E-06	1.6E-02	7.9E-06
Naphthalene	00091-20-3					3.4E-02	1.7E-05	3.7E-02	1.9E-05
Nickel	07440-02-0					0.12	5.9E-05	0.13	6.4E-05
Polycyclic Organic Matter	POM					4.9E-03	2.5E-06	5.4E-03	2.7E-06
Selenium	07782-49-2					1.3E-03	6.7E-07	1.5E-03	7.3E-07
Toluene	00108-88-3					0.19	9.5E-05	0.21	1.0E-04

Table 4
DXG Combustion[(a)]
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(b)] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Future Projected Fuel Usage[(c)] (MMscf/year)	Potential Fuel Usage[(d)] (MMscf/year)	Actual Annual Emissions[(e)] (lb/yr)	(tpy)	Potential Annual Emissions[(f)] (lb/yr)	(tpy)

Notes:

(a) DX gas is a trademarked exothermic gas used to establish the atmosphere of the annealing furnaces. The gas is similar to combusted natural gas, so emissions were estimated using natural gas emission factors.

(b) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.4 - Natural Gas Combustion (July 1998).

Greenhouse gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.

(c) The Future Projected Fuel Usage is based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(d) Potential Fuel Usage (MMscf/yr) = Total Heat Input Rating (MMBtu/hr) x 8,760 (hr/yr) ÷ 1,020 (MMBtu/MMscf).

For the Lee Wilson and Ebner Annealing Units, these each have two furnaces that have the potential to run for 8,760 hours each; therefore, the Potential Fuel Usage calculation above was multiplied by two for these units.

(e) Actual Emissions (lb/yr) = Future Projected Fuel Usage (MMscf/yr) x Emission Factors (lb/MMscf).

Actual Emissions (ton/yr) = Actual Emissions (lb/yr) ÷ 2000 (lb/ton).

(f) Potential Emissions (lb/yr) = Potential Fuel Usage (MMscf/yr) x Emission Factors (lb/MMscf).

Potential Emissions (ton/yr) = Potential Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 5
Fuel Oil Boiler Combustion
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factors[(a)] (lb / 10^3 gal)	Total Heat Input Rating (MMBtu / hr)	Actual Fuel Usage[(b)] (gal / year)	Potential Fuel Usage[(c)] (gal / year)	Actual Annual Emissions[(d)] (lb / yr)	Actual Annual Emissions[(d)] (tpy)	Potential Annual Emissions[(e)] (lb / yr)	Potential Annual Emissions[(e)] (tpy)
U-COMB1			**141**	**56,634**	**8,835,086**				
Three boilers (two at 42 MMBtu / hr ea and one at 57.2 MMBtu / hr) firing No. 2 fuel oil									
Carbon Monoxide	00630-08-0	5.0				283	0.14	44,175	22
Nitrogen Oxides	NY210-00-0	20				1,133	0.57	176,702	88
Sulfur Dioxide	07446-09-5	0.21				12	6.0E-03	1,882	0.94
Particulate Matter	NY075-00-0	3.3				187	9.3E-02	29,156	15
PM10	NY075-00-5	1.0				57	2.8E-02	8,835	4.4
PM2.5	NY075-02-5	0.25				14	7.1E-03	2,209	1.1
Carbon Dioxide	00124-38-9	23,179				1,312,719	656	204,789,904	102,395
Nitrous Oxide	10024-97-2	0.93				52	2.6E-02	8,181	4.1
Methane	00074-82-8	0.19				10	5.2E-03	1,636	0.82
Volatile Organic Compounds	NY998-00-0	0.20				11	5.7E-03	1,767	0.88
Total HAPs	NY100-00-0					4.0	2.0E-03	629	0.31
Arsenic	07440-38-2	5.6E-04				3.2E-02	1.6E-05	4.9	2.5E-03
Beryllium	07440-41-7	4.2E-04				2.4E-02	1.2E-05	3.7	1.9E-03
Cadmium	07440-43-9	4.2E-04				2.4E-02	1.2E-05	3.7	1.9E-03
Chromium	07440-47-3	4.2E-04				2.4E-02	1.2E-05	3.7	1.9E-03
Formaldehyde	00050-00-0	6.1E-02				3.5	1.7E-03	539	0.27
Lead	07439-92-1	1.3E-03				7.1E-02	3.6E-05	11	5.6E-03
Manganese	07439-96-5	8.4E-04				4.8E-02	2.4E-05	7.4	3.7E-03
Mercury	07439-96-5	4.2E-04				2.4E-02	1.2E-05	3.7	1.9E-03
Nickel	07440-02-0	4.2E-04				2.4E-02	1.2E-05	3.7	1.9E-03
Polycyclic Organic Matter	POM	3.3E-03				0.19	9.3E-05	29	1.5E-02
Selenium	07782-49-2	2.1E-03				0.12	5.9E-05	19	9.3E-03

Table 5

Fuel Oil Boiler Combustion
Summary of Actual and Potential Emissions

Revere Copper Products, Inc

Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factors[a] (lb/10^3 gal)	Total Heat Input Rating (MMBtu/hr)	Actual Fuel Usage[b] (gal/year)	Potential Fuel Usage[c] (gal/year)	Actual Annual Emissions[d] (lb/yr)	(tpy)	Potential Annual Emissions[e] (lb/yr)	(tpy)

Notes:

(a) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.3 - Fuel Oil Combustion (September 1998).

Greenhouse Gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.

(b) Actual Fuel Usage is the equivalent amount of #2 fuel oil that corresponds to the 2021 amount of #6 fuel oil combusted by ratioing the fuel heating values.

(c) Potential Fuel Usage (gal/yr) = Total Heat Input Rating (MMBtu/hr) x 8,760 (hr/yr) x 1,000,000 (Btu/MMBtu) ÷ Fuel Heating Value (Btu/gal).

(d) Actual Emissions (lb/yr) = Actual Fuel Usage (gal/yr) x Emission Factors (lb/10^3 gal) ÷ 1000 (gal/10^3 gal).

Actual Emissions (ton/yr) = Actual Emissions (lb/yr) ÷ 2000 (lb/ton).

(e) Potential Emissions (lb/yr) = Potential Fuel Usage (gal/yr) x Emission Factors (lb/10^3 gal) ÷ 1000 (gal/10^3 gal).

Potential Emissions (ton/yr) = Potential Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 6

Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[a] (g/HP-hr)	AP-42 Emission Factors[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Actual Operating Hours[c] (hr/yr)	Potential Operating Hours[e] (hr/yr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Powerhouse				125	168	1.2	25	499				
Diesel Fired 1960 GM Emergency Generator												
Carbon Monoxide	00630-08-0	---	0.95						27	1.4E-02	556	0.28
Nitrogen Oxides	NY210-00-0	---	4.4						127	6.4E-02	2,580	1.3
Sulfur Dioxide	07446-09-5	---	0.29						8.4	4.2E-03	170	8.5E-02
PM (Total)	NY075-00-0	---	0.31						8.9	4.5E-03	181	9.1E-02
PM_{10}	NY075-00-5	---	0.31						8.9	4.5E-03	181	9.1E-02
$PM_{2.5}$	NY075-02-5	---	0.31						8.9	4.5E-03	181	9.1E-02
Volatile Organic Compounds	NY998-00-0	---	0.36						10	5.2E-03	211	0.11
Carbon Dioxide	00124-38-9	---	164						4,730	2.4	95,953	48
Total HAPs	NY100-00-0								0.11	5.5E-05	2.2	1.1E-03
Acenaphthene	00083-32-9	---	1.4E-06						4.1E-05	2.0E-08	8.3E-04	4.2E-07
Acenaphthylene	00208-96-8	---	5.1E-06						1.5E-04	7.3E-08	3.0E-03	1.5E-06
Acetaldehyde	00075-07-0	---	7.7E-04						2.2E-02	1.1E-05	0.45	2.2E-04
Acrolein	00107-02-8	---	9.3E-05						2.7E-03	1.3E-06	5.4E-02	2.7E-05
Anthracene	00120-12-7	---	1.9E-06						5.4E-05	2.7E-08	1.1E-03	5.5E-07
Benzene	00071-43-2	---	9.3E-04						2.7E-02	1.3E-05	0.55	2.7E-04
Benz(a)anthracene	00056-55-3	---	1.7E-06						4.8E-05	2.4E-08	9.8E-04	4.9E-07
Benz(a)pyrene	00050-32-8	---	1.9E-07						5.4E-06	2.7E-09	1.1E-04	5.5E-08
Benzo(b)fluoranthene	00205-99-2	---	9.9E-08						2.9E-06	1.4E-09	5.8E-05	2.9E-08
Benzo(g,h,i)perylene	00191-24-2	---	4.9E-07						1.4E-05	7.1E-09	2.9E-04	1.4E-07
Benzo(k)fluoranthene	00207-08-9	---	1.6E-07						4.5E-06	2.2E-09	9.1E-05	4.5E-08
Chrysene	00218-01-9	---	3.5E-07						1.0E-05	5.1E-09	2.1E-04	1.0E-07
Dibenzo(a,h)anthracene	00053-70-3	---	5.8E-07						1.7E-05	8.4E-09	3.4E-04	1.7E-07
Fluoranthene	00206-44-0	---	7.6E-06						2.2E-04	1.1E-07	4.5E-03	2.2E-06
Fluorene	00086-73-7	---	2.9E-05						8.4E-04	4.2E-07	1.7E-02	8.5E-06
Formaldehyde	00050-00-0	---	1.2E-03						3.4E-02	1.7E-05	0.69	3.5E-04
Indeno(1,2,3-cd)pyrene	00193-39-5	---	3.8E-07						1.1E-05	5.4E-09	2.2E-04	1.1E-07
Naphthalene	00091-20-3	---	8.5E-05						2.4E-03	1.2E-06	5.0E-02	2.5E-05
Phenanthrene	00085-01-8	---	2.9E-05						8.5E-04	4.2E-07	1.7E-02	8.6E-06
Pyrene	00129-00-0	---	4.8E-06						1.4E-04	6.9E-08	2.8E-03	1.4E-06
Toluene	00108-88-3	---	4.1E-04						1.2E-02	5.9E-06	0.24	1.2E-04
Xylenes	01330-20-7	---	2.9E-04						8.2E-03	4.1E-06	0.17	8.3E-05
Soap House				2000	2680	19	8.0	499				
Diesel Fired 1999 Caterpillar Emergency Generator												
Carbon Monoxide	00630-08-0	---	0.85						128	6.4E-02	7,957	4.0
Nitrogen Oxides	NY210-00-0	---	3.2						480	0.24	29,956	15
Sulfur Dioxide	07446-09-5	---	1.5E-03						0.23	1.1E-04	14	7.1E-03
PM (Total)	NY075-00-0	---	7.0E-02						10	5.2E-03	652	0.33

Confidential

Table 6
Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[a] (g/HP-hr)	AP-42 Emission Factors[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Actual Operating Hours[c] (hr/yr)	Potential Operating Hours[e] (hr/yr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
PM_{10}	NY075-00-5	---	5.7E-02						8.6	4.3E-03	536	0.27
$PM_{2.5}$	NY075-02-5	---	4.8E-02						7.2	3.6E-03	448	0.22
Volatile Organic Compounds	NY998-00-0	---	8.2E-02						12	6.1E-03	767	0.38
Carbon Dioxide	00124-38-9	---	165						24,763	12	1,544,605	772
Methane	00074-82-8	---	8.1E-03						1.2	6.1E-04	76	3.8E-02
Total HAPs	NY100-00-0								0.24	1.2E-04	15	7.4E-03
Acenaphthene	00083-32-9	---	4.7E-06						7.0E-04	3.5E-07	4.4E-02	2.2E-05
Acenaphthylene	00208-96-8	---	9.2E-06						1.4E-03	6.9E-07	8.6E-02	4.3E-05
Acetaldehyde	00075-07-0	---	2.5E-05						3.8E-03	1.9E-06	0.24	1.2E-04
Acrolein	00107-02-8	---	7.9E-06						1.2E-03	5.9E-07	7.4E-02	3.7E-05
Anthracene	00120-12-7	---	1.2E-06						1.8E-04	9.2E-08	1.2E-02	5.8E-06
Benzene	00071-43-2	---	7.8E-04						0.12	5.8E-05	7.3	3.6E-03
Benz(a)anthracene	00056-55-3	---	6.2E-07						9.3E-05	4.7E-08	5.8E-03	2.9E-06
Benz(a)pyrene	00050-32-8	---	2.6E-07						3.9E-05	1.9E-08	2.4E-03	1.2E-06
Benzo(b)fluoranthene	00205-99-2	---	1.1E-06						1.7E-04	8.3E-08	1.0E-02	5.2E-06
Benzo(g,h,i)perylene	00191-24-2	---	5.6E-07						8.3E-05	4.2E-08	5.2E-03	2.6E-06
Benzo(k)fluoranthene	00207-08-9	---	2.2E-07						3.3E-05	1.6E-08	2.0E-03	1.0E-06
Chrysene	00218-01-9	---	1.5E-06						2.3E-04	1.1E-07	1.4E-02	7.2E-06
Dibenzo(a,h)anthracene	00053-70-3	---	3.5E-07						5.2E-05	2.6E-08	3.2E-03	1.6E-06
Fluoranthene	00206-44-0	---	4.0E-06						6.0E-04	3.0E-07	3.8E-02	1.9E-05
Fluorene	00086-73-7	---	1.3E-05						1.9E-03	9.6E-07	0.12	6.0E-05
Formaldehyde	00050-00-0	---	7.9E-05						1.2E-02	5.9E-06	0.74	3.7E-04
Indeno(1,2,3-cd)pyrene	00193-39-5	---	4.1E-07						6.2E-05	3.1E-08	3.9E-03	1.9E-06
Naphthalene	00091-20-3	---	1.3E-04						2.0E-02	9.8E-06	1.2	6.1E-04
Phenanthrene	00085-01-8	---	4.1E-05						6.1E-03	3.1E-06	0.38	1.9E-04
Pyrene	00129-00-0	---	3.7E-06						5.6E-04	2.8E-07	3.5E-02	1.7E-05
Toluene	00108-88-3	---	2.8E-04						4.2E-02	2.1E-05	2.6	1.3E-03
Xylenes	01330-20-7	---	1.9E-04						2.9E-02	1.4E-05	1.8	9.0E-04
Main Office				**25**	**34**	**0.23**	**20**	**499**				
Natural Gas Fired 2004 Generac Emergency Generator												
Carbon Monoxide	00630-08-0	---	3.7						17	8.7E-03	435	0.22
Nitrogen Oxides	NY210-00-0	---	2.2						10	5.2E-03	259	0.13
Sulfur Dioxide	07446-09-5	---	5.9E-04						2.8E-03	1.4E-06	6.9E-02	3.4E-05
PM (Total)	NY075-00-0	---	1.9E-02						9.1E-02	4.6E-05	2.3	1.1E-03
PM_{10}	NY075-00-5	---	9.5E-03						4.5E-02	2.2E-05	1.1	5.6E-04
$PM_{2.5}$	NY075-02-5	---	9.5E-03						4.5E-02	2.2E-05	1.1	5.6E-04
Volatile Organic Compounds	NY998-00-0	---	3.0E-02						0.14	6.9E-05	3.5	1.7E-03
Carbon Dioxide	00124-38-9	---	110						516	0.26	12,872	6.4
Methane	00074-82-8	---	0.23						1.1	5.4E-04	27	1.3E-02
Total HAPs	NY100-00-0								0.13	6.7E-05	3.4	1.7E-03

Table 6

Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[a] (g/HP-hr)	AP-42 Emission Factors[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Actual Operating Hours[c] (hr/yr)	Potential Operating Hours[e] (hr/yr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Acetaldehyde	00075-07-0	---	2.8E-03						1.3E-02	6.5E-06	0.33	1.6E-04
Acrolein	00107-02-8	---	2.6E-03						1.2E-02	6.2E-06	0.31	1.5E-04
Benzene	00071-43-2	---	1.6E-03						7.4E-03	3.7E-06	0.18	9.2E-05
Carbon Tetrachloride	00056-23-5	---	1.8E-05						8.3E-05	4.2E-08	2.1E-03	1.0E-06
Chlorobenzene	00108-90-7	---	1.3E-05						6.1E-05	3.0E-08	1.5E-03	7.5E-07
Chloroform	00067-66-3	---	1.4E-05						6.4E-05	3.2E-08	1.6E-03	8.0E-07
1,1-Dichloroethane	00075-34-3	---	1.1E-05						5.3E-05	2.6E-08	1.3E-03	6.6E-07
1,2-Dichloroethane	00107-06-2	---	1.1E-05						5.3E-05	2.6E-08	1.3E-03	6.6E-07
1,2-Dichloropropane	00078-87-5	---	1.3E-05						6.1E-05	3.0E-08	1.5E-03	7.6E-07
1,3-Dichloropropene	00542-75-6	---	1.3E-05						6.0E-05	3.0E-08	1.5E-03	7.4E-07
Ethylbenzene	00100-41-4	---	2.5E-05						1.2E-04	5.8E-08	2.9E-03	1.5E-06
Ethylene Dibromide	00106-93-4	---	2.1E-05						1.0E-04	5.0E-08	2.5E-03	1.2E-06
Formaldehyde	00050-00-0	---	2.1E-02						9.6E-02	4.8E-05	2.4	1.2E-03
Naphthalene	00091-20-3	---	9.7E-05						4.6E-04	2.3E-07	1.1E-02	5.7E-06
PAH	130498-29-2	---	1.4E-04						6.6E-04	3.3E-07	1.6E-02	8.2E-06
Styrene	00100-42-5	---	1.2E-05						5.6E-05	2.8E-08	1.4E-03	7.0E-07
1,1,2,2-Tetrachloroethane	00079-34-5	---	2.5E-05						1.2E-04	5.9E-08	3.0E-03	1.5E-06
Toluene	00108-88-3	---	5.6E-04						2.6E-03	1.3E-06	6.5E-02	3.3E-05
1,1,2-Trichloroethane	00079-00-5	---	1.5E-05						7.2E-05	3.6E-08	1.8E-03	9.0E-07
Vinyl Chloride	00075-01-4	---	7.2E-06						3.4E-05	1.7E-08	8.4E-04	4.2E-07
Xylenes	01330-20-7	---	2.0E-04						9.1E-04	4.6E-07	2.3E-02	1.1E-05
Coreless Furnace Generator				250	335	2.3	12	499				
Natural Gas Fired 2023 Generac Emergency Generator												
Carbon Monoxide	00630-08-0	4.0	---						35	1.8E-02	1,474	0.74
Nitrogen Oxides	NY210-00-0	2.0	---						18	8.9E-03	737	0.37
Sulfur Dioxide	07446-09-5	---	5.9E-04						1.7E-02	8.3E-06	0.69	3.4E-04
PM (Total)	NY075-00-0	---	1.0E-02						0.28	1.4E-04	12	5.8E-03
PM_{10}	NY075-00-5	---	7.7E-05						2.2E-03	1.1E-06	9.0E-02	4.5E-05
$PM_{2.5}$	NY075-02-5	---	7.7E-05						2.2E-03	1.1E-06	9.0E-02	4.5E-05
Volatile Organic Compounds	NY998-00-0	1.0	---						8.9	4.4E-03	369	0.18
Carbon Dioxide	00124-38-9	---	110						3,095	1.5E+00	128,717	64
Methane	00074-82-8	---	1.3						35	1.8E-02	1,463	0.73
Total HAPs	NY100-00-0								2.0	9.8E-04	81	4.1E-02
Acenaphthene	00083-32-9	---	1.3E-06						3.5E-05	1.8E-08	1.5E-03	7.3E-07
Acenaphthylene	00208-96-8	---	5.5E-06						1.6E-04	7.8E-08	6.5E-03	3.2E-06
Acetaldehyde	00075-07-0	---	8.4E-03						0.24	1.2E-04	9.8	4.9E-03
Acrolein	00107-02-8	---	5.1E-03						0.14	7.2E-05	6.0	3.0E-03
Benzene	00071-43-2	---	4.4E-04						1.2E-02	6.2E-06	0.51	2.6E-04
Benzo(b)fluoranthene	00205-99-2	---	1.7E-07						4.7E-06	2.3E-09	1.9E-04	9.7E-08
Benzo(g,h,i)perylene	00191-24-2	---	4.1E-07						1.2E-05	5.8E-09	4.8E-04	2.4E-07

Table 6
Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[a] (g/HP-hr)	AP-42 Emission Factors[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Actual Operating Hours[c] (hr/yr)	Potential Operating Hours[e] (hr/yr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Benzo(e)pyrene	00192-97-2	---	4.2E-07						1.2E-05	5.8E-09	4.9E-04	2.4E-07
Biphenyl	00092-52-4	---	2.1E-04						6.0E-03	3.0E-06	0.25	1.2E-04
Carbon Tetrachloride	00056-23-5	---	3.7E-05						1.0E-03	5.2E-07	4.3E-02	2.1E-05
Chlorobenzene	00108-90-7	---	3.0E-05						8.6E-04	4.3E-07	3.6E-02	1.8E-05
Chloroethane	00075-00-3	---	1.9E-06						5.3E-05	2.6E-08	2.2E-03	1.1E-06
Chloroform	00067-66-3	---	2.9E-05						8.0E-04	4.0E-07	3.3E-02	1.7E-05
Chrysene	00218-01-9	---	6.9E-07						2.0E-05	9.8E-09	8.1E-04	4.1E-07
1,1-Dichloroethane	00075-34-3	---	2.4E-05						6.6E-04	3.3E-07	2.8E-02	1.4E-05
1,2-Dichloroethane	00107-06-2	---	2.4E-05						6.6E-04	3.3E-07	2.8E-02	1.4E-05
1,2-Dichloropropane	00078-87-5	---	2.7E-05						7.6E-04	3.8E-07	3.1E-02	1.6E-05
1,3-Dichloropropene	00542-75-6	---	2.6E-05						7.4E-04	3.7E-07	3.1E-02	1.5E-05
Ethylbenzene	00100-41-4	---	4.0E-05						1.1E-03	5.6E-07	4.6E-02	2.3E-05
Ethylene Dibromide	00106-93-4	---	4.4E-05						1.2E-03	6.2E-07	5.2E-02	2.6E-05
Fluoranthene	00206-44-0	---	1.1E-06						3.1E-05	1.6E-08	1.3E-03	6.5E-07
Fluorene	00086-73-7	---	5.7E-06						1.6E-04	8.0E-08	6.6E-03	3.3E-06
Formaldehyde	00050-00-0	---	5.3E-02						1.5	7.4E-04	62	3.1E-02
Hexane	00110-54-3	---	1.1E-03						3.1E-02	1.6E-05	1.3	6.5E-04
Naphthalene	00091-20-3	---	7.4E-05						2.1E-03	1.0E-06	8.7E-02	4.4E-05
PAH	130498-29-2	---	2.7E-05						7.6E-04	3.8E-07	3.1E-02	1.6E-05
Phenanthrene	00085-01-8	---	1.0E-05						2.9E-04	1.5E-07	1.2E-02	6.1E-06
Phenol	00108-95-2	---	2.4E-05						6.8E-04	3.4E-07	2.8E-02	1.4E-05
Pyrene	00129-00-0	---	1.4E-06						3.8E-05	1.9E-08	1.6E-03	8.0E-07
Styrene	00100-42-5	---	2.4E-05						6.6E-04	3.3E-07	2.8E-02	1.4E-05
1,1,2,2-Tetrachloroethane	00079-34-5	---	4.0E-05						1.1E-03	5.6E-07	4.7E-02	2.3E-05
Toluene	00108-88-3	---	4.1E-04						1.1E-02	5.7E-06	0.48	2.4E-04
1,1,2-Trichloroethane	00079-00-5	---	3.2E-05						8.9E-04	4.5E-07	3.7E-02	1.9E-05
2,2,4-Trimethylpentane	00540-84-1	---	2.5E-04						7.0E-03	3.5E-06	0.29	1.5E-04
Vinyl Chloride	00075-01-4	---	1.5E-05						4.2E-04	2.1E-07	1.7E-02	8.7E-06
Xylenes	01330-20-7	---	1.8E-04						5.2E-03	2.6E-06	0.22	1.1E-04
Total												
Carbon Monoxide	00630-08-0								208	0.10	10,422	5.2
Nitrogen Oxides	NY210-00-0								636	0.32	33,532	17
Sulfur Dioxide	07446-09-5								8.6	4.3E-03	185	9.2E-02
PM (Total)	NY075-00-0								20	9.9E-03	848	0.42
PM_{10}	NY075-00-5								18	8.8E-03	719	0.36
$PM_{2.5}$	NY075-02-5								16	8.1E-03	631	0.32
Volatile Organic Compounds	NY998-00-0								32	1.6E-02	1,349	0.67
Carbon Dioxide	00124-38-9								33,105	17	1,782,146	891
Methane	00074-82-8								37	1.9E-02	1,565	0.78
Total HAPs	NY100-00-0								2.4	1.2E-03	102	5.1E-02

Table 6

Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[(a)] (g/HP-hr)	AP-42 Emission Factors[(b)] (lb/MMBtu)	Power Output Rating[(c)] (kW)	Power Output Rating[(c)] (HP)	Maximum Heat Input[(d)] (MMBtu/hr)	Actual Operating Hours[(c)] (hr/yr)	Potential Operating Hours[(e)] (hr/yr)	Actual Annual Emissions[(f)] (lb/yr)	Actual Annual Emissions[(f)] (tpy)	Potential Annual Emissions[(g)] (lb/yr)	Potential Annual Emissions[(g)] (tpy)
Acenaphthene	00083-32-9								7.8E-04	3.9E-07	4.6E-02	2.3E-05
Acenaphthylene	00208-96-8								1.7E-03	8.4E-07	9.6E-02	4.8E-05
Acetaldehyde	00075-07-0								0.27	1.4E-04	11	5.4E-03
Acrolein	00107-02-8								0.16	8.0E-05	6.5	3.2E-03
Anthracene	00120-12-7								2.4E-04	1.2E-07	1.3E-02	6.3E-06
Benzene	00071-43-2								0.16	8.2E-05	8.5	4.3E-03
Benz(a)anthracene	00056-55-3								1.4E-04	7.1E-08	6.8E-03	3.4E-06
Benz(a)pyrene	00050-32-8								4.4E-05	2.2E-08	2.5E-03	1.3E-06
Benzo(b)fluoranthene	00205-99-2								1.7E-04	8.7E-08	1.1E-02	5.3E-06
Benzo(g,h,i)perylene	00191-24-2								1.1E-04	5.5E-08	6.0E-03	3.0E-06
Benzo(e)pyrene	00192-97-2								1.2E-05	5.8E-09	4.9E-04	2.4E-07
Benzo(k)fluoranthene	00207-08-9								3.7E-05	1.9E-08	2.1E-03	1.1E-06
Biphenyl	00092-52-4								6.0E-03	3.0E-06	0.25	1.2E-04
Carbon Tetrachloride	00056-23-5								1.1E-03	5.6E-07	4.5E-02	2.3E-05
Chlorobenzene	00108-90-7								9.2E-04	4.6E-07	3.7E-02	1.9E-05
Chloroethane	00075-00-3								5.3E-05	2.6E-08	2.2E-03	1.1E-06
Chloroform	00067-66-3								8.7E-04	4.3E-07	3.5E-02	1.7E-05
Chrysene	00218-01-9								2.6E-04	1.3E-07	1.5E-02	7.7E-06
Dibenzo(a,h)anthracene	00053-70-3								6.9E-05	3.4E-08	3.6E-03	1.8E-06
1,1-Dichloroethane	00075-34-3								7.2E-04	3.6E-07	2.9E-02	1.4E-05
1,2-Dichloroethane	00107-06-2								7.2E-04	3.6E-07	2.9E-02	1.4E-05
1,2-Dichloropropane	00078-87-5								8.2E-04	4.1E-07	3.3E-02	1.6E-05
1,3-Dichloropropene	00542-75-6								8.0E-04	4.0E-07	3.2E-02	1.6E-05
Ethylbenzene	00100-41-4								1.2E-03	6.2E-07	4.9E-02	2.5E-05
Ethylene Dibromide	00106-93-4								1.3E-03	6.7E-07	5.4E-02	2.7E-05
Ethylene Dichloride	00107-06-2								7.2E-04	3.6E-07	2.9E-02	1.4E-05
Fluoranthene	00206-44-0								8.6E-04	4.3E-07	4.3E-02	2.2E-05
Fluorene	00086-73-7								2.9E-03	1.5E-06	0.14	7.2E-05
Formaldehyde	00050-00-0								1.6	8.1E-04	66	3.3E-02
Hexane	00110-54-3								3.1E-02	1.6E-05	1.3	6.5E-04
Indeno(1,2,3-cd)pyrene	00193-39-5								7.3E-05	3.6E-08	4.1E-03	2.0E-06
Naphthalene	00091-20-3								2.5E-02	1.2E-05	1.4	6.8E-04
PAH	130498-29-2								1.4E-03	7.1E-07	4.8E-02	2.4E-05
Phenanthrene	00085-01-8								7.3E-03	3.6E-06	0.41	2.1E-04
Phenol	00108-95-2								6.8E-04	3.4E-07	2.8E-02	1.4E-05
Pyrene	00129-00-0								7.3E-04	3.7E-07	3.9E-02	2.0E-05
Styrene	00100-42-5								7.2E-04	3.6E-07	2.9E-02	1.5E-05
1,1,2,2-Tetrachloroethane	00079-34-5								1.2E-03	6.2E-07	5.0E-02	2.5E-05
Toluene	00108-88-3								6.8E-02	3.4E-05	3.4	1.7E-03
1,1,2-Trichloroethane	00079-00-5								9.7E-04	4.8E-07	3.9E-02	2.0E-05
2,2,4-Trimethylpentane	00540-84-1								7.0E-03	3.5E-06	0.29	1.5E-04

Table 6

Facility-Wide Emergency Generators
Summary of Actual and Potential Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factors[(a)] (g/HP-hr)	AP-42 Emission Factors[(b)] (lb/MMBtu)	Power Output Rating[(c)] (kW)	Power Output Rating[(c)] (HP)	Maximum Heat Input[(d)] (MMBtu/hr)	Actual Operating Hours[(c)] (hr/yr)	Potential Operating Hours[(e)] (hr/yr)	Actual Annual Emissions[(f)]		Potential Annual Emissions[(g)]	
									(lb/yr)	(tpy)	(lb/yr)	(tpy)
Vinyl Chloride	00075-01-4								4.5E-04	2.3E-07	1.8E-02	9.1E-06
Xylenes	01330-20-7								4.3E-02	2.2E-05	2.2	1.1E-03

Notes:

(a) The emission factors were based on the emissions standards in 40 CFR 60, Subparts IIII or JJJJ.
(b) The emission factors were obtained from USEPA's Compiliation of Air Pollution Emission Factors, Volume I, Fifth Edition, AP-42, Chapter 3 *Stationary Internal Combustion Sources* .
(c) Power Output Rating and Actual Operating Hours were provided by the client.
(d) Maximum Heat Input (MMBtu/hr) = Power Output Rating (HP) x 7,000 (Btu/HP-hr) ÷ 1,000,000 (Btu/MMBtu).
(e) Potential Operating Hours for the emergency generators are assumed to be 500 hr/yr consistent with 6 NYCRR 201-3.2(c)(6).
(e) Potential Operating Hours are assumed to be 8,760.
(f) Actual Emissions (lb/yr) = NSPS Emission Factors (g/HP-hr) x Power Output Rating (HP) x Actual Operating Hours (hr/yr) ÷ 453.59 (g/lb).
Actual Emissions (lb/yr) = AP-42 Emission Factors (lb/MMBtu) x Maximum Heat Input (MMBtu/hr) x Actual Operating Hours (hr/yr).
Actual Emissions (ton/yr) = Actual Emissions (lb/yr) ÷ 2000 (lb/ton).
(e) Potential Emissions (lb/yr) = NSPS Emission Factors (g/HP-hr) x Power Output Rating (HP) x Potential Operating Hours (hr/yr) ÷ 453.59 (g/lb).
Potential Emissions (lb/yr) = AP-42 Emission Factors (lb/MMBtu) x Maximum Heat Input (MMBtu/hr) x Potential Operating Hours (hr/yr).
Potential Emissions (ton/yr) = Potential Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[b] (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
BH1 Process (Cyclone/Baghouse EP 00039)			**4,132**	**8,760**							
Total Particulate Matter	NY075-00-0				0.33	95	6.6	1,364	0.68	2,891	1.4
Total PM_{10}	NY075-00-5				0.24	95	4.8	992	0.50	2,102	1.1
Total $PM_{2.5}$	NY075-02-5				0.15	95	2.9	599	0.30	1,270	0.64
Total Filterable PM	F-PM				0.20	---	---	826	0.41	1,752	0.88
Filterable PM_{10}	F-PM10				0.11	---	---	455	0.23	964	0.48
Filterable $PM_{2.5}$	F-PM2.5				1.5E-02	---	---	62	3.1E-02	131	6.6E-02
Condensible PM	C-PM				0.13	---	---	537	0.27	1,139	0.57
Graphite	07782-42-5	40			0.13	95	2.6	545	0.27	1,156	0.58
Copper oxide	01317-38-0	31			0.10	95	2.0	416	0.21	883	0.44
Iron oxide	01309-37-1	9.1			3.0E-02	95	0.60	124	6.2E-02	262	0.13
Aluminum oxide	01344-28-1	0.27			9.0E-04	95	1.8E-02	3.7	1.9E-03	7.9	4.0E-03
Zinc oxide	01314-13-2	8.4E-02			2.8E-04	95	5.5E-03	1.1	5.7E-04	2.4	1.2E-03
Magnesium oxide	01309-48-4	2.3E-02			7.7E-05	95	1.5E-03	0.32	1.6E-04	0.68	3.4E-04
Barium oxide	01304-28-5	3.7E-03			1.2E-05	95	2.4E-04	5.0E-02	2.5E-05	0.11	5.3E-05
Silver oxide	20667-12-3	9.7E-04			3.2E-06	95	6.4E-05	1.3E-02	6.6E-06	2.8E-02	1.4E-05
Total HAPs	NY100-00-0							0.82	4.1E-04	1.7	8.6E-04
Lead oxide	01314-41-6	3.3E-02			1.1E-04	95	2.2E-03	0.45	2.2E-04	0.95	4.7E-04
Manganese oxide	01313-13-9	2.3E-02			7.7E-05	95	1.5E-03	0.32	1.6E-04	0.68	3.4E-04
Nickel oxide	01313-99-1	2.1E-03			6.9E-06	95	1.4E-04	2.8E-02	1.4E-05	6.0E-02	3.0E-05
Cadmium oxide	01306-19-0	6.8E-04			2.2E-06	95	4.5E-05	9.2E-03	4.6E-06	2.0E-02	9.8E-06
Chromium oxide	01333-82-0	9.3E-04			3.1E-06	95	6.2E-05	1.3E-02	6.4E-06	2.7E-02	1.3E-05
Mercury oxide	21908-53-2	8.9E-06			2.9E-08	95	5.8E-07	1.2E-04	6.0E-08	2.6E-04	1.3E-07
BP1 Process (By-pass, Cyclone EP 00039)			**43.2**	**240**							
Total Particulate Matter	NY075-00-0				3.1	10	3.5	135	6.7E-02	749	0.37
Total PM_{10}	NY075-00-5				5.2	10	5.8	225	0.11	1,248	0.62
Total $PM_{2.5}$	NY075-02-5				3.2	10	3.6	138	6.9E-02	768	0.38
Graphite	07782-42-5	40			2.1	10	2.3	90	4.5E-02	499	0.25
Copper oxide	01317-38-0	31			1.6	10	1.8	69	3.4E-02	381	0.19
Iron oxide	01309-37-1	9.1			0.47	10	0.52	20	1.0E-02	113	5.7E-02
Aluminum oxide	01344-28-1	0.27			1.4E-02	10	1.6E-02	0.62	3.1E-04	3.4	1.7E-03
Zinc oxide	01314-13-2	8.4E-02			4.4E-03	10	4.8E-03	0.19	9.4E-05	1.0	5.2E-04

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[b] (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Magnesium oxide	01309-48-4	2.3E-02			1.2E-03	10	1.4E-03	5.3E-02	2.6E-05	0.29	1.5E-04
Barium oxide	01304-28-5	3.7E-03			1.9E-04	10	2.1E-04	8.3E-03	4.1E-06	4.6E-02	2.3E-05
Silver oxide	20667-12-3	9.7E-04			5.0E-05	10	5.6E-05	2.2E-03	1.1E-06	1.2E-02	6.1E-06
Total HAPs	NY100-00-0							0.13	6.3E-05	0.70	3.5E-04
Lead oxide	01314-41-6	3.3E-02			1.7E-03	10	1.9E-03	7.4E-02	3.7E-05	0.41	2.0E-04
Manganese oxide	01313-13-9	2.3E-02			1.2E-03	10	1.4E-03	5.3E-02	2.6E-05	0.29	1.5E-04
Nickel oxide	01313-99-1	2.1E-03			1.1E-04	10	1.2E-04	4.7E-03	2.3E-06	2.6E-02	1.3E-05
Cadmium oxide	01306-19-0	6.8E-04			3.5E-05	10	3.9E-05	1.5E-03	7.6E-07	8.4E-03	4.2E-06
Chromium oxide	01333-82-0	9.3E-04			4.9E-05	10	5.4E-05	2.1E-03	1.0E-06	1.2E-02	5.8E-06
Mercury oxide	21908-53-2	8.9E-06			4.6E-07	10	5.1E-07	2.0E-05	9.9E-09	1.1E-04	5.5E-08
BH2 Process (Cyclone/Baghouse EP 00040)			**5,087**	**8,760**							
Total Particulate Matter	NY075-00-0				2.0	99	200	10,174	5.1	17,520	8.8
Total PM_{10}	NY075-00-5				0.98	99	98	4,985	2.5	8,585	4.3
Total $PM_{2.5}$	NY075-02-5				0.29	99	29	1,485	0.74	2,558	1.3
Total Filterable PM	F-PM				1.8	---	---	9,055	4.5	15,593	7.8
Filterable PM_{10}	F-PM10				0.76	---	---	3,866	1.9	6,658	3.3
Filterable $PM_{2.5}$	F-PM2.5				7.2E-02	---	---	366	0.18	631	0.32
Condensible PM	C-PM				0.22	---	---	1,119	0.56	1,927	0.96
Graphite	07782-42-5	40			0.80	99	80	4,070	2.0	7,008	3.5
Copper oxide	01317-38-0	31			0.61	99	61	3,107	1.6	5,351	2.7
Iron oxide	01309-37-1	9.1			0.18	99	18	924	0.46	1,591	0.80
Aluminum oxide	01344-28-1	0.27			5.5E-03	99	0.55	28	1.4E-02	48	2.4E-02
Zinc oxide	01314-13-2	8.4E-02			1.7E-03	99	0.17	8.5	4.3E-03	15	7.3E-03
Magnesium oxide	01309-48-4	2.3E-02			4.7E-04	99	4.7E-02	2.4	1.2E-03	4.1	2.0E-03
Barium oxide	01304-28-5	3.7E-03			7.3E-05	99	7.3E-03	0.37	1.9E-04	0.64	3.2E-04
Silver oxide	20667-12-3	9.7E-04			1.9E-05	99	1.9E-03	9.9E-02	4.9E-05	0.17	8.5E-05
Total HAPs	NY100-00-0							5.7	2.9E-03	9.8	4.9E-03
Lead oxide	01314-41-6	3.3E-02			6.5E-04	99	6.5E-02	3.3	1.7E-03	5.7	2.9E-03
Manganese oxide	01313-13-9	2.3E-02			4.7E-04	99	4.7E-02	2.4	1.2E-03	4.1	2.0E-03
Nickel oxide	01313-99-1	2.1E-03			4.2E-05	99	4.2E-03	0.21	1.1E-04	0.37	1.8E-04
Cadmium oxide	01306-19-0	6.8E-04			1.4E-05	99	1.4E-03	6.9E-02	3.4E-05	0.12	5.9E-05
Chromium oxide	01333-82-0	9.3E-04			1.9E-05	99	1.9E-03	9.5E-02	4.8E-05	0.16	8.2E-05

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[b] (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Mercury oxide	21908-53-2	8.9E-06			1.8E-07	99	1.8E-05	9.0E-04	4.5E-07	1.6E-03	7.8E-07
BP2 Process (By-pass, Cyclone EP 00040)			**0.08**	**240**							
Total Particulate Matter	NY075-00-0				9.4	10	10	0.75	3.8E-04	2,258	1.1
Total PM_{10}	NY075-00-5				11	10	12	0.85	4.2E-04	2,539	1.3
Total $PM_{2.5}$	NY075-02-5				1.9	10	2.1	0.15	7.4E-05	444	0.22
Graphite	07782-42-5	40			4.2	10	4.7	0.34	1.7E-04	1,016	0.51
Copper oxide	01317-38-0	31			3.2	10	3.6	0.26	1.3E-04	776	0.39
Iron oxide	01309-37-1	9.1			0.96	10	1.1	7.7E-02	3.8E-05	231	0.12
Aluminum oxide	01344-28-1	0.27			2.9E-02	10	0.03	2.3E-03	1.2E-06	7.0	3.5E-03
Zinc oxide	01314-13-2	8.4E-02			8.9E-03	10	0.01	7.1E-04	3.5E-07	2.1	1.1E-03
Magnesium oxide	01309-48-4	2.3E-02			2.5E-03	10	0.00	2.0E-04	9.9E-08	0.59	3.0E-04
Barium oxide	01304-28-5	3.7E-03			3.9E-04	10	4.3E-04	3.1E-05	1.6E-08	9.3E-02	4.7E-05
Silver oxide	20667-12-3	9.7E-04			1.0E-04	10	1.1E-04	8.2E-06	4.1E-09	2.5E-02	1.2E-05
Total HAPs	NY100-00-0							4.8E-04	2.4E-07	1.4	7.1E-04
Lead oxide	01314-41-6	3.3E-02			3.5E-03	10	3.8E-03	2.8E-04	1.4E-07	0.83	4.2E-04
Manganese oxide	01313-13-9	2.3E-02			2.5E-03	10	2.7E-03	2.0E-04	9.9E-08	0.59	3.0E-04
Nickel oxide	01313-99-1	2.1E-03			2.2E-04	10	2.5E-04	1.8E-05	8.8E-09	5.3E-02	2.6E-05
Cadmium oxide	01306-19-0	6.8E-04			7.2E-05	10	7.9E-05	5.7E-06	2.9E-09	1.7E-02	8.6E-06
Chromium oxide	01333-82-0	9.3E-04			9.9E-05	10	1.1E-04	7.9E-06	4.0E-09	2.4E-02	1.2E-05
Mercury oxide	21908-53-2	8.9E-06			9.4E-07	10	1.0E-06	7.5E-08	3.7E-11	2.2E-04	1.1E-07
Total											
Total Particulate Matter	NY075-00-0							11,673	5.8	22,669	11
Total PM_{10}	NY075-00-5							6,202	3.1	13,226	6.6
Total $PM_{2.5}$	NY075-02-5							2,223	1.1	4,596	2.3
Graphite	07782-42-5							4,705	2.4	9,180	4.6
Copper oxide	01317-38-0							3,593	1.8	7,010	3.5
Iron oxide	01309-37-1							1,068	0.53	2,084	1.0
Aluminum oxide	01344-28-1							32	1.6E-02	63	3.1E-02
Zinc oxide	01314-13-2							9.9	4.9E-03	19	9.6E-03
Magnesium oxide	01309-48-4							2.8	1.4E-03	5.4	2.7E-03
Barium oxide	01304-28-5							0.43	2.2E-04	0.84	4.2E-04

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a]	Future Projected Operating Hours[b]	Potential Annual Operating Hours[b]	Post-Control Emission Factor[c]	Control Efficiency[d]	Emission Rate Potential[e]	Actual Annual Emissions[f]		Potential Annual Emissions[g]	
		(%)	(hr/yr)	(hr/yr)	(lb/hr)	(%)	(lb/hr)	(lb/yr)	(tpy)	(lb/yr)	(tpy)
Silver oxide	20667-12-3							0.11	5.7E-05	0.22	1.1E-04
Total HAPs	NY100-00-0							6.7	3.3E-03	13	6.5E-03
Lead oxide	01314-41-6							3.9	1.9E-03	7.5	3.8E-03
Manganese oxide	01313-13-9							2.8	1.4E-03	5.4	2.7E-03
Nickel oxide	01313-99-1							0.25	1.2E-04	0.48	2.4E-04
Cadmium oxide	01306-19-0							8.0E-02	4.0E-05	0.16	7.8E-05
Chromium oxide	01333-82-0							0.11	5.5E-05	0.21	1.1E-04
Mercury oxide	21908-53-2							1.0E-03	5.2E-07	2.0E-03	1.0E-06

Notes:

(a) The composition of the particulate is based on analysis of a sample collected from dust accumulated in the baghouse.

(b) For the furnaces, Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project. Potential Annual Operating Hours were provided by Revere.
For the Bypass processes, Future Projected Operating Hours are based on 2022 actual bypass hours and Potential Annual Operating Hours are based on permit limits.

(c) PM Emission Factors for Process BH1 and BH2 are based on testing conducted in May 2023; testing included filterable PM, condensable PM, and particle size distribution, and represent post-control emissions. Individual constituent Emission Factors were calculated by multiplying the Total Particulate Matter Emission Factor by the estimated percentage of the constituent.
For Process BP1 and BP2, the hourly Total Particulate Emission Factors were obtained from the June, 2008 source emissions test report provided by Revere. The hourly PM10 and PM2.5 Emission Factors were obtained from the February, 2002 source emissions test report provided by Revere. Both sets represent post-control emissions.
Individual constituent Emission Factors were calculated by multiplying the Total PM_{10} Emission Factor by the estimated percentage of the constituent. Due to the different test methods used between the 2002 and 2008 source testing, the PM_{10} emission factor is higher than the total emission factor. Therefore, this higher value was used as the basis for the toxics in order to be conservative.

(d) The EP00039 cyclone-baghouse control efficiency was obtained from the February 6, 2002 source emissions test report provided by Revere. The EP00040 cyclone-baghouse control efficiency was 99.7% for total particulate matter per the February 6, 2002 source emissions test report. To be conservative, 99% was used in the EP 00040 emissions calculations, which corresponds to the control efficiency for $PM_{2.5}$ provided in AP-42 Appendix B.2 Table B.2-3 for fabric filters. Control efficiencies for the bypass cyclones were taken from values provided in AP-42 Appendix B.2 Table B.2-3 for single cyclones.

(e) Emission Rate Potential (lb/hr) = Post-Control Emission Factor (lb/hr) ÷ (1- Control Efficiency) (%).

(f) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Factor (lb/hr).
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(g) Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Factor (lb/hr).
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 8
U-CAST1 - Central Vacuum System
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
VAC Process (Single Cyclone/Fabric Filter EP 00602)			**347**	**8,760**							
Total Particulate Matter[h]	NY075-00-0	100			3.6E-02	99.9	36	12	6.2E-03	315	0.16
Total PM_{10}[h]	NY075-00-5	100			3.6E-02	99.9	36	12	6.2E-03	315	0.16
$PM_{2.5}$[h]	NY075-02-5	100			3.6E-02	99.9	36	12	6.2E-03	315	0.16
Graphite	07782-42-5	40			1.4E-02	99.9	14	5.0	2.5E-03	126	6.3E-02
Copper oxide	01317-38-0	31			1.1E-02	99.9	11	3.8	1.9E-03	96	4.8E-02
Iron oxide	01309-37-1	9.1			3.3E-03	99.9	3.3	1.1	5.7E-04	29	1.4E-02
Aluminum oxide	01344-28-1	0.27			9.9E-05	99.9	9.9E-02	3.4E-02	1.7E-05	0.86	4.3E-04
Zinc oxide	01314-13-2	8.4E-02			3.0E-05	99.9	3.0E-02	1.0E-02	5.2E-06	0.26	1.3E-04
Magnesium oxide	01309-48-4	2.3E-02			8.4E-06	99.9	8.4E-03	2.9E-03	1.5E-06	7.4E-02	3.7E-05
Barium oxide	01304-28-5	3.7E-03			1.3E-06	99.9	1.3E-03	4.6E-04	2.3E-07	1.2E-02	5.8E-06
Silver oxide	20667-12-3	9.7E-04			3.5E-07	99.9	3.5E-04	1.2E-04	6.1E-08	3.1E-03	1.5E-06
Total HAPs	NY100-00-0							7.5E-03	3.7E-06	0.19	9.4E-05
Lead oxide	01314-41-6	3.3E-02			1.2E-05	99.9	1.2E-02	4.1E-03	2.0E-06	0.10	5.2E-05
Manganese oxide	01313-13-9	2.3E-02			8.4E-06	99.9	8.4E-03	2.9E-03	1.5E-06	7.4E-02	3.7E-05
Nickel oxide	01313-99-1	2.1E-03			7.5E-07	99.9	7.5E-04	2.6E-04	1.3E-07	6.6E-03	3.3E-06
Cadmium oxide	01306-19-0	6.8E-04			2.4E-07	99.9	2.4E-04	8.4E-05	4.2E-08	2.1E-03	1.1E-06
Chromium oxide	01333-82-0	9.3E-04			3.4E-07	99.9	3.4E-04	1.2E-04	5.8E-08	2.9E-03	1.5E-06
Mercury oxide	21908-53-2	8.9E-06			3.2E-09	99.9	3.2E-06	1.1E-06	5.5E-10	2.8E-05	1.4E-08

Notes:
(a) The composition of the particulate is based on testing conducted by Revere of a sample collected from dust accumulated in the baghouse.
(b) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.
(c) Particulate matter emission factors were based on May 2023 testing conducted on the EP 00040 baghouse vent (0.003 grains/dscf) and the engineering estimate that the Central Vacuum System baghouse provides control to the same outlet concentration. Emission factors for the individual constituents were calculated by multiplying the composition of each constituent by the Particulate Matter emission factor.
(d) The cyclone and fabric filter particulate matter removal efficiency is estimated based on typical control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.
(e) The emission rate potentials were calculated by dividing the emission factor by one minus the control efficiency.
(f) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Factor (lb/hr).
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(g) Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Factor (lb/hr).
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(h) It is assumed that all of the Particulate Matter is $PM_{2.5}$.

Table 9
U-ROLL1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)
1176 Bliss Mill (Baffle Chamber, EP 00036)			**1,511**	**8,760**							
Coolant (Baums 882)		40%									
Total Particulate Matter[i]	NY075-00-0	100			10	2.2E-03	2.0E-03	3.0	1.5E-03	18	8.8E-03
PM_{10}[i]	NY075-00-5	100			10	2.2E-03	2.0E-03	3.0	1.5E-03	18	8.8E-03
$PM_{2.5}$[i]	NY075-02-5	100			10	2.2E-03	2.0E-03	3.0	1.5E-03	18	8.8E-03
Hydrotreated light naphthenic petroleum oil	64742-53-6	26			10	5.8E-04	5.2E-04	0.79	3.9E-04	4.6	2.3E-03
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	22			10	4.9E-04	4.4E-04	0.67	3.3E-04	3.9	1.9E-03
Fatty alcohol alkoxylate	37335-03-8	5			10	1.1E-04	1.0E-04	0.15	7.6E-05	0.88	4.4E-04
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1			10	2.2E-05	2.0E-05	3.0E-02	1.5E-05	0.18	8.8E-05
2-Amino-2-methyl-1-propanol	00124-68-5	1			10	2.2E-05	2.0E-05	3.0E-02	1.5E-05	0.18	8.8E-05
(Bonderite S-FN 870)		0.00006%									
Total Particulate Matter[i]	NY075-00-0	100			10	3.2E-09	2.9E-09	4.3E-06	2.2E-09	2.5E-05	1.3E-08
PM_{10}[i]	NY075-00-5	100			10	3.2E-09	2.9E-09	4.3E-06	2.2E-09	2.5E-05	1.3E-08
$PM_{2.5}$[i]	NY075-02-5	100			10	3.2E-09	2.9E-09	4.3E-06	2.2E-09	2.5E-05	1.3E-08
Petroleum distillates	Trade Secret #1	100			10	3.2E-09	2.9E-09	4.3E-06	2.2E-09	2.5E-05	1.3E-08
2-Butoxyethanol	00111-76-2	5			10	1.6E-10	1.4E-10	2.2E-07	1.1E-10	1.3E-06	6.3E-10
Bactericide (Grotan)		60%									
Total Particulate Matter[i]	NY075-00-0	100			10	3.3E-03	3.0E-03	4.5	2.3E-03	26	1.3E-02
PM_{10}[i]	NY075-00-5	100			10	3.3E-03	3.0E-03	4.5	2.3E-03	26	1.3E-02
$PM_{2.5}$[i]	NY075-02-5	100			10	3.3E-03	3.0E-03	4.5	2.3E-03	26	1.3E-02
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	47			10	1.6E-03	1.4E-03	2.1	1.1E-03	12	6.2E-03
2-Aminoethanol	00141-43-5	1.8			10	6.0E-05	5.4E-05	8.1E-02	4.1E-05	0.47	2.4E-04
1706 Hot Mill (Mist Eliminator, EP 00030)			**3,580**	**8,760**							
Coolant (Astro-sol N)											
Total Particulate Matter[i]	NY075-00-0	100			10	0.30	0.27	967	0.48	2,365	1.2
PM_{10}[i]	NY075-00-5	100			10	0.30	0.27	967	0.48	2,365	1.2
$PM_{2.5}$[i]	NY075-02-5	100			10	0.30	0.27	967	0.48	2,365	1.2

Table 9
U-ROLL1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)
Sulfonic acid, petroleum, sodium salts	68608-26-4	20			10	6.0E-02	5.4E-02	193	9.7E-02	473	0.24
Nonylphenol, ethoxylated	09016-45-9	20			10	6.0E-02	5.4E-02	193	9.7E-02	473	0.24
Hexahydro-1,3,5-tris (2-hydroxyethyl)-s-triazine	04719-04-4	20			10	6.0E-02	5.4E-02	193	9.7E-02	473	0.24
Base oil	Trade Secret #3	20			10	6.0E-02	5.4E-02	193	9.7E-02	473	0.24
Alkanolamine	00141-43-5	20			10	6.0E-02	5.4E-02	193	9.7E-02	473	0.24
1721 First Run Down Mill (Mist Eliminator, EP 00029)			**5,859**	**8,760**							
Coolant (Rodshield 68 (QH Everoll A 9883))											
Total Particulate Matter	NY075-00-0	100			10	0.92	0.83	4,863	2.4	7,271	3.6
Total PM_{10}	NY075-00-5	100			10	0.89	0.80	4,687	2.3	7,008	3.5
Total $PM_{2.5}$	NY075-02-5	100			10	0.77	0.69	4,043	2.0	6,044	3.0
Total Filterable PM	F-PM				10	0.29	0.26	---	---	---	---
Filterable PM_{10}	F-PM10				10	0.26	0.23	---	---	---	---
Filterable $PM_{2.5}$	F-PM2.5				10	0.13	0.12	---	---	---	---
Condensible PM[j]	C-PM				10	0.63	0.57	---	---	---	---
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	90			10	0.63	0.57	3,340	1.7	4,993	2.5
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	5			10	3.5E-02	3.2E-02	186	9.3E-02	277	0.14
Amines, tallow alkyl, ethoxylated	61791-26-2	3			10	2.1E-02	1.9E-02	111	5.6E-02	166	8.3E-02
Propane-1,2-diol	00057-55-6	3			10	2.1E-02	1.9E-02	111	5.6E-02	166	8.3E-02
Sulfonic acids, petroleum, sodium salts	68608-26-4	3			10	2.1E-02	1.9E-02	111	5.6E-02	166	8.3E-02
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	3			10	2.1E-02	1.9E-02	111	5.6E-02	166	8.3E-02
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	3			10	2.1E-02	1.9E-02	111	5.6E-02	166	8.3E-02
1,2-Benzisothiazol-3(2H)-one	02634-33-5	0.3			10	2.1E-03	1.9E-03	11	5.6E-03	17	8.3E-03
Trade Secret	Trade Secret #8	10			10	7.0E-02	6.3E-02	371	0.19	555	0.28
1723 Reversing Mill (No Control, EP 00026)			**6,776**	**7,858**							
Coolant (Cupromul 23)		86.7%									
Total Particulate Matter	NY075-00-0	100			0	0.36	0.36	2,439	1.2	2,829	1.4

Table 9
U-ROLL1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)
Total PM_{10}	NY075-00-5	100			0	0.35	0.35	2,372	1.2	2,750	1.4
Total $PM_{2.5}$	NY075-02-5	100			0	0.29	0.29	1,938	0.97	2,247	1.1
Filterable PM	F-PM				0	0.16	0.16	---	---	---	---
Filterable PM_{10}	F-PM10				0	0.15	0.15	---	---	---	---
Filterable $PM_{2.5}$	F-PM2.5				0	8.6E-02	8.6E-02	---	---	---	---
Condensible PM[j]	C-PM				0	0.20	0.20	---	---	---	---
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	74			0	0.15	0.15	999	0.50	1,158	0.58
Hexylene glycol	00107-41-5	4.3			0	8.7E-03	8.7E-03	59	2.9E-02	68	3.4E-02
Bactericide (Grotan)		13.3%									
Total Particulate Matter	NY075-00-0	100			0	0.36	---	---	---	---	---
Total PM_{10}	NY075-00-5	100			0	0.35	---	---	---	---	---
Total $PM_{2.5}$	NY075-02-5	100			0	0.29	---	---	---	---	---
Filterable PM	F-PM				0	0.16	---	---	---	---	---
Filterable PM_{10}	F-PM10				0	0.15	---	---	---	---	---
Filterable $PM_{2.5}$	F-PM2.5				0	8.6E-02	---	---	---	---	---
Condensible PM[j]	C-PM				0	0.20	---	---	---	---	---
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	10			0	2.1E-02	2.1E-02	47	2.4E-02	55	2.7E-02
2-Aminoethanol	00141-43-5	0.40			0	8.0E-04	8.0E-04	1.8	9.0E-04	2.1	1.0E-03
1724 Z-Mill (No Control, EP 00025)			**906**	**8,760**							
Roll Oil (Navi-Guard 135)											
Total Particulate Matter[i]	NY075-00-0	100			0	1.1	1.1	1,006	0.50	9,724	4.9
PM_{10}[i]	NY075-00-5	100			0	1.1	1.1	1,006	0.50	9,724	4.9
$PM_{2.5}$[i]	NY075-02-5	100			0	1.1	1.1	1,006	0.50	9,724	4.9
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			0	0.83	0.83	754	0.38	7,293	3.6
Total											
Total Particulate Matter	NY075-00-0							9,282	4.6	22,232	11
PM_{10}	NY075-00-5							9,039	4.5	21,891	11

Table 9
U-ROLL1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Future Projected Operating Hours[(b)] (hr/yr)	Potential Annual Operating Hours[(c)] (hr/yr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Actual Emission Rate[(f)] (lb/hr)	Actual Annual Emissions[(g)] (lb/yr)	Actual Annual Emissions[(g)] (tpy)	Potential Annual Emissions[(h)] (lb/yr)	Potential Annual Emissions[(h)] (tpy)
$PM_{2.5}$	NY075-02-5							7,960	4.0	20,424	10
Propane-1,2-diol	00057-55-6							111	5.6E-02	166	8.3E-02
Hexylene glycol	00107-41-5							59	2.9E-02	68	3.4E-02
2-Butoxyethanol	00111-76-2							2.2E-07	1.1E-10	1.3E-06	6.3E-10
2-Amino-2-methyl-1-propanol	00124-68-5							3.0E-02	1.5E-05	0.18	8.8E-05
Alkanolamine	00141-43-5							195	9.8E-02	476	0.24
1,2-Benzisothiazol-3(2H)-one	02634-33-5							11	5.6E-03	17	8.3E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4							243	0.12	540	0.27
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2							111	5.6E-02	166	8.3E-02
Nonylphenol, ethoxylated	09016-45-9							193	9.7E-02	473	0.24
Fatty alcohol alkoxylate	37335-03-8							0.15	7.6E-05	0.88	4.4E-04
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0							186	9.3E-02	277	0.14
Amines, tallow alkyl, ethoxylated	61791-26-2							111	5.6E-02	166	8.3E-02
Hydrotreated heavy naphthenic petroleum oil	64742-52-5							1,000	0.50	1,162	0.58
Hydrotreated light naphthenic petroleum oil	64742-53-6							0.79	3.9E-04	4.6	2.3E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9							754	0.38	7,293	3.6
Sulfonic acids, petroleum, sodium salts	68608-26-4							305	0.15	639	0.32
Petroleum distillates	Trade Secret #1							4.3E-06	2.2E-09	2.5E-05	1.3E-08
Petroleum distillates (mineral oil)[(k)]	Trade Secret #2										
Base oil	Trade Secret #3							193	9.7E-02	473	0.24
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4							3,340	1.7	4,993	2.5
Fatty acids, C18-unsaturated phosphates	Trade Secret #5							111	5.6E-02	166	8.3E-02
Trade Secret	Trade Secret #8							371	0.19	555	0.28

Table 9
U-ROLL1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)

Notes:

(a) Based on cooling bath composition information provided by Revere and manufacturer's Safety Data Sheets.

(b) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(c) Revere is proposing an annual operating hour cap on the Reversing Mill of 7,858 hours per year in order to demonstrate compliance with Part 212. This cap may change based on additional source testing.

(d) The mist eliminator particulate matter removal efficiency is estimated based on typical control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potentials for the Bliss Mill, Hot Mill, and Z-Mill were estimated using hourly emission rates for Total Particulate Matter provided by Revere, divided by the assumed particulate matter removal efficiency. For the 1st Run Down Mill and Reversing Mill, PM emission rates are based on testing conducted in May 2023, divided by the assumed particulate matter removal efficiency.

(f) Actual Emission Rates for the Bliss Mill, Hot Mill, and Z-Mill were estimated using hourly emission rates for Total Particulate Matter provided by Revere. For the 1st Run Down Mill and Reversing Mill, PM emission rates are based on testing conducted in May 2023.

(g) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr) x (1-Control Efficiency) (%).

Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(h) Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Rate Potential (lb/hr) x (1-Control Efficiency) (%). For Mills using multiple oils, the Emission Rate Potential was divided by three.

Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(i) For the Mills that did not undergo testing in May 2023, all particulate matter is assumed to be $PM_{2.5}$.

(j) For the Mills that underwent testing in May 2023, the individual contaminants are assumed to only be present in the condensible phase, and emissions are estimated by multiplying the weight percent by the Condensible PM emissions.

(k) This pollutant is present in a biocide applied on some of the Rolling Mills and was included in the prior permit application as being potentially emitted from the Rolling Mills. Upon further investigation, the biocide is completely consumed by the bacteria within 24 hours of application and is not expected to be released to the atmosphere. As such, this biocide has been removed from the Emission Inventory tables. This pollutant has been left in the inventory to maintain the same Trade Secret identification methodology to avoid possible confusion.

Table 10
U-OVER1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent (%)	Future Projected Operating Hours[a] (hr/yr)	Potential Annual Operating Hours[b] (hhr/yr)	Post-Control Emission Rate[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
1715 Overhauler (Wet Scrubber, EP 00031)			**6,066**	**6,658**							
Copper Shavings											
Total Particulate Matter	NY075-00-0	100			2.9	91	32	17,713	8.9	19,441	9.7
Total PM_{10}	NY075-00-5	100			0.72	91	8.0	4,368	2.2	4,794	2.4
Total $PM_{2.5}$	NY075-02-5	100			0.66	91	7.3	4,004	2.0	4,394	2.2
Filterable PM	F-PM				2.4	91	---	---	---	---	---
Filterable PM_{10}	F-PM10				0.20	91	---	---	---	---	---
Filterable $PM_{2.5}$	F-PM2.5				0.14	91	---	---	---	---	---
Condensible PM	C-PM				0.52	91	---	---	---	---	---
Copper	07440-50-8	99.99			0.37	91	4.1	2,250	1.1	2,470	1.2
Tin	07440-31-5	0.15			3.6E-03	91	6.0E-05	3.3E-02	1.6E-05	3.6E-02	1.8E-05
Silver	07440-22-4	0.10			2.4E-03	91	2.7E-05	1.5E-02	7.3E-06	1.6E-02	8.0E-06
Tellurium	13494-80-9	0.05			1.2E-03	91	6.7E-06	3.6E-03	1.8E-06	4.0E-03	2.0E-06
HAPs	NY100-00-0						4.3E-06	2.3E-03	1.2E-06	2.6E-03	1.3E-06
Phosphorus	07723-14-0	0.04			9.6E-04	91	4.3E-06	2.3E-03	1.2E-06	2.6E-03	1.3E-06
Wallover Copperol 1000B											
Total Particulate Matter	NY075-00-0	100			2.9	91	---	---	---	---	---
Total PM_{10}	NY075-00-5	100			0.72	91	---	---	---	---	---
Total $PM_{2.5}$	NY075-02-5	100			0.66	91	---	---	---	---	---
Filterable PM	F-PM				2.4	91	---	---	---	---	---
Filterable PM_{10}	F-PM10				0.20	91	---	---	---	---	---
Filterable $PM_{2.5}$	F-PM2.5				0.14	91	---	---	---	---	---
Condensible PM	C-PM				0.52	91	---	---	---	---	---
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	70			0.36	91	2.8	2,208	1.1	2,424	1.2
Proprietary emulsifier	Trade Secret #6	10			5.2E-02	91	5.8E-02	315	0.16	346	0.17
Total											
Particulate Matter	NY075-00-0						32	17,713	8.9	19,441	9.7
PM_{10}	NY075-00-5						8.0	4,368	2.2	4,794	2.4
$PM_{2.5}$	NY075-02-5						7.3	4,004	2.0	4,394	2.2
Copper	07440-50-8						4.1	2,250	1.1	2,470	1.2
Tin	07440-31-5						6.0E-05	3.3E-02	1.6E-05	3.6E-02	1.8E-05

Table 10
U-OVER1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent (%)	Future Projected Operating Hours[a] (hr/yr)	Potential Annual Operating Hours[b] (hhr/yr)	Post-Control Emission Rate[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Actual Annual Emissions[f] (lb/yr)	Actual Annual Emissions[f] (tpy)	Potential Annual Emissions[g] (lb/yr)	Potential Annual Emissions[g] (tpy)
Silver	07440-22-4						2.7E-05	1.5E-02	7.3E-06	1.6E-02	8.0E-06
Tellurium	13494-80-9						6.7E-06	3.6E-03	1.8E-06	4.0E-03	2.0E-06
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4						2.8	2,208	1.1	2,424	1.2
Proprietary emulsifier	Trade Secret #6						5.8E-02	315	0.16	346	0.17
HAPs	NY100-00-0						4.3E-06	2.3E-03	1.2E-06	2.6E-03	1.3E-06
Phosphorus	07723-14-0						4.3E-06	2.3E-03	1.2E-06	2.6E-03	1.3E-06

Notes:

(a) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(b) Revere is proposing an annual operating hour cap on the Overhauler of 6,658 hours per year in order to demonstrate compliance with Part 212. This cap may change based on additional source testing.

(c) The PM and Copper Emission Factors are based on testing of post-control emissions in May 2023. For the other metal content of the copper shavings, emission factors for the individual constituents are calculated by multiplying the Total Filterable PM Emission Factor by the weight percent for each constituent. For the metal working fluid, emission factors for the individual constituents are calculated by multiplying the Condensible PM Emission Factor by the weight percent for each constituent.

(d) The control efficiency of the scrubber is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3, and assumed to meet the 212-2.3(a) Table 3 control efficiency requirement.

(e) Emission Rate Potential (lb/hr) = Weight Percent (%) x Emission Factor (lb/hr) ÷ 1-Control Efficiency (%).

(f) Actual Annual Emissions (lb/yr) = Weight Percent (%) x Emission Factor (lb/hr) x Future Projected Operating Hours (hr/yr).

Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(g) Potential Annual Emissions (lb/yr) = Weight Percent (%) x Emission Factor (lb/hr) x Potential Annual Operating Hours (hr/yr).

Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 11
U-ANNE1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Emission Rate Potential[d] (lb/hr)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
1729-1734 Lee Wilson Anneal (EP 00369)									
Navi-Guard Roll Oil 135			**3,610**	**17,520**					
Volatile Organic Compounds	NY998-00-0	75			5.2E-03	19	9.4E-03	91	4.6E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			5.2E-03	19	9.4E-03	91	4.6E-02
Bonderite S-FN 860			**3,610**	**17,520**					
Volatile Organic Compounds	NY998-00-0	100			1.8E-04	0.64	3.2E-04	3.1	1.6E-03
Diethylene glycol	00111-46-6	60			1.1E-04	0.38	1.9E-04	1.9	9.3E-04
Polyethylene glycol	25322-68-3	60			1.1E-04	0.38	1.9E-04	1.9	9.3E-04
Azole derivative	Trade Secret #7	5			8.9E-06	3.2E-02	1.6E-05	0.16	7.8E-05
Bonderite S-FN 870			**3,610**	**17,520**					
VOC	NY998-00-0	100			1.8E-04	0.64	3.2E-04	3.1	1.6E-03
Petroleum distillates	Trade Secret #1	100			1.8E-04	0.64	3.2E-04	3.1	1.6E-03
2-Butoxyethanol	00111-76-2	5			8.9E-06	3.2E-02	1.6E-05	0.16	7.8E-05
Wallover Premium 40			**3,610**	**17,520**					
VOC	NY998-00-0	100			1.4E-04	0.49	2.4E-04	2.4	1.2E-03
Petroleum distillates (mineral oil)	08042-47-5	100			1.4E-04	0.49	2.4E-04	2.4	1.2E-03
2383-2386 Ebner Anneal (EP 00440)									
Navi-Guard Roll Oil 135			**10,130**	**17,520**					
Volatile Organic Compounds	NY998-00-0	75			1.9E-03	19	9.7E-03	34	1.7E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			1.9E-03	19	9.7E-03	34	1.7E-02
Bonderite S-FN 860			**10,130**	**17,520**					
Volatile Organic Compounds	NY998-00-0	100			6.6E-05	0.66	3.3E-04	1.1	5.7E-04
Diethylene glycol	25322-68-3	60			3.9E-05	0.40	2.0E-04	0.69	3.4E-04
Polyethylene glycol	Trade Secret #7	60			3.9E-05	0.40	2.0E-04	0.69	3.4E-04

Table 11
U-ANNE1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Future Projected Operating Hours[(b)] (hr/yr)	Potential Annual Operating Hours[(c)] (hr/yr)	Emission Rate Potential[(d)] (lb/hr)	Actual Annual Emissions[(e)] (lb/yr)	Actual Annual Emissions[(e)] (tpy)	Potential Annual Emissions[(f)] (lb/yr)	Potential Annual Emissions[(f)] (tpy)
Azole derivative	00111-46-6	5			3.3E-06	3.3E-02	1.7E-05	5.7E-02	2.9E-05
Bonderite S-FN 870			**10,130**	**17,520**					
VOC	NY998-00-0	100			6.6E-05	0.66	3.3E-04	1.1	5.7E-04
Petroleum distillates	Trade Secret #1	100			6.6E-05	0.66	3.3E-04	1.1	5.7E-04
2-Butoxyethanol	00111-76-2	5			3.3E-06	3.3E-02	1.7E-05	5.7E-02	2.9E-05
Wallover Premium 40			**10,130**	**17,520**					
VOC	NY998-00-0	100			4.8E-05	0.49	2.4E-04	0.84	4.2E-04
Petroleum distillates (mineral oil)	08042-47-5	100			4.8E-05	0.49	2.4E-04	0.84	4.2E-04
1154 Bright Anneal (EP 00367/00362)									
Navi-Guard Roll Oil 135			**1,368**	**8,760**					
Volatile Organic Compounds	NY998-00-0	75			1.2E-02	17	8.4E-03	108	5.4E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			1.2E-02	17	8.4E-03	108	5.4E-02
Bonderite S-FN 860			**1,368**	**8,760**					
Volatile Organic Compounds	NY998-00-0	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
Diethylene glycol	25322-68-3	60			2.5E-04	0.34	1.7E-04	2.2	1.1E-03
Polyethylene glycol	Trade Secret #7	60			2.5E-04	0.34	1.7E-04	2.2	1.1E-03
Azole derivative	00111-46-6	5			2.1E-05	2.9E-02	1.4E-05	0.18	9.2E-05
Bonderite S-FN 870			**1,368**	**8,760**					
VOC	NY998-00-0	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
Petroleum distillates	Trade Secret #1	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
2-Butoxyethanol	00111-76-2	5			2.1E-05	2.9E-02	1.4E-05	0.18	9.2E-05
Wallover Premium 40			**1,368**	**8,760**					
VOC	NY998-00-0	100			3.6E-04	0.49	2.4E-04	3.1	1.6E-03
Petroleum distillates (mineral oil)	08042-47-5	100			3.6E-04	0.49	2.4E-04	3.1	1.6E-03

Table 11
U-ANNE1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Emission Rate Potential[d] (lb/hr)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
464 Tray Style/Coil Anneal (EP 00189/00190)									
Navi-Guard Roll Oil 135			**7,496**	**8,760**					
Volatile Organic Compounds	NY998-00-0	75			1.2E-02	17	8.4E-03	108	5.4E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			1.2E-02	17	8.4E-03	108	5.4E-02
Bonderite S-FN 860			**7,496**	**8,760**					
Volatile Organic Compounds	NY998-00-0	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
Diethylene glycol	25322-68-3	60			2.5E-04	0.34	1.7E-04	2.2	1.1E-03
Polyethylene glycol	Trade Secret #7	60			2.5E-04	0.34	1.7E-04	2.2	1.1E-03
Azole derivative	00111-46-6	5			2.1E-05	2.9E-02	1.4E-05	0.18	9.2E-05
Bonderite S-FN 870			**7,496**	**8,760**					
VOC	NY998-00-0	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
Petroleum distillates	Trade Secret #1	100			4.2E-04	0.57	2.9E-04	3.7	1.8E-03
2-Butoxyethanol	00111-76-2	5			2.1E-05	2.9E-02	1.4E-05	0.18	9.2E-05
Wallover Premium 40			**7,496**	**8,760**					
VOC	NY998-00-0	100			3.6E-04	0.49	2.4E-04	3.1	1.6E-03
Petroleum distillates (mineral oil)	08042-47-5	100			3.6E-04	0.49	2.4E-04	3.1	1.6E-03
1738 Strand Anneal (EP 00027)									
Navi-Guard Roll Oil 135			**6,372**	**8,760**					
Volatile Organic Compounds	NY998-00-0	75			1.3E-02	84	4.2E-02	116	5.8E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75			1.3E-02	84	4.2E-02	116	5.8E-02
Bonderite S-FN 860			**6,372**	**8,760**					
Volatile Organic Compounds	NY998-00-0	100			1.6E-03	10	5.2E-03	14	7.1E-03
Diethylene glycol	00111-46-6	5			1.2E-03	7.6	3.8E-03	11	5.3E-03

Table 11
U-ANNE1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours[c] (hr/yr)	Emission Rate Potential[d] (lb/hr)	Actual Annual Emissions[e] (lb/yr)	Actual Annual Emissions[e] (tpy)	Potential Annual Emissions[f] (lb/yr)	Potential Annual Emissions[f] (tpy)
Polyethylene glycol	25322-68-3	60			1.4E-03	9.2	4.6E-03	13	6.3E-03
Azole derivative	Trade Secret #7	60			1.4E-03	9.2	4.6E-03	13	6.3E-03
Bonderite S-FN 870			**6,372**	**8,760**					
VOC	NY998-00-0	100			2.0E-03	13	6.4E-03	18	8.8E-03
Petroleum distillates	Trade Secret #1	100			2.0E-03	13	6.4E-03	18	8.8E-03
2-Butoxyethanol	00111-76-2	5			1.6E-03	10	5.0E-03	14	6.9E-03
Wallover Premium 40			**6,372**	**8,760**					
VOC	NY998-00-0	100			7.7E-05	0.49	2.4E-04	0.67	3.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100			7.7E-05	0.49	2.4E-04	0.67	3.4E-04
Total									
VOC	NY998-00-0					187	9.3E-02	521	0.26
Diethylene glycol	00111-46-6					8.1	4.1E-03	13	6.4E-03
2-Butoxyethanol	00111-76-2					10	5.1E-03	14	7.2E-03
Petroleum distillates (mineral oil)	08042-47-5					2.4	1.2E-03	10	5.1E-03
Polyethylene glycol	25322-68-3					11	5.3E-03	20	9.8E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9					156	7.8E-02	456	0.23
Petroleum distillates	Trade Secret #1					15	7.6E-03	29	1.5E-02
Azole derivative	Trade Secret #7					10	5.2E-03	18	9.0E-03

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(c) The Potential Annual Operating Hours are based on the units running for 24 hours/day, 7 days/week, 365 days/yr, which results in 8,760 hours per year. The Lee Wilson and Ebner Anneals each have two furnaces so the Potential Annual Operating Hours for those units represent both furnaces running for 8,760 hours.

Table 11
U-ANNE1
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)]	Future Projected Operating Hours[(b)]	Potential Annual Operating Hours[(c)]	Emission Rate Potential[(d)]	Actual Annual Emissions[(e)]		Potential Annual Emissions[(f)]	
		(%)	(hr/yr)	(hr/yr)	(lb/hr)	(lb/yr)	(tpy)	(lb/yr)	(tpy)

(d) The hourly emissions of volatile organic compounds from the residual metalworking fluid were based on the estimated fraction of fluid that remains on the metal, the constituent weight percent of the fluid, the maximum amount of fluid used in a single year between 2019 and 2021, the operating time in 2021, and the fraction of metal fed to the annealing units.
(e) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr).
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(f) Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Rate Potential (lb/hr).
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 12
Pickling Line
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)]	Density[(a)] (lb/gal)	Maximum Hourly Application Rate[(b)] (gal/hr)	Future Projected Annual Usage[(c)] (gal/yr)	Potential Annual Usage[(c)] (gal/yr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Actual Annual Emissions[(f)] (lb/yr)	Actual Annual Emissions[(f)] (tpy)	Potential Annual Emissions[(g)] (lb/yr)	Potential Annual Emissions[(g)] (tpy)
1740 Heavy Gauge Cleaning - Entry (Wet Scrubber, EP 00028)												
PCK Process - Sulfuric acid			**15.3**	**1.59**	**13,928**	**13,928**						
Particulate Matter[(h)]	NY075-00-0	8					25	0.19	1,276	0.64	1,276	0.64
PM_{10}	NY075-00-5	8					25	0.19	1,276	0.64	1,276	0.64
$PM_{2.5}$	NY075-02-5	8					25	0.19	1,276	0.64	1,276	0.64
Sulfuric acid	07664-93-9	8					25	0.19	1,276	0.64	1,276	0.64

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) The Maximum Hourly Application Rate was provided by Revere.

(c) The Actual Annual Usage from 2021 is scaled up to represent an increase of annual operating hours to 8,760 hr/yr estimated by Revere to occur as a result of the EP 00040 furnace replacement project. Since the estimated future projected operating hours are estimated by Revere to be 8,760 hr/yr, Potential Annual Usage is estimated to equal Future Projected Annual Usage.

(d) Emissions from the Pickling Process are controlled by a wet scrubber. The control efficiency of the scrubber is based on the control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potential (lb/hr) = Maximum Hourly Application Rate (gal/hr) x Density (lb/gal) x Weight Percent (%) x Loss Factor of 10 (%).

The majority of the sulfuric acid used in the pickling line remains as a liquid and is sent to on-site waste treatment. To be conservative, it was assumed that 10% of the sulfuric acid is emitted to the exhaust stack.

(f) Actual emissions (lb/yr) = Future Projected Annual Usage (gal/yr) x Density (lb/gal) x Weight Percent (%) x 1-Control Efficiency (%) x 10 (%).

The majority of the sulfuric acid used in the pickling line remains as a liquid and is sent to on-site waste treatment. It was estimated that 10% of the sulfuric acid is emitted to the exhaust stack.

Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(g) Potential emissions (lb/yr) = Potential Annual Usage (gal/yr) x Density (lb/gal) x Weight Percent (%) x 1-Control Efficiency (%) x 10 (%).

The majority of the sulfuric acid used in the pickling line remains as a liquid and is sent to on-site waste treatment. It was estimated that 10% of the sulfuric acid is emitted to the exhaust stack.

Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(h) All particulate matter is assumed to be $PM_{2.5}$.

Table 13
Anneal Cleaning
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Density[a] (lb/gal)	Maximum Hourly Application Rate[b] (gal/hr)	Actual Annual Usage[c] (gal/yr)	Potential Annual Usage[d] (gal/yr)	Control Efficiency[e] (%)	Emission Rate Potential[f] (lb/hr)	Post-Control Emission Rate[g] (lb/hr)	Actual Emissions[h] (lb/yr)	Actual Emissions[h] (tpy)	Potential Emissions[i] (lb/yr)	Potential Emissions[i] (tpy)
Line 1738 Strand Anneal Cleaning (Wet Scrubber, EP 00027)													
Aquaease PL714			**8.345**	**0.795**	**3,454**	**6,964**							
Particulate Matter[j]	NY075-00-0	1.5					85	0.10	1.5E-02	65	3.2E-02	131	6.5E-02
PM_{10}[j]	NY075-00-5	1.5					85	0.10	1.5E-02	65	3.2E-02	131	6.5E-02
$PM_{2.5}$[j]	NY075-02-5	1.5					85	0.10	1.5E-02	65	3.2E-02	131	6.5E-02
Sodium metasilicate	06834-92-0	0.15					85	1.0E-02	1.5E-03	6.5	3.2E-03	13	6.5E-03
Sodium phosphate, tribasic	10101-89-0	6.0E-02					85	4.0E-03	6.0E-04	2.59	1.3E-03	5.2	2.6E-03
Bonderite S-FN 860			**8.345**	**0.795**	**1,612**	**6,964**							
Particulate Matter[j]	NY075-00-0	1.0E-02					85	6.6E-04	1.0E-04	0.20	1.0E-04	0.87	4.4E-04
PM_{10}[j]	NY075-00-5	1.0E-02					85	6.6E-04	1.0E-04	0.20	1.0E-04	0.87	4.4E-04
$PM_{2.5}$[j]	NY075-02-5	1.0E-02					85	6.6E-04	1.0E-04	0.20	1.0E-04	0.87	4.4E-04
Polyethylene glycol	25322-68-3	6.0E-03					85	4.0E-04	6.0E-05	0.12	6.1E-05	0.52	2.6E-04
Azole derivative	Trade Secret #7	6.0E-03					85	4.0E-04	6.0E-05	0.12	6.1E-05	0.52	2.6E-04
Diethylene glycol	00111-46-6	5.0E-04					85	3.3E-05	5.0E-06	1.0E-02	5.0E-06	4.4E-02	2.2E-05
Line 1740 Heavy Gauge Cleaning (Wet Scrubber, EP 00028)													
Aquaease PL714			**8.345**	**0.795**	**3,654**	**6,964**							
Particulate Matter[j]	NY075-00-0	1.5					85	0.10	1.5E-02	69	3.4E-02	131	6.5E-02
PM_{10}[j]	NY075-00-5	1.5					85	0.10	1.5E-02	69	3.4E-02	131	6.5E-02
$PM_{2.5}$[j]	NY075-02-5	1.5					85	0.10	1.5E-02	69	3.4E-02	131	6.5E-02
Sodium metasilicate	06834-92-0	0.15					85	1.0E-02	1.5E-03	6.9	3.4E-03	13	6.5E-03
Sodium phosphate, tribasic	10101-89-0	6.0E-02					85	4.0E-03	6.0E-04	2.7	1.4E-03	5.2	2.6E-03
Bonderite S-FN 860			**8.345**	**0.795**	**758**	**6,964**							
Particulate Matter[j]	NY075-00-0	1.3E-02					85	8.3E-04	1.2E-04	0.12	5.9E-05	1.1	5.4E-04
PM_{10}[j]	NY075-00-5	1.3E-02					85	8.3E-04	1.2E-04	0.12	5.9E-05	1.1	5.4E-04
$PM_{2.5}$[j]	NY075-02-5	1.3E-02					85	8.3E-04	1.2E-04	0.12	5.9E-05	1.1	5.4E-04
Polyethylene glycol	25322-68-3	7.5E-03					85	5.0E-04	7.5E-05	7.1E-02	3.6E-05	0.65	3.3E-04
Azole derivative	Trade Secret #7	7.5E-03					85	5.0E-04	7.5E-05	7.1E-02	3.6E-05	0.65	3.3E-04
Diethylene glycol	00111-46-6	6.3E-04					85	4.1E-05	6.2E-06	5.9E-03	3.0E-06	5.4E-02	2.7E-05
Hydrogen Peroxide			**9.3464**	**0.795**	**2,551**	**6,964**							
Particulate Matter[j]	NY075-00-0	0.5					85	3.7E-02	5.6E-03	18	8.9E-03	49	2.4E-02
PM_{10}[j]	NY075-00-5	0.5					85	3.7E-02	5.6E-03	18	8.9E-03	49	2.4E-02
$PM_{2.5}$[j]	NY075-02-5	0.5					85	3.7E-02	5.6E-03	18	8.9E-03	49	2.4E-02
Hydrogen peroxide	07722-84-1	0.5					85	3.7E-02	5.6E-03	18	8.9E-03	49	2.4E-02

Table 13
Anneal Cleaning
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Density[a] (lb/gal)	Maximum Hourly Application Rate[b] (gal/hr)	Actual Annual Usage[c] (gal/yr)	Potential Annual Usage[d] (gal/yr)	Control Efficiency[e] (%)	Emission Rate Potential[f] (lb/hr)	Post-Control Emission Rate[g] (lb/hr)	Actual Emissions[h] (lb/yr)	Actual Emissions[h] (tpy)	Potential Emissions[i] (lb/yr)	Potential Emissions[i] (tpy)
Total													
Particulate Matter	NY075-00-0									152	7.6E-02	312	0.16
PM10	NY075-00-5									152	7.6E-02	312	0.16
PM2.5	NY075-02-5									152	7.6E-02	312	0.16
Diethylene glycol	00111-46-6									1.6E-02	8.0E-06	9.8E-02	4.9E-05
Sodium metasilicate	06834-92-0									13.3	6.7E-03	26	1.3E-02
Hydrogen peroxide	07722-84-1									18	8.9E-03	49	2.4E-02
Sodium phosphate, tribasic	10101-89-0									5.3	2.7E-03	10	5.2E-03
Polyethylene glycol	25322-68-3									0.19	9.6E-05	1.2	5.9E-04
Azole derivative	Trade Secret #7									0.19	9.6E-05	1.2	5.9E-04

Notes:
(a) From manufacturer's Safety Data Sheets.
(b) The Maximum Hourly Application Rate was provided by Revere.
(c) The Actual Annual Usage is based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.
(d) Potential Annual Usage (gal/yr) = Maximum Hourly Application Rate (gal/hr) x 8,760 (hr/yr)
(e) Emissions from the Pickling Process are controlled by a wet scrubber. The control efficiency of the scrubber is based on the control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.
(f) Emission Rate Potential (lb/hr) = Weight Percent (%) x Density (lb/gal) x Maximum Hourly Application Rate (gal/hr).
(g) Post-Control Emission Rate (lb/hr) = Emission Rate Potential (lb/hr) x 1-Control Efficiency (%).
(h) Actual emissions (lb/yr) = Weight Percent (%) x Density (lb/gal) x Actual Annual Usage (gal/yr) x (1-Control Efficiency) (%).
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(i) Potential emissions (lb/yr) = Weight Percent (%) x Density (lb/gal) x Potential Annual Usage (gal/yr) x (1-Control Efficiency) (%).
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(j) All Particulate Matter is assumed to be $PM_{2.5}$.

Table 14
U-GALV1 Molten Metal Tank
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours (hr/yr)	Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)
Molten Zinc/Tin Bath (Baghouse, EP 00601)			**185**	**8,760**								
Molten Metal												
Particulate Matter[h]	NY075-00-0	100			2.1	99	2.1	2.1E-02	3.8	1.9E-03	181	9.1E-02
PM_{10}[h]	NY075-00-5	100			2.1	99	2.1	2.1E-02	3.8	1.9E-03	181	9.1E-02
$PM_{2.5}$[h]	NY075-02-5	100			2.1	99	2.1	2.1E-02	3.8	1.9E-03	181	9.1E-02
Zinc	07440-66-6	50			2.1	99	1.0	1.0E-02	1.9	9.6E-04	91	4.5E-02
Tin	07440-31-5	50			2.1	99	1.0	1.0E-02	1.9	9.6E-04	91	4.5E-02
Zaclon AB Flux												
Particulate Matter[h]	NY075-00-0	100			2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05	1.8	9.2E-04
PM_{10}[h]	NY075-00-5	100			2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05	1.8	9.2E-04
$PM_{2.5}$[h]	NY075-02-5	100			2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05	1.8	9.2E-04
Zinc chloride	07646-85-7	70			2.09E-02	99	1.5E-02	1.5E-04	2.7E-02	1.4E-05	1.3	6.4E-04
Ammonium chloride	12125-02-9	30			2.09E-02	99	6.3E-03	6.3E-05	1.2E-02	5.8E-06	0.55	2.7E-04
Total												
Particulate Matter[h]	NY075-00-0						2.1	2.1E-02	3.9	1.9E-03	183	9.2E-02
PM_{10}[h]	NY075-00-5						2.1	2.1E-02	3.9	1.9E-03	183	9.2E-02
$PM_{2.5}$[h]	NY075-02-5						2.1	2.1E-02	3.9	1.9E-03	183	9.2E-02
Tin	07440-31-5						1.0	1.0E-02	1.9	9.6E-04	91	4.5E-02
Zinc	07440-66-6						1.0	1.0E-02	1.9	9.6E-04	91	4.5E-02
Zinc chloride	07646-85-7						1.5E-02	1.5E-04	2.7E-02	1.4E-05	1.3	6.4E-04
Ammonium chloride	12125-02-9						6.3E-03	6.3E-05	1.2E-02	5.8E-06	0.55	2.7E-04

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(c) The emission factor of 2.09 lb/hr was taken from *Emissions From Hot-Dip Galvanizing Processes: Final Report; EPA - 905/4-76-002* (March 1976). The emission factor includes the full standard deviation to be conservative and is representative of emissions from both the flux and molten metal. In order to separate emissions from the molten metal and the flux, the emission factor was multiplied by 99% for the molten metal and 1% for the flux. This was based on the relative mass of flux added compared to the amount of molten metal in the bath.

(d) The control efficiency of the baghouse is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potential (lb/hr) = Emission Factor (lb/hr) x Composition (%).

(f) Post-Control Emission Rate (lb/hr) = Emission Factor (lb/hr) x 1-Control Efficiency (%) x Composition (%).

(g) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr) x (1-Control Efficiency (%)/100).

Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(h) Potential annual emissions are based on post-control because the control device is required under the ASF Permit. Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Factor (lb/hr) x Composition (%) x (1-Control Efficiency (%)/100).

Table 14
U-GALV1 Molten Metal Tank
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)]	Future Projected Operating Hours[(b)]	Potential Annual Operating Hours	Emission Factor[(c)]	Control Efficiency[(d)]	Emission Rate Potential[(e)]	Post-Control Emission Rate[(f)]	Actual Annual Emissions[(g)]		Potential Annual Emissions[(h)]	
		(%)	(hr/yr)	(hr/yr)	(lb/hr)	(%)	(lb/hr)	(lb/hr)	(lb/yr)	(tpy)	(lb/yr)	(tpy)

Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(i) All particulate matter is assumed to be $PM_{2.5}$.

Table 15
U-GALV1 Acid Tank
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a]	Future Projected Operating Hours[b] (hr/yr)	Potential Annual Operating Hours (hr/yr)	Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Actual Annual Emissions[g] (lb/yr)	Actual Annual Emissions[g] (tpy)	Potential Annual Emissions[h] (lb/yr)	Potential Annual Emissions[h] (tpy)
HCl and Flux Bath (Scrubber, EP 00600)			185	8,760								
Muriatic Acid												
Particulate Matter[i]	NY075-00-0	37			9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
PM_{10}[i]	NY075-00-5	37			9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
$PM_{2.5}$[i]	NY075-02-5	37			9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
HAPs	NY100-00-0				9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
Hydrogen chloride	07647-01-0	37			9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
Zalcon W												
Particulate Matter[i]	NY075-00-0	73			2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04	36	1.8E-02
PM_{10}[i]	NY075-00-5	73			2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04	36	1.8E-02
$PM_{2.5}$[i]	NY075-02-5	73			2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04	36	1.8E-02
Zinc chloride	07646-85-7	40			9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
Ammonium chloride	12125-02-9	30			9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
Barium chloride	10361-37-2	2.5			9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
Total												
Particulate Matter	NY075-00-0						0.12	1.8E-02	3.3	1.6E-03	155	7.8E-02
PM_{10}	NY075-00-5						0.12	1.8E-02	3.3	1.6E-03	155	7.8E-02
$PM_{2.5}$	NY075-02-5						0.12	1.8E-02	3.3	1.6E-03	155	7.8E-02
Zinc chloride	07646-85-7						9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
Barium chloride	10361-37-2						9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
Ammonium chloride	12125-02-9						9.1E-03	1.4E-03	0.25	1.3E-04	12	6.0E-03
HAPs	NY100-00-0						9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02
Hydrogen chloride	07647-01-0						9.1E-02	1.4E-02	2.5	1.3E-03	119	6.0E-02

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) Future Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace replacement project.

(c) The hydrogen chloride emission factor was calculated using the equations provided in EPA's Guidance Document *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Steel Pickling - HCl Process - Background Information for Proposed Standards* (June, 1997) Appendix E.

The guidance document does not provide methods to estimate the emissions of the other chloride constituents. A literature search revealed that the other chloride constituents are expected to have significantly lower vapor pressures than hydrogen chloride. Therefore, the emission factors for these constituents were conservatively assumed to be 10% of the emission factor for hydrogen chloride.

(d) The control efficiency of the wet scrubber is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

Table 15
U-GALV1 Acid Tank
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)]	Future Projected Operating Hours[(b)]	Potential Annual Operating Hours	Emission Factor[(c)]	Control Efficiency[(d)]	Emission Rate Potential[(e)]	Post-Control Emission Rate[(f)]	Actual Annual Emissions[(g)]		Potential Annual Emissions[(h)]	
			(hr/yr)	(hr/yr)	(lb/hr)	(%)	(lb/hr)	(lb/hr)	(lb/yr)	(tpy)	(lb/yr)	(tpy)

(e) Emission Rate Potential (lb/hr) = Emission Factor (lb/hr).
(f) Post-Control Emission Rate (lb/hr) = Emission Rate Potential (lb/hr) x 1-Control Efficiency (%).
(g) Actual Annual Emissions (lb/yr) = Future Projected Operating Hours (hr/yr) x Emission Factor (lb/hr) x (1-Control Efficiency (%)/100).
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(h) Potential Annual Emissions (lb/yr) = Potential Annual Operating Hours (hr/yr) x Emission Factor (lb/hr) x (1-Control Efficiency (%)/100).
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(i) All particulate matter is assumed to be $PM_{2.5}$.

Table 16
U-SOLV1 Non-Exempt Parts Washer
Summary of Actual and Potential Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Density[a] (lb/gal)	Volume[b] (gal)	Surface Area[b] (ft^2)	Actual Annual Usage[b] (gal/yr)	Emission Rate Potential[c] (lb/hr)	Actual Annual Emissions[d] (lb/yr)	Actual Annual Emissions[d] (tpy)	Potential Annual Emissions[e] (lb/yr)	Potential Annual Emissions[e] (tpy)
Evaporation Calculation Method			**6.8**	**550**	**34**	**870**					
VOC	NY998-00-0	3.1					5.0E-02	181	9.1E-02	434	0.22
Distillates, petroleum, hydrotreated light[f]	64742-47-8	3.1					5.0E-02	181	9.1E-02	434	0.22

(a) From manufacturer's Safety Data Sheets.
(b) Information provided by Revere for 2021 and reflects annual usage minus the amount of solvent disposed of as liquid waste.
(c) The Emission Rate Potential was estimated using the evaporation model provided in *Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16* (August 2007) Section 3.7.
(d) Actual Annual Emissions (lb/yr) = Actual Annual Usage (gal/yr) x Density (lb/gal) Weight Percent (%)
Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(e) Potential Annual Emissions (lb/yr) = Emission Rate Potential (lb/hr) x 8,760 (hr/yr)
Potential Annual Emissions (tpy) = Potential Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(f) The manufacturer's SDS indicates that the solvent is entirely comprised of distillates, petroleum, hydrotreated light, but also guarentees that the VOC content is less than 25 g/L. Emissions were estimated assuming 25 g/L of VOC and that all of the VOC consists of distillates, petroleum, hydrotreated light.

ATTACHMENT D
REGULATORY DISCUSSION

Attachment D
Regulatory Discussion
Revere Copper Products, Inc.

The following discussion provides additional information regarding key state and federal regulations that apply to the Revere Copper Products, Inc. (Revere) facility.

Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Subpart 201-5

Revere currently operates under an Air State Facility (ASF) Permit (No. 6-3013-00091/00039), which has an expiration date of October 31, 2023. Revere is submitting an application to both renew and modify the ASF Permit. The primary modifications being proposed include the change from firing No. 6 fuel oil to firing No. 2 fuel oil as backup fuel by the facility boilers and replacing an electric casting furnace with a new electric casting furnace that will provide an estimated 23.3% increase in output casting.

In accordance with 201-5.1(a)(1) and 201-7.1, the facility has established emission caps of 95 tons per year (tpy) each for nitrogen oxides (NO_X) and sulfur dioxide (SO_2), and 90 tpy each for total particulate matter (PM) and PM less than 10 and 2.5 microns (PM_{10} and $PM_{2.5}$, respectively).

As shown in the emission inventory (**Attachment C**), annual actual and potential emissions of carbon monoxide (CO), PM, PM_{10}, $PM_{2.5}$, and SO_2 are each estimated to be less than the respective major source thresholds. Annual potential and actual emissions of volatile organic compounds (VOCs) and individual and combined hazardous air pollutants (HAPs) also are estimated to be below their respective major source thresholds.

Revere is proposing to maintain the existing emission cap for NO_X, but is requesting that the emission caps for PM, PM_{10}, and $PM_{2.5}$ be removed from the Permit. Additionally, Revere is proposing that the SO_2 and associated fuel oil use caps be removed from the permit as the estimated potential SO_2 emissions have decreased to below 100 tpy due to the shift from No. 6 to No. 2 fuel oil as backup fuel for the main boilers and the current sulfur content limit for No. 2 fuel oil (15 ppm).

6 NYCRR PART 212

Part 212 applies to emission sources and/or emission points associated with a process operation. Upon issuance of a renewal for an existing permit or registration, facilities must evaluate emissions from processes with respect to Part 212. In accordance with 212-1.2(b)(18), combustion installations are not a process operation and are not subject to Part 212. Therefore, combustion sources at the Revere facility have not been included in the Part 212 evaluation. In addition, in accordance with 212-1.4(a) process emission sources that are exempt or trivial under Section 201-3.2 and 201-3.3 are exempt from Part 212 and have not been included in the evaluation.

Process operations at the facility that are subject to Subparts 212-1 and 212-2 include casting furnaces, rolling mills, annealing furnaces, a pickling line, and a zinc/tin galvanizing line. These sources and their associated key parameters pertinent to the Part 212 evaluation are summarized in **Tables 1** and **2** at the end of this Attachment. Contaminants with high, medium, and low toxicity were assigned an initial

Environmental Rating (ER) of A, B, and C, respectively. Contaminants that did not have a toxicity provided in NYSDEC's *DAR-1 Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212* (issued February 2021) were assigned an initial ER of B.

Process operations potentially emit the following HTACs: cadmium oxide, chromium oxide, lead oxide, mercury oxide, and nickel oxide, all of which may be emitted from the induction furnaces in the Cast Shop. The furnaces are typically exhausted to two baghouses, but each of the baghouses can be bypassed in the event there is a fire or emergency in the system. Emissions of PM, PM_{10}, and $PM_{2.5}$ during bypass operations are capped in the existing permit through conditions limiting the number of bypass hours allowed on a 12-month rolling basis. As the bypass scenario is considered to be a trivial activity in accordance with 201-3.3(c)(33), emissions from bypass operations were not included in the Part 212 evaluation as emissions from exempt and trivial activities are not subject to Part 212 (212-1.4(a)).

Emissions from the baghouses as well as emissions from bypass operations are exhausted from Emission Points (EPs) 00039 and 00040. In addition, Cast Shop dust is periodically vented from a central vacuum exhaust (EP 00602) that is used for housekeeping purposes.

Annual actual emissions of the five HTACs are estimated to be less than their respective Mass Emission Limits (MELs) in Table 2 of Subpart 212-2. As such, these emissions are not required to be modeled.

Non-HTACs also are estimated to be emitted from the facility including some that are projected to have actual annual emissions in excess of 100 pounds per year (lb/yr). The non-HTACs with emissions in excess of 100 lb/yr are subject to the air cleaning requirements in Table 4 of Subpart 212-2. In accordance with NYSDEC's DAR-1 guidance, non-HTAC contaminants with actual annual emissions less than 100 lb/yr do not need to be assigned an environmental rating or be further evaluated. However, during the review of the air dispersion modeling protocol for this project, NYSDEC indicated that non-HTACs that are not listed in DAR-1 must undergo a toxicity review by NYSDEC. Refer to the dispersion modeling report in **Attachment E** for further discussion of the evaluation of unlisted non-HTAC emissions.

Non-HTACs with estimated ERPs that trigger a control efficiency requirement other than the guideline concentration are graphite, iron oxide, and copper oxide. Based on the proposed ER for these constituents of B and estimated ERPs greater than 10 lb/hr for EPs 00040 (graphite, iron oxide, and copper oxide) and 00602 (graphite and copper oxide), these emissions are subject to 90% control. The baghouses associated with EPs 00040 and 00602 achieve estimated control efficiencies of greater than 90% for PM emissions. Therefore, emissions from these sources meet the above-mentioned control requirements. One additional constituent that was not listed in DAR-1 that NYSDEC has identified as A-rated, 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, has estimated emissions from EP 00026 (Reversing Mill) that are subject to a Guideline Concentration and, therefore, required modeling. Refer to **Attachment E** for additional discussion.

Emission points with estimated emission rates of PM_{10} and $PM_{2.5}$ that trigger a control efficiency requirement based on Table 3 of Subpart 212-2 are in the U-CAST1 emission unit: EPs 00040 and 00602. Note that emissions of PM_{10} and $PM_{2.5}$ have been assumed to be B-rated because the PM is comprised primarily of medium toxicity constituents.

Air Dispersion Modeling
The facility has performed a Part 212 air dispersion modeling evaluation and has included the evaluation in **Attachment E**. The modeling evaluation includes the modeling protocol submitted to NYSDEC on December 1, 2022 and approved with comments via email received on January 9, 2023; NYSDEC's comments on the modeling protocol were incorporated into the modeling performed and are addressed in the modeling report provided in **Attachment E**.

Grain Standard
The Subpart 212-2.4 grain standard, which applies to non-exempt process operations with emissions of PM, is 0.15 grains per dry standard cubic foot of exhaust gas (gr/dscf) for sources permitted prior to July 1, 1973 or 0.05 gr/dscf for sources permitted after July 1, 1973. As shown in **Table 3**, estimated actual hourly emission rates are well under the most conservative limit of 0.05 gr/dscf for all emission points.

6 NYCRR Subpart 225-1

Revere has changed the backup fuel for the three main boilers from No. 6 fuel oil to No. 2 fuel oil. Due to this change, the facility is subject to the fuel sulfur limit of 0.0015 percent sulfur by weight provided in Section 225-1.2(d).

6 NYCRR Subpart 226-1

Subpart 226-1 establishes requirements for cold cleaning degreasers, open-top vapor degreasers, and conveyorized degreasers that use a solution containing VOCs. The criteria for compliant solvents used in cold cleaning degreasers was modified effective December 1, 2020 from a vapor pressure limit of 1 millimeter of mercury (mmHg) at 20°C to a VOC content limit of 50 grams per liter (g/L) of solvent. Revere operates three cold cleaning degreasers. The cleaner materials used in two of the units are caustic cleaners and based on their Safety Data Sheets (SDSs) do not contain VOCs. The cleaning material used in the third unit has a VOC content below the applicable limit, based on a review of the SDS.

Climate Leadership and Community Protection Act (CLCPA)

The CLCPA, which became effective January 1, 2020, directs state agencies to identify whether the decisions they make are consistent with the Statewide greenhouse gas (GHG) emission limits established by the CLCPA in Environmental Conservation Law (ECL) Article 75. In the case of NYSDEC, this includes evaluating whether permits issued are consistent with or would interfere with the attainment of the Statewide GHG emission limits in ECL Article 75.

NYSDEC has recently finalized *DAR-21 – The Climate Leadership and Community Protection Act (CLCPA) and Air Permit Applications* (DAR-21). In accordance with DAR-21, the policy applies to new and modified ASF permits and ASF permit renewals. However, DAR-21 also states that "A permit renewal that does not include a significant modification and would not lead to an increase in actual or potential GHG emissions would in most circumstances be considered consistent with the CLCPA pending finalization of the scoping plan and future regulations. However, DEC staff may require an applicant to submit a CLCPA analysis for a permit renewal to ensure the requirements of Section 7(2) are met."

A CLCPA analysis has been completed as part of this ASF Permit renewal/modification application and is provided in **Exhibit 1**.

Title 40 of the Code of Federal Regulations (40 CFR) Part 63, Subpart JJJJJJ (6J)

Subpart 6J applies to each existing, new, and reconstructed industrial, commercial, and institutional boiler within a subcategory (coal, biomass, oil) located at an area source of HAP. Boilers meeting the definition of gas-fired boiler are not subject to the Area Source Boiler MACT. Gas-fired boilers that burn liquid fuel during periods of gas curtailment, gas supply emergencies, or for periodic testing not to exceed 48 hours during any calendar year are included in the definition of gas-fired boilers and, therefore, are not subject to Subpart 6J.

The three boilers at Revere are dual-fuel boilers that fire primarily natural gas. These boilers previously used No. 6 fuel oil as a backup but have transitioned to using No. 2 fuel oil as a backup. Revere plans to operate the boilers as gas-fired boilers and will fire No. 2 fuel oil only during periods of natural gas curtailment and up to 48 hours per calendar year for periodic testing and maintenance.

40 CFR Part 63, Subpart TTTTTT (6T)

Revere no longer produces or uses brass and has no plans to re-introduce capability to use or produce brass in the future. Subpart 6T only applies to secondary nonferrous metals processing facilities, which are defined in §63.11472 as:

> "Secondary nonferrous metals processing facility means a brass and bronze ingot making, secondary magnesium processing, or secondary zinc processing plant that uses furnace melting operations to melt post-consumer nonferrous metal scrap to make products including bars, ingots, blocks, or metal powders."

As such, Revere is no longer subject to Subpart 6T and the existing Subpart 6T conditions in the permit should be removed.

Table 1
Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Toxicity[a]	NYSDEC Assigned Toxicity[b]	Proposed Environmental Rating[c]	HTAC[d] (Y/N)	HTAC Mass Emission Limit[d] (lb/yr)	PB Trigger[e] (Y/N)	Pre-Control Hourly Emissions (lb/hr)	Control Efficiency (%)	Post-Control Hourly Emissions (lb/hr)	Facility-Wide Annual Actual Emissions (lb/yr)	Part 212 Requirement	Modeling Required[f] (Yes/No)
U-CAST1 (EP 00039) - Casting Furnaces To Baghouse[g]													
PM_{10}	NY075-00-5	---	---	B	---	---	---	4.8E+00	95	2.4E-01	20,831	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	2.9E+00	95	1.5E-01	15,496	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
Barium oxide	01304-28-5	NL	M	B	N	---	N	2.4E-04	95	1.2E-05	4.2E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Cadmium oxide	01306-19-0	H	---	A	Y	1	Y	4.5E-05	95	2.2E-06	7.8E-02	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Iron oxide	01309-37-1	---	---	B	N	---	N	6.0E-01	95	3.0E-02	1,049	**Table 4, B-Rated; ERP < 1 lb/hr = Guideline Concentration**	**Yes**
Magnesium oxide	01309-48-4	---	---	B	N	---	N	1.5E-03	95	7.7E-05	2.7	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Nickel oxide	01313-99-1	H	---	A	Y	10	N	1.4E-04	95	6.9E-06	2.4E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Zinc oxide	01314-13-2	M	---	B	N	---	N	5.5E-03	95	2.8E-04	9.7	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Lead oxide	01314-41-6	H	---	A	Y	5	Y	2.2E-03	95	1.1E-04	3.8	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Copper oxide	01317-38-0	---	---	B	N	---	N	2.0E+00	95	1.0E-01	3,528	**Table 4, B-Rated; ERP < 10 lb/hr = Guideline Concentration**	**Yes**
Chromium oxide	01333-82-0	H	---	A	Y	250	N	6.2E-05	95	3.1E-06	1.1E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Aluminum oxide	01344-28-1	---	---	B	N	---	N	1.8E-02	95	9.0E-04	32	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Graphite	07782-42-5	---	---	B	N	---	N	2.6E+00	95	1.3E-01	4,620	**Table 4, B-Rated; ERP < 10 lb/hr = Guideline Concentration**	**Yes**
Silver oxide	20667-12-3	NL	NA	B	N	---	N	6.4E-05	95	3.2E-06	1.1E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Mercury oxide	21908-53-2	H	---	A	Y	5	Y	5.8E-07	95	2.9E-08	1.0E-03	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
U-CAST1 (EP 00040) - Casting Furnaces To Baghouse[g]													
PM_{10}	NY075-00-5	---	---	B	---	---	---	9.8E+01	99	9.8E-01	20,831	**Table 3, B-Rated; ERP < 100 lb/hr = 91% Control Required**	**No***
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	2.9E+01	99	2.9E-01	15,496	**Table 3, B-Rated; ERP < 100 lb/hr = 91% Control Required**	**No***
Barium oxide	01304-28-5	NL	M	B	N	---	N	7.3E-03	99	7.3E-05	4.2E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Cadmium oxide	01306-19-0	H	---	A	Y	1	Y	1.4E-03	99	1.4E-05	7.8E-02	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Iron oxide	01309-37-1	---	---	B	N	---	N	1.8E+01	99	1.8E-01	1,049	**Table 4, B-Rated; ERP > 10 lb/hr = 90% Control Required**	**No***
Magnesium oxide	01309-48-4	---	---	B	N	---	N	4.7E-02	99	4.7E-04	2.7	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Nickel oxide	01313-99-1	H	---	A	Y	10	N	4.2E-03	99	4.2E-05	2.4E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Zinc oxide	01314-13-2	M	---	B	N	---	N	1.7E-01	99	1.7E-03	9.7	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Lead oxide	01314-41-6	H	---	A	Y	5	Y	6.5E-02	99	6.5E-04	3.8	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Copper oxide	01317-38-0	---	---	B	N	---	N	6.1E+01	99	6.1E-01	3,528	**Table 4, B-Rated; ERP > 10 lb/hr = 90% Control Required**	**No***
Chromium oxide	01333-82-0	H	---	A	Y	250	N	1.9E-03	99	1.9E-05	1.1E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Aluminum oxide	01344-28-1	---	---	B	N	---	N	5.5E-01	99	5.5E-03	32	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Graphite	07782-42-5	---	---	B	N	---	N	8.0E+01	99	8.0E-01	4,620	**Table 4, B-Rated; ERP > 10 lb/hr = 90% Control Required**	**No***
Silver oxide	20667-12-3	NL	NA	B	N	---	N	1.9E-03	99	1.9E-05	1.1E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Mercury oxide	21908-53-2	H	---	A	Y	5	Y	1.8E-05	99	1.8E-07	1.0E-03	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
U-CAST1 (EP 00602) - Central Vacuum													
PM_{10}	NY075-00-5	---	---	B	---	---	---	3.6E+01	99.9	3.6E-02	20,831	**Table 3, B-Rated; ERP < 100 lb/hr = 91% Control Required**	**No***
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	3.6E+01	99.9	3.6E-02	15,496	**Table 3, B-Rated; ERP < 100 lb/hr = 91% Control Required**	**No***
Barium oxide	01304-28-5	NL	M	B	N	---	N	1.3E-03	99.9	1.3E-06	4.2E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Cadmium oxide	01306-19-0	H	---	A	Y	1	Y	2.4E-04	99.9	2.4E-07	7.8E-02	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Iron oxide	01309-37-1	---	---	B	N	---	N	3.3E+00	99.9	3.3E-03	1,049	**Table 4, B-Rated; ERP < 10 lb/hr = Guideline Concentration**	**Yes**
Magnesium oxide	01309-48-4	---	---	B	N	---	N	8.4E-03	99.9	8.4E-06	3	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Nickel oxide	01313-99-1	H	---	A	Y	10	N	7.5E-04	99.9	7.5E-07	2.4E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Zinc oxide	01314-13-2	M	---	B	N	---	N	3.0E-02	99.9	3.0E-05	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Lead oxide	01314-41-6	H	---	A	Y	5	Y	1.2E-02	99.9	1.2E-05	4	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Copper oxide	01317-38-0	---	---	B	N	---	N	1.1E+01	99.9	1.1E-02	3,528	**Table 4, B-Rated; ERP > 10 lb/hr = 90% Control Required**	**No***
Chromium oxide	01333-82-0	H	---	A	Y	250	N	3.4E-04	99.9	3.4E-07	1.1E-01	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
Aluminum oxide	01344-28-1	---	---	B	N	---	N	9.9E-02	99.9	9.9E-05	32	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Graphite	07782-42-5	---	---	B	N	---	N	1.4E+01	99.9	1.4E-02	4,620	**Table 4, B-Rated; ERP > 10 lb/hr = 90% Control Required**	**No***
Silver oxide	20667-12-3	NL	NA	B	N	---	N	3.5E-04	99.9	3.5E-07	1.1E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Mercury oxide	21908-53-2	H	---	A	Y	5	Y	3.2E-06	99.9	3.2E-09	1.0E-03	Facility-wide annual emissions are below the HTAC Mass Emission Limit	No
U-ROLL1 (EP 00036) - Bliss Mill													
PM_{10}	NY075-00-5	---	---	B	---	---	---	5.6E-03	10	5.0E-03	20,831	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	5.6E-03	10	5.0E-03	15,496	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	1.6E-10	10	1.4E-10	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Amino-2-methyl-1-propanol	00124-68-5	M	---	B	N	---	N	2.2E-05	10	2.0E-05	3.0E-02	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Aminoethanol	00141-43-5	M	---	B	N	---	N	6.0E-05	10	5.4E-05	195	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	NL	H	A	N	---	N	1.6E-03	10	1.4E-03	243	**Table 4, A-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**

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Table 1
Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Toxicity[a]	NYSDEC Assigned Toxicity[b]	Proposed Environmental Rating[c]	HTAC[d] (Y/N)	HTAC Mass Emission Limit[d] (lb/yr)	PB Trigger[e] (Y/N)	Pre-Control Hourly Emissions (lb/hr)	Control Efficiency (%)	Post-Control Hourly Emissions (lb/hr)	Facility-Wide Annual Actual Emissions (lb/yr)	Part 212 Requirement	Modeling Required[f] (Yes/No)
Fatty alcohol alkoxylate	37335-03-8	NL	U	B	N	---	N	1.1E-04	10	1.0E-04	1.5E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	NL	M	B	N	---	N	4.9E-04	10	4.4E-04	1,000	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Hydrotreated light naphthenic petroleum oil	64742-53-6	M	---	B	N	---	N	5.8E-04	10	5.2E-04	7.9E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	3.2E-09	10	2.9E-09	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral oil)	Trade Secret #2	NL	M	B	N	---	N	0.0E+00	10	0.0E+00	(h)	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ROLL1 (EP 00030) - Hot Mill													
PM_{10}	NY075-00-5	---	---	B	---	---	---	3.0E-01	10	2.7E-01	20,831	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	3.0E-01	10	2.7E-01	15,496	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Alkanolamine	00141-43-5	M	---	B	N	---	N	6.0E-02	10	5.4E-02	195	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	NL	H	A	N	---	N	6.0E-02	10	5.4E-02	243	**Table 4, A-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Nonylphenol, ethoxylated	09016-45-9	NL	H	A	N	---	N	6.0E-02	10	5.4E-02	193	**Table 4, A-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Sulfonic acid, petroleum, sodium salts	68608-26-4	NL	NA	B	N	---	N	6.0E-02	10	5.4E-02	305	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Base oil	Trade Secret #3	---	---	B	N	---	N	6.0E-02	10	5.4E-02	193	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
U-ROLL1 (EP 00029) - First Run Down Mill													
PM_{10}	NY075-00-5	---	---	B	---	---	---	8.9E-01	10	8.0E-01	20,831	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	7.7E-01	10	6.9E-01	15,496	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Propane-1,2-diol	00057-55-6	M	---	B	N	---	N	2.1E-02	10	1.9E-02	111	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
1,2-Benzisothiazol-3(2H)-one	02634-33-5	NL	NA	B	N	---	N	2.1E-03	10	1.9E-03	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	NL	NA	B	N	---	N	2.1E-02	10	1.9E-02	111	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	NL	U	B	N	---	N	3.5E-02	10	3.2E-02	186	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Amines, tallow alkyl, ethoxylated	61791-26-2	NL	NA	B	N	---	N	2.1E-02	10	1.9E-02	111	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Sulfonic acid, petroleum, sodium salts	68608-26-4	NL	NA	B	N	---	N	2.1E-02	10	1.9E-02	305	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	NL	M	B	N	---	N	6.3E-01	10	5.7E-01	5,548	**Table 4, B-Rated; ERP < 1 lb/hr = Guideline Concentration**	**Yes**
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	NL	---	B	N	---	N	2.1E-02	10	1.9E-02	111	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Trade Secret	Trade Secret #8	NL	U	B	N	---	N	7.0E-02	10	6.3E-02	371	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
U-ROLL1 (EP 00026) - Reversing Mill													
PM_{10}	NY075-00-5	---	---	B	---	---	---	3.5E-01	0	3.5E-01	20,831	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	2.9E-01	0	2.9E-01	15,496	**Table 3, A-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Hexylene glycol	00107-41-5	L	---	C	N	---	N	8.7E-03	0	8.7E-03	59	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Aminoethanol	00141-43-5	M	---	B	N	---	N	8.0E-04	0	8.0E-04	195	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	NL	H	A	N	---	N	2.1E-02	0	2.1E-02	243	**Table 4, A-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	NL	M	B	N	---	N	1.5E-01	0	1.5E-01	1,000	**Table 4, B-Rated; ERP < 1 lb/hr = Guideline Concentration**	**Yes**
U-ROLL1 (EP 00025) - Z-Mill													
PM_{10}	NY075-00-5	---	---	B	---	---	---	1.1E+00	0	1.1E+00	20,831	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	1.1E+00	0	1.1E+00	15,496	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	8.3E-01	0	8.3E-01	910	**Table 4, B-Rated; ERP < 1 lb/hr = Guideline Concentration**	**Yes**
U-OVER1 (EP 00031) - Overhauler													
PM_{10}	NY075-00-5	---	---	B	---	---	---	8.0E+00	91	7.2E-01	20,831	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	7.3E+00	91	6.6E-01	15,496	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
Silver	07440-22-4	---	---	B	N	---	N	2.7E-05	91	2.4E-06	1.5E-02	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Tin	07440-31-5	---	---	B	N	---	N	6.0E-05	91	5.4E-06	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No

Table 1
Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Toxicity[a]	NYSDEC Assigned Toxicity[b]	Proposed Environmental Rating[c]	HTAC[d] (Y/N)	HTAC Mass Emission Limit[d] (lb/yr)	PB Trigger[e] (Y/N)	Pre-Control Hourly Emissions (lb/hr)	Control Efficiency (%)	Post-Control Hourly Emissions (lb/hr)	Facility-Wide Annual Actual Emissions (lb/yr)	Part 212 Requirement	Modeling Required[f] (Yes/No)
Copper	07440-50-8	M	---	B	N	---	N	4.1E+00	91	3.7E-01	2,250	**Table 4, B-Rated; ERP < 10 lb/hr = Guideline Concentration**	**Yes**
Phosphorus	07723-14-0	M	---	B	N	---	N	4.3E-06	91	3.8E-07	2.3E-03	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Tellurium	13494-80-9	---	---	B	N	---	N	6.7E-06	91	6.0E-07	3.6E-03	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	NL	M	B	N	---	N	2.8E+00	91	2.5E-01	5,548	**Table 4, B-Rated; ERP < 10 lb/hr = Guideline Concentration**	**Yes**
Proprietary emulsifier	Trade Secret #6	NL	NA	B	N	---	N	5.8E-02	91	5.2E-03	315	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
U-ANNE1 (EP 00362) - Bright Anneal Exit													
Diethylene glycol	00111-46-6	M	---	B	N	---	N	1.9E-05	0	1.9E-05	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	1.9E-05	0	1.9E-05	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral oil)	08042-47-5	NL	M	B	N	---	N	3.2E-04	0	3.2E-04	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	2.3E-04	0	2.3E-04	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	1.1E-02	0	1.1E-02	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	3.8E-04	0	3.8E-04	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	2.3E-04	0	2.3E-04	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00367) - Bright Anneal Entry													
Diethylene glycol	00111-46-6	M	---	B	N	---	N	2.1E-06	0	2.1E-06	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	2.1E-06	0	2.1E-06	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral oil)	08042-47-5	NL	M	B	N	---	N	3.6E-05	0	3.6E-05	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	2.5E-05	0	2.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	1.2E-03	0	1.2E-03	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	4.2E-05	0	4.2E-05	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	2.5E-05	0	2.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00369) - Lee Wilson Anneal													
Diethylene glycol	00111-46-6	M	---	B	N	---	N	1.1E-04	0	1.1E-04	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	8.9E-06	0	8.9E-06	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral oil)	08042-47-5	NL	M	B	N	---	N	1.4E-04	0	1.4E-04	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	1.1E-04	0	1.1E-04	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	5.2E-03	0	5.2E-03	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	1.8E-04	0	1.8E-04	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	8.9E-06	0	8.9E-06	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry													
Azole derivative	00111-46-6	M	---	B	N	---	N	2.1E-06	0	2.1E-06	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	2.1E-06	0	2.1E-06	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral	08042-47-5	NL	M	B	N	---	N	3.6E-05	0	3.6E-05	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Diethylene glycol	25322-68-3	NL	NA	B	N	---	N	2.5E-05	0	2.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solver	64742-56-9	NL	M	B	N	---	N	1.2E-03	0	1.2E-03	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	4.2E-05	0	4.2E-05	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	Trade Secret #7	NL	NA	B	N	---	N	2.5E-05	0	2.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit													
Azole derivative	00111-46-6	M	---	B	N	---	N	1.9E-05	0	1.9E-05	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	1.9E-05	0	1.9E-05	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral	08042-47-5	NL	M	B	N	---	N	3.2E-04	0	3.2E-04	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Diethylene glycol	25322-68-3	NL	NA	B	N	---	N	2.3E-04	0	2.3E-04	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solver	64742-56-9	NL	M	B	N	---	N	1.1E-02	0	1.1E-02	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	3.8E-04	0	3.8E-04	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	Trade Secret #7	NL	NA	B	N	---	N	2.3E-04	0	2.3E-04	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00027) - Strand Anneal													
Diethylene glycol	00111-46-6	M	---	B	N	---	N	1.2E-03	0	1.2E-03	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	1.6E-03	0	1.6E-03	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No

Table 1
Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Toxicity[a]	NYSDEC Assigned Toxicity[b]	Proposed Environmental Rating[c]	HTAC[d] (Y/N)	HTAC Mass Emission Limit[d] (lb/yr)	PB Trigger[e] (Y/N)	Pre-Control Hourly Emissions (lb/hr)	Control Efficiency (%)	Post-Control Hourly Emissions (lb/hr)	Facility-Wide Annual Actual Emissions (lb/yr)	Part 212 Requirement	Modeling Required[f] (Yes/No)
Petroleum distillates (mineral oil)	08042-47-5	NL	M	B	N	---	N	7.7E-05	0	7.7E-05	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	1.4E-03	0	1.4E-03	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	1.3E-02	0	1.3E-02	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	2.0E-03	0	2.0E-03	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	1.4E-03	0	1.4E-03	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
PM_{10}	NY075-00-5	---	---	B	---	---	---	1.0E-01	85	1.5E-02	20,831	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	1.0E-01	85	1.5E-02	15,496	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Diethylene glycol	00111-46-6	M	---	B	N	---	N	3.3E-05	85	5.0E-06	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Sodium metasilicate	06834-92-0	NL	NA	B	N	---	N	1.0E-02	85	1.5E-03	13	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Sodium phosphate, tribasic	10101-89-0	NL	M	B	N	---	N	4.0E-03	85	6.0E-04	5	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	4.0E-04	85	6.0E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	4.0E-04	85	6.0E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00440) - Ebner Anneal													
Diethylene glycol	00111-46-6	M	---	B	N	---	N	3.3E-06	0	3.3E-06	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
2-Butoxyethanol	00111-76-2	M	---	B	N	---	N	3.3E-06	0	3.3E-06	10	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Petroleum distillates (mineral oil)	08042-47-5	NL	M	B	N	---	N	4.8E-05	0	4.8E-05	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	3.9E-05	0	3.9E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	NL	M	B	N	---	N	1.9E-03	0	1.9E-03	910	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**
Petroleum distillates	Trade Secret #1	NL	M	B	N	---	N	6.6E-05	0	6.6E-05	15	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	3.9E-05	0	3.9E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-ANNE1 (EP 00028) - 1740 Heavy Gauge Cleaning													
PM_{10}	NY075-00-5	---	---	B	---	---	---	3.3E-01	25/85	1.7E-01	20,831	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	3.3E-01	25/85	1.7E-01	15,496	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Sulfuric acid	07664-93-9	M	---	B	N	---	N	1.9E-01	25	1.5E-01	1,276	**Table 4, B-Rated; ERP < 1 lb/hr = Guideline Concentration**	**Yes**
Diethylene glycol	00111-46-6	M	---	B	N	---	N	4.1E-05	85	6.2E-06	8	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Sodium metasilicate	06834-92-0	NL	NA	B	N	---	N	1.0E-02	85	1.5E-03	13	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Hydrogen peroxide	07722-84-1	---	---	B	N	---	N	3.7E-02	85	5.6E-03	18	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Sodium phosphate, tribasic	10101-89-0	NL	M	B	N	---	N	4.0E-03	85	6.0E-04	5	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Polyethylene glycol	25322-68-3	NL	NA	B	N	---	N	5.0E-04	85	7.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Azole derivative	Trade Secret #7	NL	NA	B	N	---	N	5.0E-04	85	7.5E-05	11	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-GALV1 (EP 00601) - Molten Metal Tank													
PM_{10}	NY075-00-5	---	---	B	---	---	---	2.1E+00	99	2.1E-02	20,831	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	2.1E+00	99	2.1E-02	15,496	**Table 3, B-Rated; ERP < 10 lb/hr = NAAQS**	**Yes**
Tin	07440-31-5	---	---	B	N	---	N	1.0E+00	99	1.0E-02	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Zinc	07440-66-6	L	---	C	N	---	N	1.0E+00	99	1.0E-02	2	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Zinc chloride	07646-85-7	M	---	B	N	---	N	1.5E-02	99	1.5E-04	2.8E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Ammonium chloride	12125-02-9	M	---	B	N	---	N	6.3E-03	99	6.3E-05	2.6E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-GALV1 (EP 00600) - Acid Tank													
PM_{10}	NY075-00-5	---	---	B	---	---	---	1.2E-01	85	1.8E-02	20,831	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
$PM_{2.5}$	NY075-02-5	---	---	B	---	---	---	1.2E-01	85	1.8E-02	15,496	**Table 3, B-Rated; ERP < 1 lb/hr = NAAQS**	**Yes**
Zinc chloride	07646-85-7	M	---	B	N	---	N	9.1E-03	85	1.4E-03	2.8E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Hydrogen chloride	07647-01-0	M	---	B	N	---	N	9.1E-02	85	1.4E-02	3	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Barium chloride	10361-37-2	NL	M	B	N	---	N	9.1E-03	85	1.4E-03	2.5E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
Ammonium chloride	12125-02-9	M	---	B	N	---	N	9.1E-03	85	1.4E-03	2.6E-01	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold.	No
U-SOLV1 - Parts Washer (Fugitive)													
Distillates, petroleum, hydrotreated light	64742-47-8	M	---	B	N	---	N	5.0E-02	0	5.0E-02	181	**Table 4, B-Rated; ERP < 0.1 lb/hr = Guideline Concentration**	**Yes**

Notes:
(a) Toxicity as provided in the NYSDEC AGC/SGC Tables included in DAR-1 (February 2021). Contaminants present in DAR-1, but with no toxicity listed, are represented by "---". Contaminants not listed in DAR-1 are represented by "NL".
(b) Toxicity as provided by Don Ward of the NYSDEC Air Toxics Section on 2/2/23. A code of "NA" indicates that no toxicity was assigned by NYSDEC. A code of "U" indicates that the toxicity is unknown.

Table 1
Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Toxicity[a]	NYSDEC Assigned Toxicity[b]	Proposed Environmental Rating[c]	HTAC[d] (Y/N)	HTAC Mass Emission Limit[d] (lb/yr)	PB Trigger[e] (Y/N)	Pre-Control Hourly Emissions (lb/hr)	Control Efficiency (%)	Post-Control Hourly Emissions (lb/hr)	Facility-Wide Annual Actual Emissions (lb/yr)	Part 212 Requirement	Modeling Required[f] (Yes/No)

(c) Proposed Environmental Ratings are based on the toxicity ratings given in DAR-1, or assigned by the NYSDEC Air Toxics Section. Contaminants without a toxicity rating were assigned a rating of "B".
(d) High Toxicity Air Contaminants (HTACs) and Mass Emission Limits listed in Table 2 of 6 NYCRR 212-2.2.
(e) Contaminants with a PB Trigger identified in Part 212-2.2 Table 2 are indicated here.
(f) No* indicates air dispersion modeling is not required to demonstrate compliance; however, modeling was performed to support the proposed Environmental Rating.
(g) The U-CAST1 emission points can be operated so that emissions are routed through the baghouse or bypass the baghouse. The bypass exhaust is emitted from the same emission point as the baghouse exhaust. Bypass operations are considered to be a trivial activity in accordance with 6 NYCRR 201-3.3(c)(33); therefore, bypass emissions were not included in the Part 212 analysis in accordance with 6 NYCRR 212-1.4(a).

(h) This pollutant is present in a biocide applied on some of the Rolling Mills and was included in the prior permit application as being potentially emitted from the Rolling Mills. Upon further investigation, the biocide is completely consumed by the bacteria within 24 hours of application and is not expected to be released to the atmosphere. As such, this biocide has been removed from the Emission Inventory tables. This pollutant has been left in the inventory to maintain the same Trade Secret identification methodology to avoid possible confusion.

Table 2
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[(b)] (lb/yr)	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	111	100	**YES**
Hexylene glycol	00107-41-5	N	N	59	100	NO
Diethylene glycol	00111-46-6	N	N	8.1	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-5	N	N	3.0E-02	100	NO
Alkanolamine	00141-43-5	N	N	195	100	**YES**
Barium oxide	01304-28-5	N	N	0.42	100	NO
Cadmium oxide	01306-19-0	**Y**	**Y**	7.8E-02	1	NO
Iron oxide	01309-37-1	N	N	1,049	100	**YES**
Magnesium oxide	01309-48-4	N	N	2.7	100	NO
Nickel oxide	01313-99-1	**Y**	N	0.24	10	NO
Zinc oxide	01314-13-2	N	N	9.7	100	NO
Lead oxide	01314-41-6	**Y**	**Y**	3.8	5	NO
Copper oxide	01317-38-0	N	N	3,528	100	**YES**
Chromium oxide	01333-82-0	**Y**	N	0.11	250	NO
Aluminum oxide	01344-28-1	N	N	32	100	NO
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	11	100	NO
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	243	100	**YES**
Sodium metasilicate	06834-92-0	N	N	13	100	NO
Silver	07440-22-4	N	N	1.5E-02	100	NO
Tin	07440-31-5	N	N	1.9	100	NO
Copper	07440-50-8	N	N	2,250	100	**YES**
Zinc	07440-66-6	N	N	1.9	100	NO
Zinc chloride	07646-85-7	N	N	0.28	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Sulfuric acid	07664-93-9	N	N	1,276	100	**YES**
Hydrogen peroxide	07722-84-1	N	N	18	100	NO
Phosphorus	07723-14-0	N	N	2.3E-03	100	NO
Graphite	07782-42-5	N	N	4,620	100	**YES**
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.4	100	NO
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	111	100	**YES**
Nonylphenol, ethoxylated	09016-45-9	N	N	193	100	**YES**
Sodium phosphate, tribasic	10101-89-0	N	N	5.3	100	NO
Barium chloride	10361-37-2	N	N	0.25	100	NO
Ammonium chloride	12125-02-9	N	N	0.26	100	NO
Tellurium	13494-80-9	N	N	3.6E-03	100	NO
Silver oxide	20667-12-3	N	N	0.11	100	NO
Mercury oxide	21908-53-2	**Y**	**Y**	1.0E-03	5	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.15	0.1	NO[(c)]
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	N	N	186	100	**YES**
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	111	100	**YES**
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	**YES**
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	1,000	100	**YES**
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.79	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	910	100	**YES**
Sulfonic acids, petroleum, sodium salts	68608-26-4	N	N	305	100	**YES**
Petroleum distillates	Trade Secret #1	N	N	15	100	NO
Base oil	Trade Secret #3	N	N	193	100	**YES**
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	5,548	100	**YES**
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	N	N	111	100	**YES**
Proprietary emulsifier	Trade Secret #6	N	N	315	100	**YES**
Azole derivative	Trade Secret #7	N	N	11	100	NO
Trade Secret	Trade Secret #8	N	N	371	100	**YES**

Table 2
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.
(c) The NYSDEC Air Toxics Section has reviewed this chemical and indicated that little or no toxicological information was found for it. It was NYSDEC's recommendation that, as this contaminant is approximately equal to the second most stringent MEL that is acceptable for use of 0.1 lb/yr, modeling is not required due to the lack of evidence of this contaminant being considered to be highly toxic.

Table 3
Part 212 Grain Standard Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	Post-Control Emission Rate (lb/hr)	Exhaust Flow Rate[(a)] (ft^3/min)	Exhaust Concentration[(b)] (gr/ft^3)	Grain Standard[(c)] (gr/ft^3)	Percent of Grain Standard (%)
U-CAST1 (EP00039) - To Baghouse[(d)]					
Total Particulate Matter	---	---	7.10E-04	0.15	0%
U-CAST1 (EP00040) - To Baghouse[(d)]					
Total Particulate Matter	---	---	6.00E-03	0.05	12%
U-CAST1 (EP00602) - Central Vacuum					
Total Particulate Matter	3.6E-02	1,400	3.00E-03	0.05	6%
U-ROLL1 (EP00036) - Bliss Mill					
Total Particulate Matter	5.0E-03	620	9.41E-04	0.15	1%
U-ROLL1 (EP00030) - Hot Mill					
Total Particulate Matter	0.27	20,000	1.58E-03	0.15	1%
U-ROLL1 (EP00029) - First Run Down Mill					
Total Particulate Matter	---	---	5.20E-04	0.15	0%
U-ROLL1 (EP00026) - Reversing Mill					
Total Particulate Matter	---	---	8.20E-04	0.15	1%
U-ROLL1 (EP00025) - Z-Mill					
Total Particulate Matter	1.1	30,600	4.23E-03	0.15	3%
U-OVER1 (EP00031) - Overhauler					
Total Particulate Matter	---	---	5.00E-03	0.15	3%
U-ANNE1 (EP00027) - Strand Anneal					
Total Particulate Matter	0.02	24,000	7.30E-05	0.15	0%
1740 Heavy Gauge Cleaning (EP 00028)					
Total Particulate Matter	0.2	7,000	2.77E-03	0.05	6%

Table 3
Part 212 Grain Standard Evaluation
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	Post-Control Emission Rate (lb/hr)	Exhaust Flow Rate[(a)] (ft^3/min)	Exhaust Concentration[(b)] (gr/ft^3)	Grain Standard[(c)] (gr/ft^3)	Percent of Grain Standard (%)
U-GALV1 (EP 00600) - Acid Tank					
Total Particulate Matter	0.02	14,000	1.48E-04	0.05	0%
U-GALV1 (EP 00601) - Molten Metal Tank					
Total Particulate Matter	0.02	10,000	2.44E-04	0.05	0%

Notes:
(a) Exhaust flow rates provided by Revere.
(b) Exhaust Concentration (gr/ft^3) = Post-Control Emission Rate (lb/hr) ÷ 60 (min/hr) ÷ Exhaust Flow Rate (ft^3/min) x 7,000 (gr/lb).
For Emission Points 00039, 00040, 00029, 00026, and 00031 the Exhaust Concentration is the filterable particulate matter concentration measured during the May 2023 stack testing for these sources. For Emission Point 00040, the measured concentration was doubled since only one furnace was operating during the testing.
(c) Grain standard as provided in 6 NYCRR 212-2.4(a)(1) for processes installed prior to July 1, 1973 and 212-2.4(b)(1) for processes installed after July 1, 1973. Note that U-CAST1, EP 00040, was formerly subject to the 212-2.4(a)(1) grain standard but, with the replacement of the furnace in this modification, becomes subject to the 212-2.4(b)(1) standard.
(d) The U-CAST1 emission points can be operated so that emissions are routed through the baghouse or bypass the baghouse. The bypass exhaust is emitted from the same emission point as the baghouse exhaust. Bypass operations are considered to be a trivial activity in accordance with 6 NYCRR 201-3.3(c)(33); therefore, bypass emissions were not included in the grain standard analysis in accordance with 6 NYCRR 212-1.4(a).

ATTACHMENT E
AIR DISPERSION MODELING REPORT

RAMBOLL

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REVERE COPPER PRODUCTS, INC.
MODELING REPORT – PERMIT APPLICATION

Project name	**Revere Copper Products, Inc. – Air State Facility Permit Renewal**
Project no.	**1087689\1940103004**
Recipient	**NYSDEC – Impact Assessment and Meteorology Group**
Document type	**Modeling Report**
Version	**2**
Date	**July 20, 2023**
Prepared by	**Steven Miraglia**
Checked by	**Cris Hine**
Approved by	**Matthew Traister, P.E.**

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1. Project Discussion

Revere Copper Products, Inc. (Revere) is renewing and modifying the Air State Facility (ASF) Permit (ID 6-3013-00091/00039) for its manufacturing facility located at 1 Revere Park in Rome, New York. A site location map is provided in **Figure 1**.

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Revere has removed casting furnace 2057 (Emission Unit U-CAST1, Emission Source 01257) and began the installation of a similar induction furnace (Emission Source 02728) that will provide an estimated 23.3% increase in output casting. The new furnace will vent to an existing cyclone and baghouse (00C40/00B40) and Emission Point (EP) 00040. Increases in emissions resulting from the furnace replacement project have been estimated, including emissions from the increased furnace capacity as well as emissions from downstream operations that will potentially increase as a result of increased furnace throughput.

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1.2 Differences Between the Updated Renewal Application and the February 8, 2023 Renewal Application

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  For each of the above emission sources, samples were collected by Alliance Technical Group, LLC (Alliance) on May 30 through June 2, 2023 to establish updated emission rates for total filterable particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and condensable PM. In addition, a sample collected from the overhauler exhaust was analyzed for copper. A summary of the stack test results is provided in **Exhibit 2**. The updated emission and exhaust flow rates have been incorporated into the emission calculations, Part 212 evaluation, and air dispersion modeling.

- Based on the updated emission rates, the estimated facility-wide potential emissions of total PM, PM_{10}, and $PM_{2.5}$ are below 100 tons per year (tpy) each. Revere is requesting that the facility emission caps for these contaminants be removed from the permit.

- Testing was not able to be performed on the Central Vacuum System (U-CAST1, EP 00602, Source CSVAC, Cyclone CSC01, and Baghouse CSB01) during the May 2023 test program. Revere previously assumed the PM concentration in the Central Vacuum System exhaust was equivalent to the grain standard, *i.e.*, 0.05 grains per dry standard cubic foot (gr/dscf), which is overly conservative given the air pollution control devices in use *(i.e.,* cyclone and baghouse). For our calculations, we have assumed that the performance of the vacuum exhaust cyclone and filter housing system would perform similarly to the exhaust of the cyclone and filter housing operating on the cast furnace exhausts. To be conservative, we used the higher of two available cast furnace exhaust outlet concentrations from the May 2023 test program and applied it to the vacuum system exhaust. The performance of the vacuum cyclone and filter housing is reasonably expected to be similar since the design features of the two systems are also similar.

- NYSDEC provided updated meteorological data on July 3, 2023 and these data have been used in the updated modeling. This is discussed further in Section 8 of this report.

- Revere has clarified the EPs associated with the 464 Tray Style Coil Annealing Furnace (U-ANNE1, Source 00464) and 1154 Annealing Furnace (U-ANNE1, Source 01154). In each of these processes, a natural gas-fired DX boiler provides DX gas consisting of natural gas combustion byproducts and heat to the annealing furnace; the DX gas becomes the atmosphere in the furnace during the annealing process. A separate small natural gas-fired combustion unit provides heat to the furnace during the annealing process. Copper from a rolling mill moves through the annealing furnace. Both the furnace entrance and exit have a chamber that captures fugitive emissions and vents them to the outside. There also is an emergency relief vent that engages if the DX gas pressure builds up in the annealing chamber; this rarely occurs.

  Each of these annealing furnaces has four EPs: one exempt EP for venting combustion gases from a small, exempt tube furnace that provides heat to the furnace; one EP for the furnace entry chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when entering the annealing furnace; one EP for the furnace exit chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when exiting the annealing furnace; and the exempt emergency relief vent. The DX furnace vent is directed to the annealing chamber and does not directly vent outside. The entrance and exit chamber EPs are understood to be the EPs venting process emissions from these operations. Therefore, the following process EPs for these two annealing furnaces should be included:

  - Emission Source 00464 – Tray Style/Coil Anneal: EPs 00189 (entrance chamber exhaust) and 00190 (exit chamber exhaust); both of these EPs are in the current ASF Permit as well as the renewal application.
  - Emission Source 01154 – 1154 Annealing Furnace: EPs 00367 (entry chamber exhaust) and 00362 (exit chamber exhaust). EP 00367 is in the current ASF Permit but EP 00362 is a new EP.

  These stacks and their parameters have been added to the revised ASF Permit application and used in the updated modeling.

- Emissions from the combustion of natural gas by the DX boilers were double counted in the February 8, 2008 renewal application with the DX combustion gas that becomes the annealing furnace atmosphere. This double counting has been corrected.

- The coolants and additives used in the rolling mills (U-ROLL1) were updated based on additional bath composition information provided by Revere. In addition, Revere rolling mill process engineers have indicated the bacteria completely consume Kathon 886, an antimicrobial agent added to the 1723 Reversing Mill (U-ROLL1, EP 00026, Source 01723) and 1176 Bliss Mill (U-ROLL1, EP 00036, Source 01723) within 24 to 48 hours of its addition to the recirculating cooling water bath. As a result, emissions associated with constituents in Kathon 886 have been removed from the updated emission inventory.

  When excessive biological growth (bacteria) is present in the water-soluble coolant systems, the pH of the solution is lowered from the acidic excretions of the bacteria. This biological growth is controlled by additions of antimicrobial agents to the coolant systems. Revere currently uses two different antimicrobials to stop the biological growth in the coolant systems: Grotan and Kathon. The Kathon additive is used as an initial dose at the start of a new coolant change. While the system residual of the Kathon additive is not testable, it is known to be consumed based on the rapid increase in pH (less excretion from bacteria). Revere relies on the biological results reported by the in-house laboratory to gauge the need for additional antimicrobials.

- The distance to property line has been added for non-exempt emission points in **Tables 2 and 3** of this report.

- The Part 212 air toxics evaluation presented in **Attachment D** of the permit application, as well as **Table 1** of this report, has been updated to incorporate the changes in emission rates, cooling water composition, and stack flow rates discussed above. Note that emission rates of constituents associated with particulate emissions, such as those from the casting and rolling mills, have been updated based on the May 2023 source testing results.

  As discussed in **Attachment D**, there are three constituents with predicted impacts that exceed the conservative interim annual guideline concentrations (AGCs) provided by the Air Toxics Section. Actual annual emissions are estimated to be 668 pounds for the three constituents combined. These exceedances are discussed in more detail in Section 11 of this modeling report, and in the T-BACT analysis in **Attachment F** of the permit application.

  Two additional constituents, copper and 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, initially had modeled impacts that exceeded their respective AGCs. Copper has been identified as a constituent potentially emitted from the Overhauler. 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol has been identified as a constituent potentially emitted from three rolling mills: Bliss Mill, Hot Mill, and Reversing Mill.

  Revere is proposing annual operating hour limits that will reduce the modeled impacts of these two constituents to 95% of their respective AGCs. Based on emission rates from the May 2023 testing and the resulting predicted impacts, the proposed operating hour limits would be 6,658 hours per year for the Overhauler and 7,858 hours per year for the Reversing Mill. However, we are proposing that the actual limits be based on the most recent Department-approved post-control hourly emission rates and resulting modeled impacts that are 95% of their respective AGCs.

  These caps and their effect on the air dispersion modeling are discussed in more detail later in this report.

2. Site Location and Description

The facility is located at 1 Revere Park in Rome, NY within Oneida County. A site location map is provided in **Figure 1**. The site is bounded by mixed residential and commercial development to the north, east, and south and by a public park and a permanently closed elementary school to the west.

The primary manufacturing operations at the Revere facility consist of induction furnaces used for copper casting operations, annealing units, rolling mills, and a copper galvanizing line. Emissions from these processes, except for the galvanizing line, require air dispersion modeling to demonstrate compliance with Part 212.

3. Stack Parameters and Buildings

Stack parameters for the EPs included in the refined modeling analysis are provided in **Table 2** (English Units) and **Table 3** (Metric Units). A site layout map showing the building locations and the facility fenceline is provided in **Figure 2**. Figures identifying the stack locations and building heights of the buildings at the site are provided in **Figure 3** through **Figure 9**.

4. Emission Rates

An air toxics evaluation was performed in accordance with NYSDEC's DAR-1 *Guidelines for the Evaluation and Control of Contaminants Under 6 NYCRR Part 212*, dated February 12, 2021. A summary of the Part 212 evaluation is provided in **Table 1**. This table provides a list of process emissions at the facility (excluding combustion units and exempt/trivial activities) and identifies emissions that require modeling. A more detailed Part 212 evaluation is provided in **Attachment D** of the ASF Permit application.

A summary of the emission rates used in the modeling analysis is provided in **Tables 4 to 6**. Emission rates were calculated based on historical emission factors and stack testing results. **Table 4** includes the PM emission rates, **Table 5** includes the 1-hour emission rates for the air toxics that were modeled, and **Table 6** includes the annual emission rates for the modeled air toxics. The PM emission rates and 1-hour toxics emission rates were modeled using post-control hourly emission rates. The annual toxics emission rates also were modeled using post-control hourly emission rates; however, for toxics emitted from the Reversing Mill and Overhauler, the emission rates were lowered to factor in the proposed annual operating hour caps on these two sources as discussed in Section 1.2. Hourly emission rates for those sources were multiplied by the capped operating hours and then divided by 8,760 hours to calculate annualized emission rates that are representative of the reduced hours of operation.

5. PM_{10} and $PM_{2.5}$ Modeling

PM_{10} and $PM_{2.5}$ emissions from the process emission sources, DX gas combustion sources (which are specifically permitted under Process DXG), the natural gas-fired Walking Beam Furnace, and the main natural gas-fired boilers were modeled. Note that particulate emissions from exempt combustion units and emergency generators were not included in the modeling. There are thirty-six natural gas combustion sources with maximum heat input ratings of 1 million British thermal units per hour (MMBtu/hr) or less, nine with maximum heat input ratings between 1 MMBtu/hr and 4.2 MMBtu/hr, and one with a maximum heat input rating of 9.7 MMBtu/hr. Based on the maximum heat input ratings, the exempt units are estimated to have the potential to use 18% of the total natural gas, the DX gas units account for 3%, the Walking Beam Furnace accounts for 21%, and the main boilers account for the remaining 58%. Based on these conditions and the fact that the exempt units are spread out across the facility, these sources we not included in the modeling. The emergency generators were excluded as they only operate during emergencies and readiness testing and are considered to be intermittent sources, which are excluded from NAAQS modeling in accordance with USEPA guidance. Background concentrations of PM_{10} and $PM_{2.5}$ were added to the results of the modeling and compared to their respective NAAQS.

Background $PM_{2.5}$ was based on the 3-year average values monitored at the Utica, New York station for years 2020-2022. The Utica station was chosen because it is the closest monitoring station and is likely to be representative of the area. Background 24-hour PM_{10} was based on the 2nd maximum 24-hour concentration provided by the Rochester, New York station for calendar year 2022. The Rochester station was chosen because it is the closest monitoring station and is likely to be representative of the area. Note that 2020-2022 are the most recent years of available data for this station.

6. Urban / Rural Classification

In accordance with Section 2.3 of NYSDEC's DAR-10 air dispersion modeling guidance document: "Only facilities located in the New York City metro area may have sufficiently high population density and urban heat island effects to justify the use of urban dispersion coefficients." The site is not located in the New York City metro area; therefore, rural dispersion coefficients were used in the analysis.

7. Good Engineering Practice Stack Height Analysis

USEPA provides specific guidance for calculating Good Engineering Practice (GEP) stack height and for evaluating whether building downwash will occur (USEPA, 2003). GEP stack height is defined by USEPA as the height of the structure plus 1.5 times the lesser of the structure height or projected width. If the stack height for a source is less than the height identified using GEP guidelines, based on the dimensions of nearby buildings, then the potential for building downwash to occur exists and is to be considered in the modeling analysis.

The stacks to be modeled in this analysis are less than GEP stack height. Therefore, 36 directional building heights and widths data were estimated using the USEPA Building Profile Input Program, PRIME version 04274 (BPIP-PRIME) and incorporated into the AERMOD model.

8. Meteorological Data

The closest National Weather Service (NWS) station to the facility that has the appropriate available data for AERMOD is located in Rome, New York. The Rome NWS station is located approximately 3 kilometers to the Northeast of the facility. Therefore, the Rome, New York NWS station was utilized for the surface data for this analysis. Upper-air data from Albany, New York was also used. NYSDEC provided the necessary pre-processed data for use in the analysis. Data for years 2018-2022 were used.

9. Receptor Locations

In accordance with Section 2.4 of DAR-10[1], the modeling analysis utilized a set of nested Cartesian grids of receptors with a spacing of 70, 100, 250, and 500 meters extending to a distance of 1, 2, 5, and 10 kilometers, respectively, from the facility. The facility has restricted access with a fence and outer building walls that encloses the majority of the property, with the exception of the eastern parking lot; therefore, fence line receptors were included at a spacing of 25 meters. On-site receptors inside the fence line were excluded. Maximum impacts occurred within the 70-meter grid; therefore, no additional grids were added to the model.

Discrete receptors were added to sensitive locations including schools, hospitals, nursing homes, and daycares located within a 10-kilometer radius from the facility. **Figure 10** provides a map showing the locations of the sensitive receptors included in the modeling and **Table 7** provides the name and coordinates of each receptor.

[1] NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis, Issued Date September 1, 2020.

Additional receptor grids were added to the Environmental Justice areas within a 10-kilometer radius from the facility and are identified in **Figure 11**. A receptor grid at 50-meter spacing was added to each area, in addition to the nested Cartesian grids. Note that 50-meter spacing in addition to the regular nested Cartesian grids resulted in an overabundance of receptors, but in absence of NYSDEC recommended spacing for Environmental Justice areas, this 50-meter spacing was used.

Disadvantaged Communities within a 10-kilometer radius from the facility were also identified and are included in **Figure 12**. No receptors were added to these areas as the above receptor grids provide adequate characterization of the impacts surrounding the facility.

The current version of AERMAP was used to calculate the receptor elevations and appropriate hill height values. Ten-meter resolution National Elevation Dataset (NED) data were used in the analysis.

10. Lakes Environmental Software – Multi-Chem Use

As shown in **Table 1**, more than 20 contaminants were required to be included in the air toxics modeling. Due to the large number of contaminants, the multi-chemical (multi-chem) utility of the AERMOD View program by Lakes Environmental Software™ was used as an initial screening level model for the air toxics. The purpose of the utility is to streamline the modeling of multiple contaminants by avoiding having to set up separate project files for each contaminant in the analysis.

For each emission source in the analysis, multi-chem creates an AERMOD input file using a normalized emission rate of 1.0 gram per second. The input files are run with AERMOD and produce post files containing the normalized predicted concentrations for each averaging period at each receptor. For example, if the model is run for the 1-hour averaging period, then the post file will contain the normalized 1-hour predicted concentrations for each hour in the meteorological dataset at each receptor. Next, multi-chem takes the source-specific contaminant emission rates, multiplies by the normalized predicted concentrations in the respective post files, and cumulatively adds the values paired in time and location. The results of the calculations are summarized in contaminant-specific plot files. At the bottom of the plot files is a summary of the source IDs and emission rates used to generate the plot files.

Initial results using the multi-chem utility were provided to NYSDEC in advance of the final modeling report to afford NYSDEC the opportunity to identify any toxics that should be modeled outside of the multi-chem utility. NYSDEC provided the following list of constituents to be run outside of the multi-chem utility:

- Toxics here [CAS #]

11. Modeling Results

The results of the PM_{10} and $PM_{2.5}$ NAAQS modeling analysis are provided in **Table 8** and the results of the air toxics modeling are provided in **Table 9**.

The results of the NAAQS modeling indicate that the maximum predicted impacts of $PM_{2.5}$ are below both the 24-hour and the annual standards and that the maximum predicted impacts of PM_{10} are below the annual standards.

The results of the air toxics modeling indicate that the maximum predicted concentrations of three of the modeled air contaminants exceed the AGC values provided by the NYSDEC Air Toxics Section (ATS). None of the modeled air contaminants exceed the Short-term Guideline Concentration (SGC) values in the NYSDEC DAR-1 AGC/SGC tables.

Additionally, Revere is proposing to cap the annual operating hours from two sources so that maximum predicted impacts of two other contaminants (copper and 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol) are below their AGC values. Copper is only estimated to be emitted from the Overhauler, and 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol is estimated to be emitted from the Reversing Mill, Bliss Mill, and Hot Mill.

Revere is proposing annual operating hour limits that will reduce the modeled impacts of these two constituents to 95% of their respective AGCs. Based on emission rates from the May 2023 testing and the resulting predicted impacts, the proposed operating hour limits would be 6,658 hours per year for the Overhauler and 7,858 hours per year for the Reversing Mill. However, we are proposing that the actual limits be based on the most recent Department-approved post-control hourly emission rates and resulting modeled impacts that are 95% of their respective AGCs.

Three contaminants that exceed their respective AGCs are as follows:

- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS# 57635-48-0)
- Fatty acids, C18-unsaturated phosphates (CAS# Trade Secret #5)
- Trade Secret (CAS# Trade Secret #8)

These contaminants are emitted from the First Run Down Mill. None of these contaminants are listed in NYSDEC's DAR-1 AGC/SGC tables; therefore, the ATS provided interim AGC values based on toxicological reviews. The information regarding the toxicities of these contaminants that the ATS was able to find was extremely limited, which resulted in NYSDEC assigning very conservative interim AGC values to these contaminants.

A Toxic – Best Achievable Control Technology (T-BACT) analysis has been included in Attachment F of the air permit application. In this analysis, it is presented that the following factors impact the assessment of T-BACT for the First Run Down Mill:

- Revere has instituted effective process controls to the extent practical
- Revere has conducted initial evaluations of coolant alternatives, and each has challenges that would need to be vetted with further evaluation before they could be trialed at the facility
- The First Run Down Mill is equipped with a mist eliminator to minimize emissions
- The three target constituents have low volatility and, therefore, estimated emissions may be overly conservative (on the high side)
- There is a lack of specific sampling and analytical methods for the target constituents
- The interim AGCs assigned by NYSDEC have built-in safety factors of 10x and 100x due to a lack of available toxicological information and, thus, are overly conservative
- Predicted impacts of the three target constituents are less than NYSDEC's published *de mimimis* AGC of 0.1 micrograms per cubic meter ($\mu g/m^3$)
- It is doubtful that an air pollution control manufacturer will provide a removal efficiency guarantee for the target compounds given the lack of information on these chemicals and the inability to quantify their physical state (e.g., aerosol, solid) or their present concentration/mass

- The estimated cost of removing approximately 665 combined pounds per year of the three target contaminants (540 pounds for the Commissioning Plan operating scenario) is $1.3 to $1.8 million per ton of contaminant removed.

For these reasons, this evaluation concludes that the 1721 First Run Down Mill has T-BACT for emissions of the three specified contaminants, since no other alternatives could be demonstrated as feasible. Considered alternatives were either not technically feasible or not economically feasible.

Electronic copies of the AERMOD input and output files for PM_{10}, $PM_{2.5}$, and the air toxics that were run outside of multi-chem, contaminant-specific plot files for the contaminants run within multi-chem, BPIP input and output files, AERMAP input and output files, and meteorological data files were submitted to the NYSDEC File Transfer Service (FTS) site.

ENVIRONMENT
& HEALTH

REVERE COPPER PRODUCTS, INC.
MODELING REPORT – PERMIT APPLICATION

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Date	**July 21, 2023**
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  For each of the above emission sources, samples were collected by Alliance Technical Group, LLC (Alliance) on May 30 through June 2, 2023 to establish updated emission rates for total filterable particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and condensable PM. In addition, a sample collected from the overhauler exhaust was analyzed for copper. A summary of the stack test results is provided in **Exhibit 2**. The updated emission and exhaust flow rates have been incorporated into the emission calculations, Part 212 evaluation, and air dispersion modeling.

- Based on the updated emission rates, the estimated facility-wide potential emissions of total PM, PM_{10}, and $PM_{2.5}$ are below 100 tons per year (tpy) each. Revere is requesting that the facility emission caps for these contaminants be removed from the permit.

- Testing was not able to be performed on the Central Vacuum System (U-CAST1, EP 00602, Source CSVAC, Cyclone CSC01, and Baghouse CSB01) during the May 2023 test program. Revere previously assumed the PM concentration in the Central Vacuum System exhaust was equivalent to the grain standard, *i.e.*, 0.05 grains per dry standard cubic foot (gr/dscf), which is overly conservative given the air pollution control devices in use *(i.e.,* cyclone and baghouse). For our calculations, we have assumed that the performance of the vacuum exhaust cyclone and filter housing system would perform similarly to the exhaust of the cyclone and filter housing operating on the cast furnace exhausts. To be conservative, we used the higher of two available cast furnace exhaust outlet concentrations from the May 2023 test program and applied it to the vacuum system exhaust. The performance of the vacuum cyclone and filter housing is reasonably expected to be similar since the design features of the two systems are also similar.

- NYSDEC provided updated meteorological data on July 3, 2023 and these data have been used in the updated modeling. This is discussed further in Section 8 of this report.

- Revere has clarified the EPs associated with the 464 Tray Style Coil Annealing Furnace (U-ANNE1, Source 00464) and 1154 Annealing Furnace (U-ANNE1, Source 01154). In each of these processes, a natural gas-fired DX boiler provides DX gas consisting of natural gas combustion byproducts and heat to the annealing furnace; the DX gas becomes the atmosphere in the furnace during the annealing process. A separate small natural gas-fired combustion unit provides heat to the furnace during the annealing process. Copper from a rolling mill moves through the annealing furnace. Both the furnace entrance and exit have a chamber that captures fugitive emissions and vents them to the outside. There also is an emergency relief vent that engages if the DX gas pressure builds up in the annealing chamber; this rarely occurs.

  Each of these annealing furnaces has four EPs: one exempt EP for venting combustion gases from a small, exempt tube furnace that provides heat to the furnace; one EP for the furnace entry chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when entering the annealing furnace; one EP for the furnace exit chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when exiting the annealing furnace; and the exempt emergency relief vent. The DX furnace vent is directed to the annealing chamber and does not directly vent outside. The entrance and exit chamber EPs are understood to be the EPs venting process emissions from these operations. Therefore, the following process EPs for these two annealing furnaces should be included:

  - Emission Source 00464 – Tray Style/Coil Anneal: EPs 00189 (entrance chamber exhaust) and 00190 (exit chamber exhaust); both of these EPs are in the current ASF Permit as well as the renewal application.
  - Emission Source 01154 – 1154 Annealing Furnace: EPs 00367 (entry chamber exhaust) and 00362 (exit chamber exhaust). EP 00367 is in the current ASF Permit but EP 00362 is a new EP.

  These stacks and their parameters have been added to the revised ASF Permit application and used in the updated modeling.

- Emissions from the combustion of natural gas by the DX boilers were double counted in the February 8, 2008 renewal application with the DX combustion gas that becomes the annealing furnace atmosphere. This double counting has been corrected.

- The coolants and additives used in the rolling mills (U-ROLL1) were updated based on additional bath composition information provided by Revere. In addition, Revere rolling mill process engineers have indicated the bacteria completely consume Kathon 886, an antimicrobial agent added to the 1723 Reversing Mill (U-ROLL1, EP 00026, Source 01723) and 1176 Bliss Mill (U-ROLL1, EP 00036, Source 01723) within 24 to 48 hours of its addition to the recirculating cooling water bath. As a result, emissions associated with constituents in Kathon 886 have been removed from the updated emission inventory.

  When excessive biological growth (bacteria) is present in the water-soluble coolant systems, the pH of the solution is lowered from the acidic excretions of the bacteria. This biological growth is controlled by additions of antimicrobial agents to the coolant systems. Revere currently uses two different antimicrobials to stop the biological growth in the coolant systems: Grotan and Kathon. The Kathon additive is used as an initial dose at the start of a new coolant change. While the system residual of the Kathon additive is not testable, it is known to be consumed based on the rapid increase in pH (less excretion from bacteria). Revere relies on the biological results reported by the in-house laboratory to gauge the need for additional antimicrobials.

- The distance to property line has been added for non-exempt emission points in **Tables 2 and 3** of this report.

- The Part 212 air toxics evaluation presented in **Attachment D** of the permit application, as well as **Table 1** of this report, has been updated to incorporate the changes in emission rates, cooling water composition, and stack flow rates discussed above. Note that emission rates of constituents associated with particulate emissions, such as those from the casting and rolling mills, have been updated based on the May 2023 source testing results.

  As discussed in **Attachment D**, there are three constituents with predicted impacts that exceed the conservative interim annual guideline concentrations (AGCs) provided by the Air Toxics Section. Actual annual emissions are estimated to be 668 pounds for the three constituents combined. These exceedances are discussed in more detail in Section 11 of this modeling report, and in the T-BACT analysis in **Attachment F** of the permit application.

  Two additional constituents, copper and 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, initially had modeled impacts that exceeded their respective AGCs. Copper has been identified as a constituent potentially emitted from the Overhauler. 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol has been identified as a constituent potentially emitted from three rolling mills: Bliss Mill, Hot Mill, and Reversing Mill.

  Revere is proposing annual operating hour limits that will reduce the modeled impacts of these two constituents to 95% of their respective AGCs. Based on emission rates from the May 2023 testing and the resulting predicted impacts, the proposed operating hour limits would be 6,658 hours per year for the Overhauler and 7,858 hours per year for the Reversing Mill. However, we are proposing that the actual limits be based on the most recent Department-approved post-control hourly emission rates and resulting modeled impacts that are 95% of their respective AGCs.

  In accordance with communication from NYSDEC received on July 20, 2023, emissions of copper and copper oxide must be modeled together for comparison to the copper guideline concentrations. This was incorporated into the modeling. Revere is continuing to propose an operating hour cap on the Overhauler to achieve 95% of the AGC of copper from copper emissions alone. In addition, Revere is also proposing to restrict public access to the area of their parking lot where the copper and copper oxide combined impacts are at their highest concentrations.

  These caps and their effect on the air dispersion modeling are discussed in more detail later in this report.

2. Site Location and Description

The facility is located at 1 Revere Park in Rome, NY within Oneida County. A site location map is provided in **Figure 1**. The site is bounded by mixed residential and commercial development to the north, east, and south and by a public park and a permanently closed elementary school to the west.

The primary manufacturing operations at the Revere facility consist of induction furnaces used for copper casting operations, annealing units, rolling mills, and a copper galvanizing line. Emissions from these processes, except for the galvanizing line, require air dispersion modeling to demonstrate compliance with Part 212.

3. Stack Parameters and Buildings

Stack parameters for the EPs included in the refined modeling analysis are provided in **Table 2** (English Units) and **Table 3** (Metric Units). A site layout map showing the building locations and the facility fence line is provided in **Figure 2**. Figures identifying the stack locations and building heights of the buildings at the site are provided in **Figure 3** through **Figure 9**.

4. Emission Rates

An air toxics evaluation was performed in accordance with NYSDEC's DAR-1 *Guidelines for the Evaluation and Control of Contaminants Under 6 NYCRR Part 212*, dated February 12, 2021. A summary of the Part 212 evaluation is provided in **Table 1**. This table provides a list of process emissions at the facility (excluding combustion units and exempt/trivial activities) and identifies emissions that require modeling. A more detailed Part 212 evaluation is provided in **Attachment D** of the ASF Permit application.

A summary of the emission rates used in the modeling analysis is provided in **Tables 4 to 6**. Emission rates were calculated based on historical emission factors and stack testing results. **Table 4** includes the PM emission rates, **Table 5** includes the 1-hour emission rates for the air toxics that were modeled, and **Table 6** includes the annual emission rates for the modeled air toxics. The PM emission rates and 1-hour toxics emission rates were modeled using post-control hourly emission rates. The annual toxics emission rates also were modeled using post-control hourly emission rates; however, for toxics emitted from the Reversing Mill and Overhauler, the emission rates were lowered to factor in the proposed annual operating hour caps on these two sources as discussed in Section 1.2. Hourly emission rates for those sources were multiplied by the capped operating hours and then divided by 8,760 hours to calculate annualized emission rates that are representative of the reduced hours of operation.

5. PM_{10} and $PM_{2.5}$ Modeling

PM_{10} and $PM_{2.5}$ emissions from the process emission sources, DX gas combustion sources (which are specifically permitted under Process DXG), the natural gas-fired Walking Beam Furnace, and the main natural gas-fired boilers were modeled. Note that particulate emissions from exempt combustion units and emergency generators were not included in the modeling. There are thirty-six natural gas combustion sources with maximum heat input ratings of 1 million British thermal units per hour (MMBtu/hr) or less, nine with maximum heat input ratings between 1 MMBtu/hr and 4.2 MMBtu/hr, and one with a maximum heat input rating of 9.7 MMBtu/hr. Based on the maximum heat input ratings, the exempt units are estimated to have the potential to use 18% of the total natural gas, the DX gas units account for 3%, the Walking Beam Furnace accounts for 21%, and the main boilers account for the remaining 58%. Based on these conditions and the fact that the exempt units are spread out across the facility, these sources we not included in the modeling. The emergency generators were excluded as they only operate during emergencies and readiness testing and are considered to be intermittent sources, which are excluded from NAAQS modeling in accordance with USEPA guidance. Background concentrations of PM_{10} and $PM_{2.5}$ were added to the results of the modeling and compared to their respective NAAQS.

Background $PM_{2.5}$ was based on the 3-year average values monitored at the Utica, New York station for years 2020-2022. The Utica station was chosen because it is the closest monitoring station and is likely to be representative of the area. Background 24-hour PM_{10} was based on the 2nd maximum 24-hour concentration provided by the Rochester, New York station for calendar year 2022. The Rochester station was chosen because it is the closest monitoring station and is likely to be representative of the area. Note that 2020-2022 are the most recent years of available data for this station.

6. Urban / Rural Classification

In accordance with Section 2.3 of NYSDEC's DAR-10 air dispersion modeling guidance document: "Only facilities located in the New York City metro area may have sufficiently high population density and urban heat island effects to justify the use of urban dispersion coefficients." The site is not located in the New York City metro area; therefore, rural dispersion coefficients were used in the analysis.

7. Good Engineering Practice Stack Height Analysis

USEPA provides specific guidance for calculating Good Engineering Practice (GEP) stack height and for evaluating whether building downwash will occur (USEPA, 2003). GEP stack height is defined by USEPA as the height of the structure plus 1.5 times the lesser of the structure height or projected width. If the stack height for a source is less than the height identified using GEP guidelines, based on the dimensions of nearby buildings, then the potential for building downwash to occur exists and is to be considered in the modeling analysis.

The stacks to be modeled in this analysis are less than GEP stack height. Therefore, 36 directional building heights and widths data were estimated using the USEPA Building Profile Input Program, PRIME version 04274 (BPIP-PRIME) and incorporated into the AERMOD model.

8. Meteorological Data

The closest National Weather Service (NWS) station to the facility that has the appropriate available data for AERMOD is located in Rome, New York. The Rome NWS station is located approximately 3 kilometers to the Northeast of the facility. Therefore, the Rome, New York NWS station was utilized for the surface data for this analysis. Upper-air data from Albany, New York was also used. NYSDEC provided the necessary pre-processed data for use in the analysis. Data for years 2018-2022 were used.

9. Receptor Locations

In accordance with Section 2.4 of DAR-10[1], the modeling analysis utilized a set of nested Cartesian grids of receptors with a spacing of 70, 100, 250, and 500 meters extending to a distance of 1, 2, 5, and 10 kilometers, respectively, from the facility. The facility has restricted access with a fence and outer building walls that encloses the majority of the property, with the exception of the eastern parking lot; therefore, fence line receptors were included at a spacing of 25 meters. On-site receptors inside the fence line were

[1] NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis, Issued Date September 1, 2020.

excluded. Maximum impacts occurred within the 70-meter grid; therefore, no additional grids were added to the model.

Discrete receptors were added to sensitive locations including schools, hospitals, nursing homes, and daycares located within a 10-kilometer radius from the facility. **Figure 10** provides a map showing the locations of the sensitive receptors included in the modeling and **Table 7** provides the name and coordinates of each receptor.

Additional receptor grids were added to the Environmental Justice areas within a 10-kilometer radius from the facility and are identified in **Figure 11**. A receptor grid at 50-meter spacing was added to each area, in addition to the nested Cartesian grids. Note that 50-meter spacing in addition to the regular nested Cartesian grids resulted in an overabundance of receptors, but in absence of NYSDEC recommended spacing for Environmental Justice areas, this 50-meter spacing was used.

Disadvantaged Communities within a 10-kilometer radius from the facility were also identified and are included in **Figure 12**. No receptors were added to these areas as the above receptor grids provide adequate characterization of the impacts surrounding the facility.

The current version of AERMAP was used to calculate the receptor elevations and appropriate hill height values. Ten-meter resolution National Elevation Dataset (NED) data were used in the analysis.

10. Lakes Environmental Software – Multi-Chem Use

As shown in **Table 1**, more than 20 contaminants were required to be included in the air toxics modeling. Due to the large number of contaminants, the multi-chemical (multi-chem) utility of the AERMOD View program by Lakes Environmental Software™ was used as an initial screening level model for the air toxics. The purpose of the utility is to streamline the modeling of multiple contaminants by avoiding having to set up separate project files for each contaminant in the analysis.

For each emission source in the analysis, multi-chem creates an AERMOD input file using a normalized emission rate of 1.0 gram per second. The input files are run with AERMOD and produce post files containing the normalized predicted concentrations for each averaging period at each receptor. For example, if the model is run for the 1-hour averaging period, then the post file will contain the normalized 1-hour predicted concentrations for each hour in the meteorological dataset at each receptor. Next, multi-chem takes the source-specific contaminant emission rates, multiplies by the normalized predicted concentrations in the respective post files, and cumulatively adds the values paired in time and location. The results of the calculations are summarized in contaminant-specific plot files. At the bottom of the plot files is a summary of the source IDs and emission rates used to generate the plot files.

Initial results using the multi-chem utility were provided to NYSDEC in advance of the final modeling report to afford NYSDEC the opportunity to identify any toxics that should be modeled outside of the multi-chem utility. NYSDEC provided the following list of constituents on July 20, 2023 to be run outside of the multi-chem utility:

- 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol [04719-04-4]
- Copper Oxide [01317-38-0]
- Copper [07440-50-8]

- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- [57635-48-0]
- Fatty acids, C18-unsaturated phosphates [Trade Secret #5]
- Trade Secret [Trade Secret #8]

Additionally, NYSDEC required that emissions of copper oxide and copper be combined and modeled together for comparison to the short-term and annual guideline concentrations (SGC and AGC, respectively) for copper. Copper oxide and copper were run together outside of the multi-chem utility, and the other four contaminants listed above were also run separately without using the multi-chem utility.

11. Modeling Results

The results of the PM_{10} and $PM_{2.5}$ NAAQS modeling analysis are provided in **Table 8**, the results of the air toxics modeling using the multi-chem utility are provided in **Table 9**, and the results for the specific contaminants run outside of the multi-chem utility are provided in **Table 10**.

The results of the NAAQS modeling indicate that the maximum predicted impacts of $PM_{2.5}$ are below both the 24-hour and the annual $PM_{2.5}$ standards and the maximum predicted impacts of PM_{10} are below the annual PM_{10} standards.

The results of the air toxics modeling indicate that the maximum predicted concentrations of three of the modeled air contaminants exceed the AGC values provided by the NYSDEC Air Toxics Section (ATS). None of the modeled air contaminants exceed the SGCs in the NYSDEC DAR-1 AGC/SGC tables.

Two additional modeled air contaminants were initially shown to exceed their respective AGC values (2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol and the combination of copper and copper oxide). 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol is estimated to be emitted from the Reversing Mill, Bliss Mill, and Hot Mill. Copper is estimated to be emitted from the Overhauler; however, NYSDEC is requiring copper and copper oxide to be modeled together. Copper oxide is estimated to be emitted from the EP 00039 Casting and Holding Furnaces, the EP 00040 Casting Furnaces, and the Central Vacuum System.

Revere is proposing annual operating hour limits that will reduce the modeled impacts of (2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol and copper to 95% of their respective AGCs. Based on emission rates from the May 2023 testing and the resulting predicted impacts, the proposed operating hour limits would be 6,658 hours per year for the Overhauler and 7,858 hours per year for the Reversing Mill. However, we are proposing that the actual limits be based on the most recent Department-approved post-control hourly emission rates and resulting modeled impacts that are 95% of their respective AGCs.

It is important to note that the proposed operating hour limit cap of 6,658 hours per year on the Overhauler, based on the emission rates from the May 2023 testing, would reduce predicted copper impacts to 95% of its AGC. However, with this proposed operating hour limit, the predicted impact of copper and copper oxide combined exceeds the AGC, as shown in **Table 10**. For the maximum predicted concentration of the combined emissions of copper and copper oxide, based on emission rates from the May 2023 testing, to be below the AGC, multiple operating hour limits would be required, which would significantly hamper Revere's business operations.

An isopleth of the copper and copper oxide combined exceedance area is provided in **Figure 13**. This figure shows that the exceedance area of the combined copper and copper oxide impact is located entirely on Revere's property, specifically within the parking lot to the northeast of the manufacturing operations. The Revere facility has restricted access to the plant through a combination of fences and outer walls of certain buildings. However, this fence line does not include the parking lot, which is owned and maintained by Revere. While Revere owns this parking lot, there is not explicit restricted access to the public. Revere is proposing to explicitly restrict public access to this parking lot, which, in combination with the proposed 6,658 hour per year annual operating hour limit cap on the Overhauler, will reduce the combined offsite impacts of copper and copper oxide to below the AGC.

The three remaining contaminants that exceed their respective AGCs are as follows:

- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS# 57635-48-0)
- Fatty acids, C18-unsaturated phosphates (CAS# Trade Secret #5)
- Trade Secret (CAS# Trade Secret #8)

These contaminants are emitted from the First Run Down Mill. None of these contaminants are listed in NYSDEC's DAR-1 AGC/SGC tables; therefore, the ATS provided interim AGC values based on toxicological reviews. The information regarding the toxicities of these contaminants that the ATS was able to find was extremely limited, which resulted in NYSDEC assigning very conservative interim AGC values to these contaminants.

A Toxic – Best Achievable Control Technology (T-BACT) analysis has been included in Attachment F of the air permit application. In this analysis, it is presented that the following factors impact the assessment of T-BACT for the First Run Down Mill:

- Revere has instituted effective process controls to the extent practical
- Revere has conducted initial evaluations of coolant alternatives, and each has challenges that would need to be vetted with further evaluation before they could be trialed at the facility
- The First Run Down Mill is equipped with a mist eliminator to minimize emissions
- The three target constituents have low volatility and, therefore, estimated emissions may be overly conservative (on the high side)
- There is a lack of specific sampling and analytical methods for the target constituents
- The interim AGCs assigned by NYSDEC have built-in safety factors of 10x and 100x due to a lack of available toxicological information and, thus, are overly conservative
- Predicted impacts of the three target constituents are less than NYSDEC's published *de mimimis* AGC of 0.1 micrograms per cubic meter ($\mu g/m^3$)
- It is doubtful that an air pollution control manufacturer will provide a removal efficiency guarantee for the target compounds given the lack of information on these chemicals and the inability to quantify their physical state (e.g., aerosol, solid) or their present concentration/mass
- The estimated cost of removing approximately 665 combined pounds per year of the three target contaminants (540 pounds for the Commissioning Plan operating scenario) is $1.3 to $1.8 million per ton of contaminant removed.

For these reasons, this evaluation concludes that the 1721 First Run Down Mill has T-BACT for emissions of the three specified contaminants, since no other alternatives could be demonstrated as feasible. Considered alternatives were either not technically feasible or not economically feasible.

Electronic copies of the AERMOD input and output files for PM_{10}, $PM_{2.5}$, and the air toxics that were run outside of multi-chem, contaminant-specific plot files for the contaminants run within multi-chem, BPIP input and output files, AERMAP input and output files, and meteorological data files were submitted to the NYSDEC File Transfer Service (FTS) site.

FIGURES

PROJECT: 1940103004 | DATED: 10/21/2022 \\ramashfile01\RAM_Projects\Revere-Copper.1087689\1940103004.Revere-SFP-Renewal\Docs\Reports\ASF\Modeling\FigureOne_SiteLocation.mxd

0 500 1,000 Feet

SITE LOCATION MAP

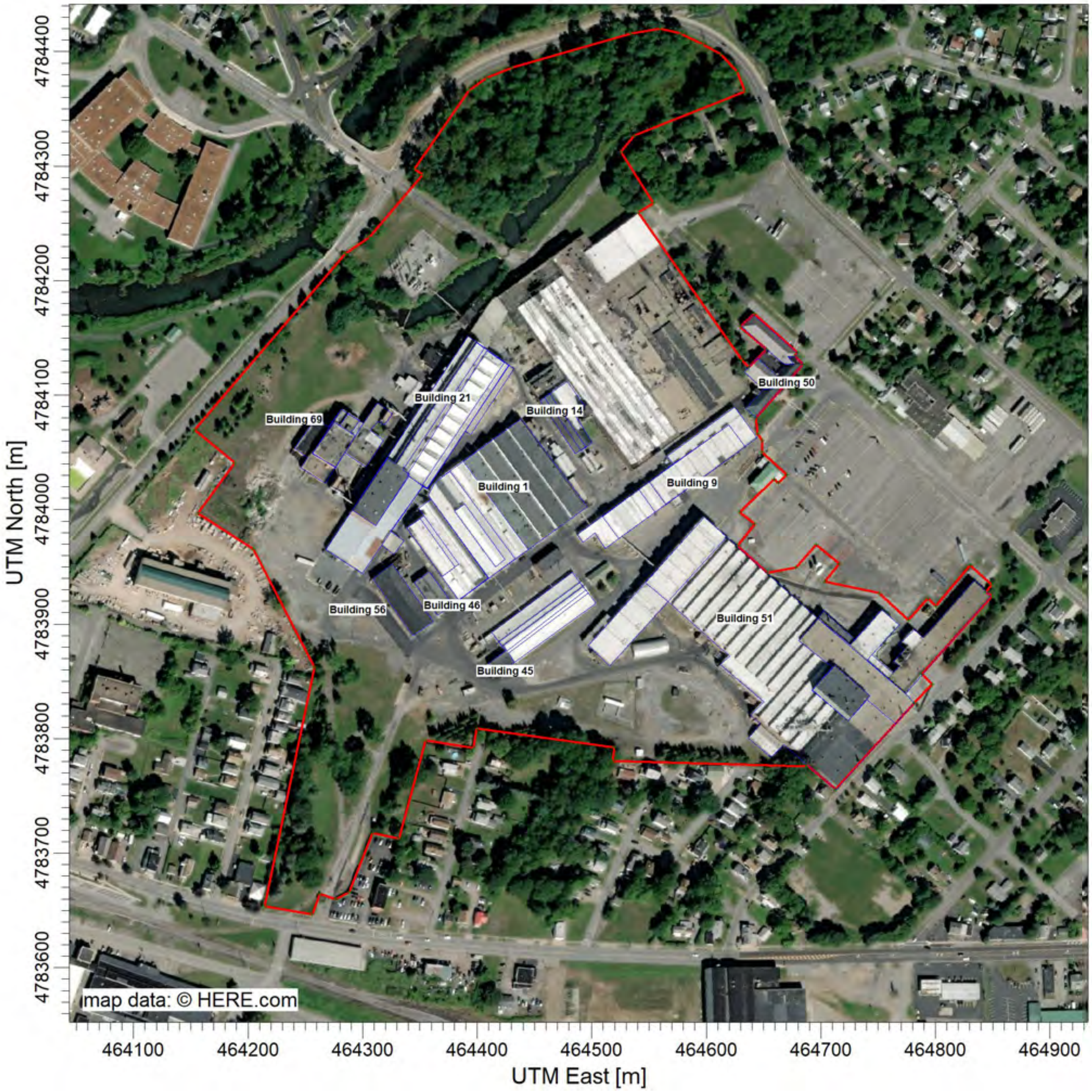
Revere Copper Products, Inc.
1 Revere Park
Rome, NY 13440

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY

PROJECT TITLE:

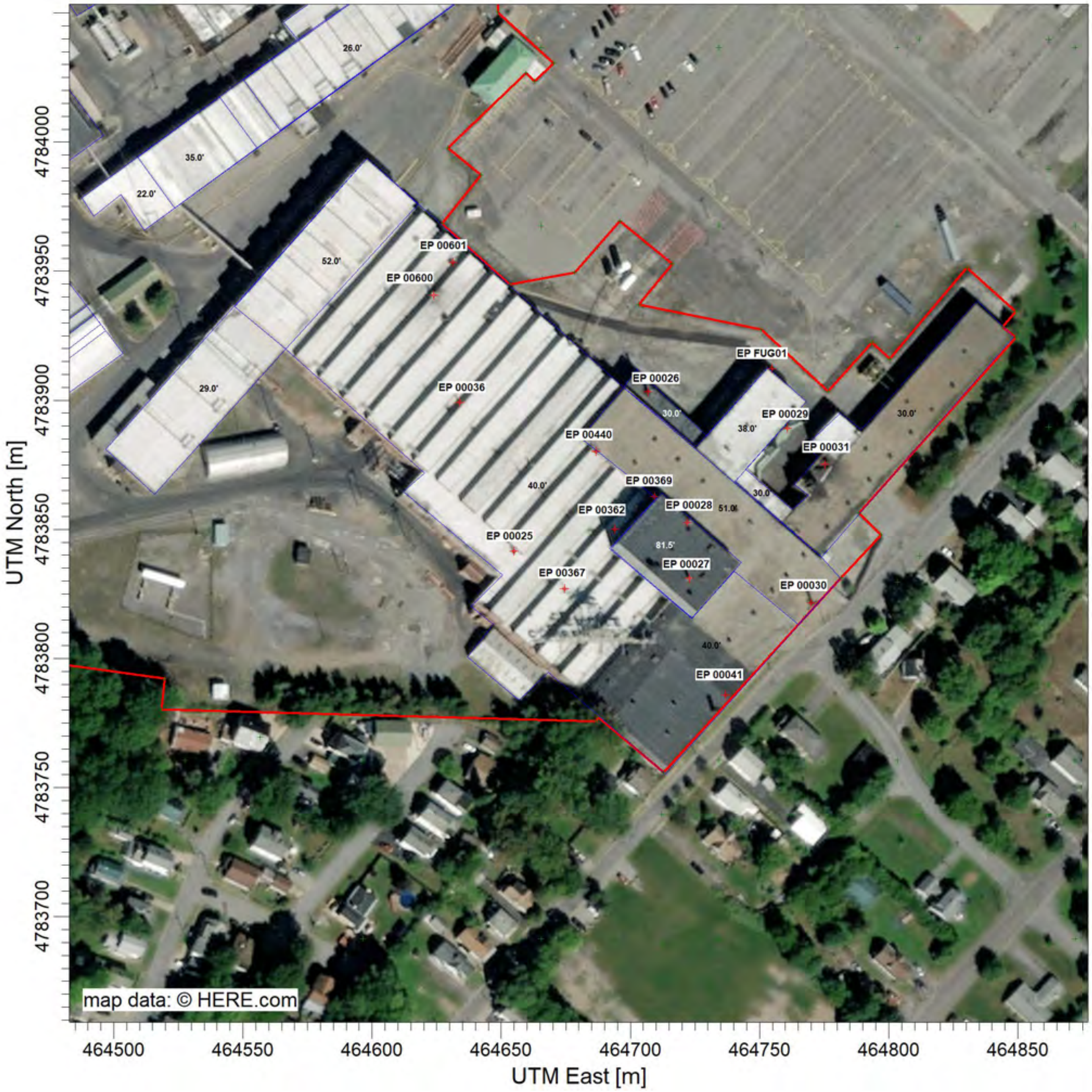
Figure 2 - Site Layout Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The red line represents the facility fenceline.	**23**	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:5,592 0 — 0.2 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 3 - Building 51 Stack Locations and Building Heights



COMMENTS:	SOURCES:	COMPANY NAME:	
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	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:2,480 — 0 to 0.05 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 4 - Building 45 Building Heights

COMMENTS:

SOURCES:

23

COMPANY NAME:

Revere Copper Products, Inc.

RECEPTORS:

10568

MODELER:

Steven Miraglia

SCALE: 1:795

0 0.02 km

RAMBOLL

DATE:

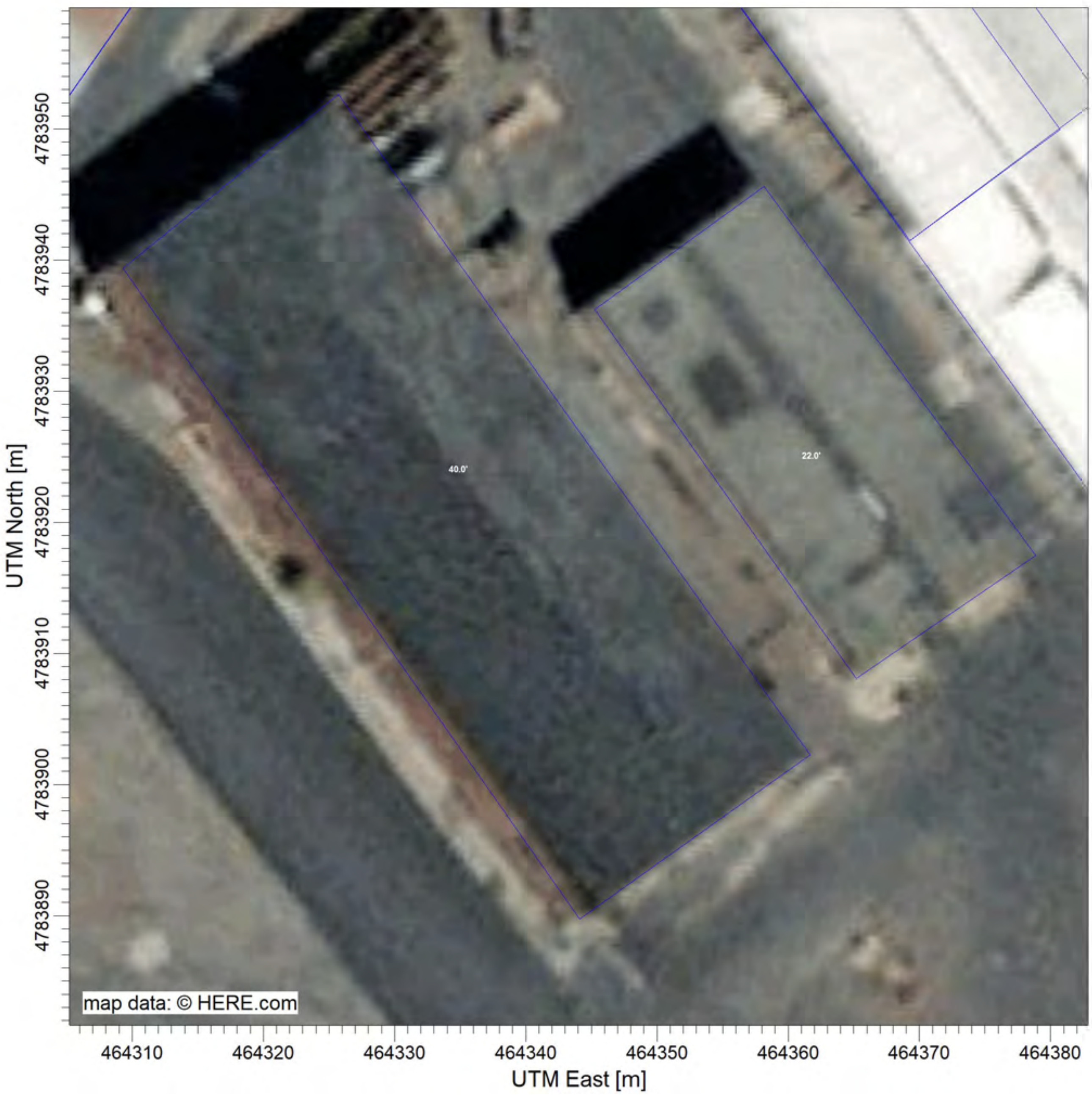
7/16/2023

PROJECT NO.:

1940103004

PROJECT TITLE:

Figure 5 - Building 46 and 56 Building Heights



COMMENTS:	SOURCES:	COMPANY NAME:	
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	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	
		SCALE: 1:488 0 0.01 km	RAMBOLL
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 6 - Building 1 Stack Locations and Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:1,100 0 — 0.04 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 7 - Building 14 Stack Locations and Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:415 0 0.01 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 8 - Building 21 and 69 Stack Locations and Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:1,792 0 — 0.05 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

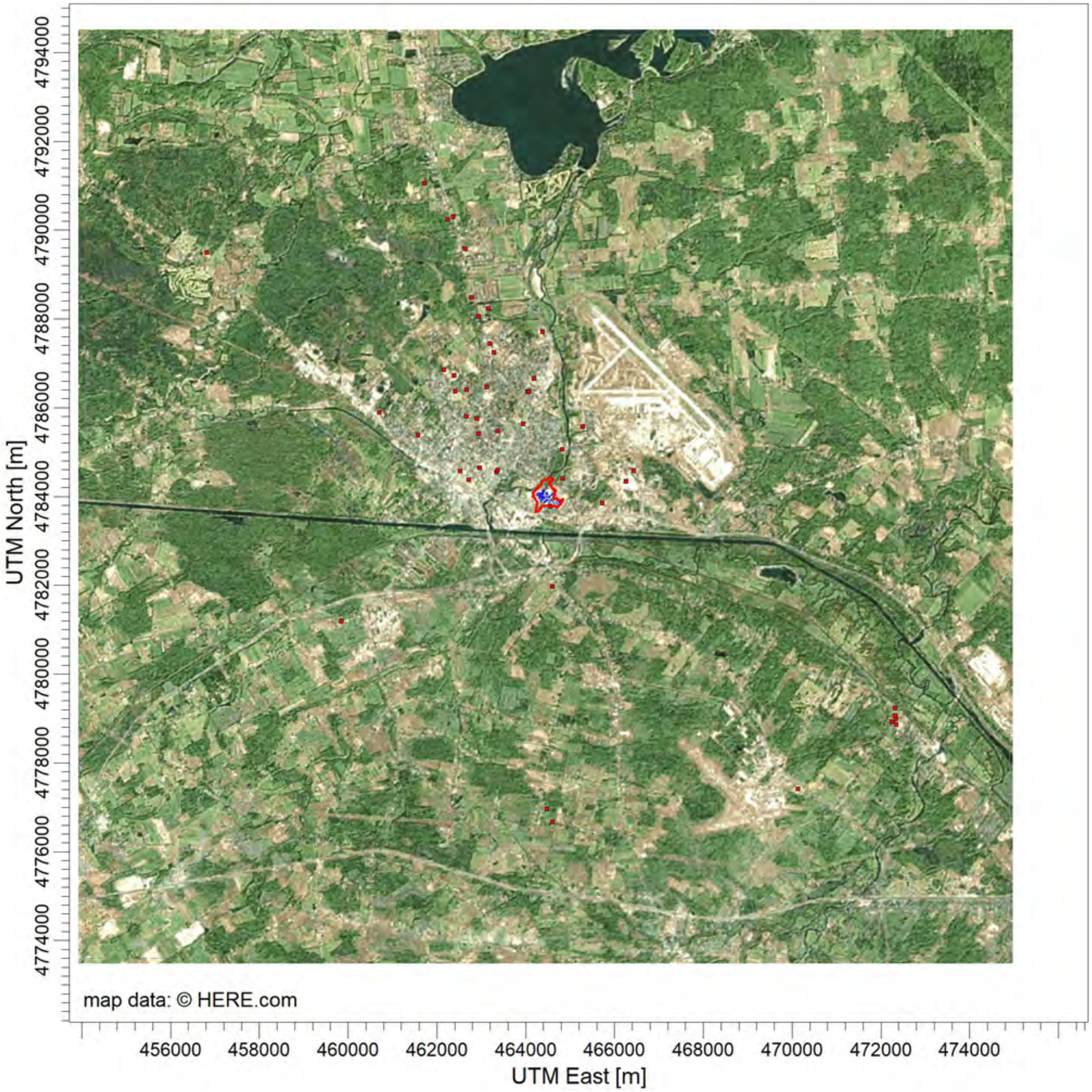
PROJECT TITLE:

Figure 9 - Building 50 Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: 10568	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:574 0 — 0.02 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

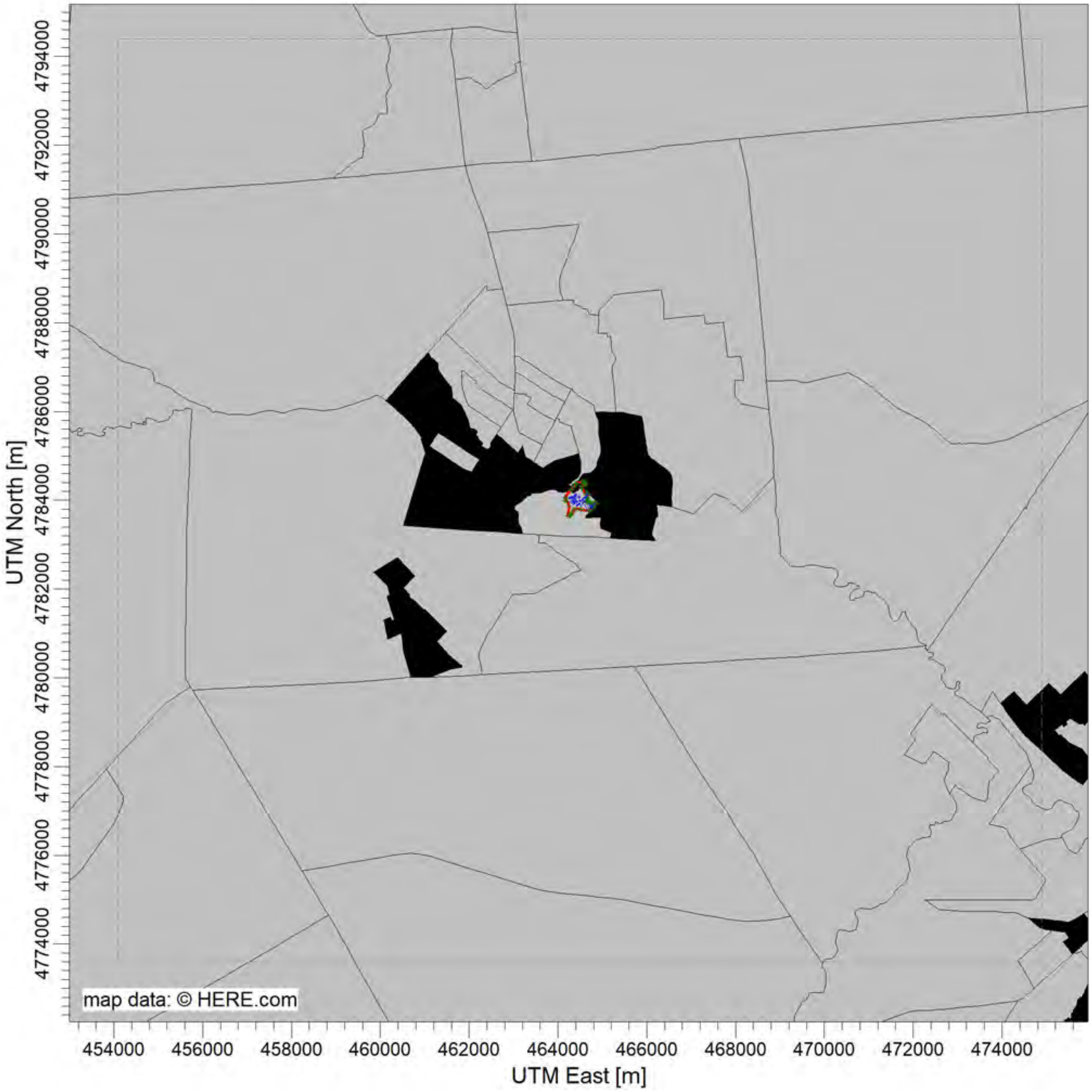
Figure 10 - Sensitive Receptor Locations



COMMENTS:	SOURCES:	COMPANY NAME:	
	20	**Revere Copper Products, Inc.**	
	RECEPTORS: **49**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,242 0 ——— 5 km	
		DATE: **2/1/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

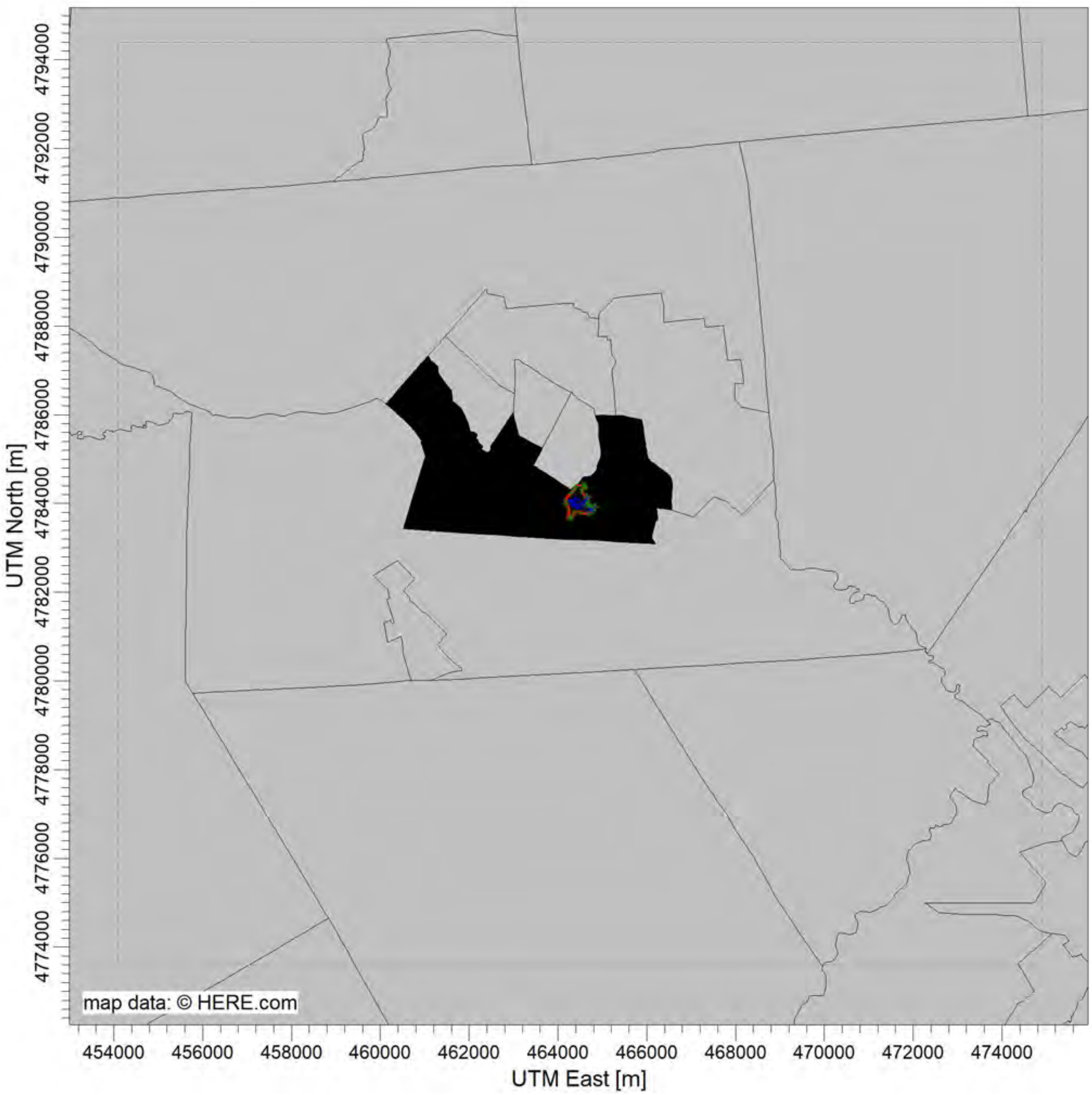
Figure 11 - Environmental Justice Area Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The black shaded areas represent the Environmental Justice Areas. The dashed box represents the model extents, out to 10 km from the facility.	**23**	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,225 0 — 5 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

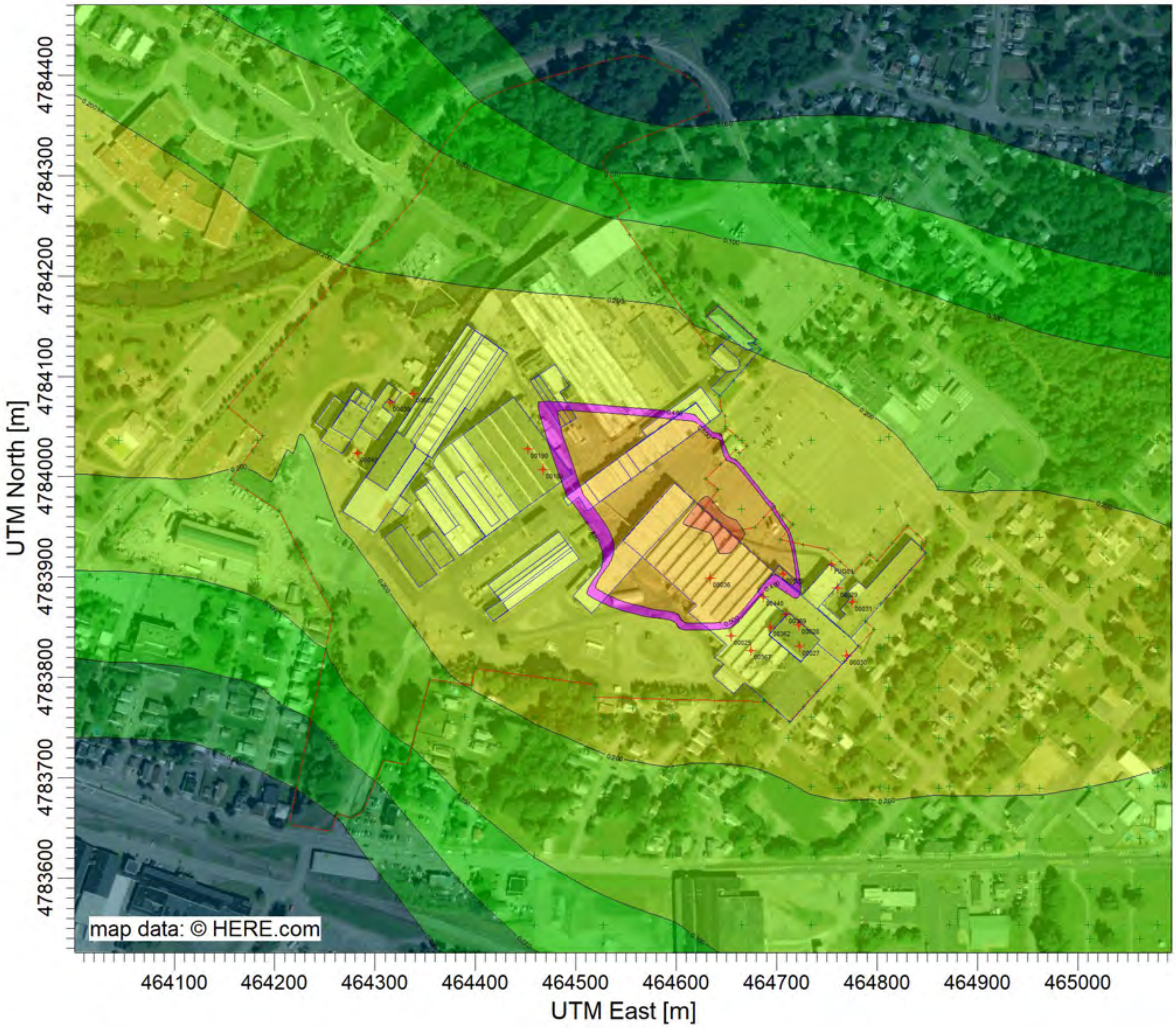
Figure 12 - Disadvantaged Communities Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The black shaded areas represent the Disadvantaged Communities. The dashed box represents the model extents, out to 10 km from the facility.	**23**	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,225 0 — 5 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 13 - Copper & Copper Oxide Combined Exceedance Isopleth



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 0.762 [ug/m^3] at (464653.20, 4783944.96)

0.008 0.010 0.020 0.050 0.070 0.100 0.200 0.480 0.500 0.700 0.762

COMMENTS: The pink tier corresponds with the AGC for copper.	SOURCES: **18**	COMPANY NAME: **Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
	OUTPUT TYPE: **Concentration**	SCALE: 1:6,872 0 — 0.2 km	
	MAX: **0.762 ug/m^3**	DATE: **7/21/2023**	PROJECT NO.: **1940103004**

TABLES

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	111	100	**YES**
Hexylene glycol	00107-41-5	N	N	59	100	NO
Diethylene glycol	00111-46-6	N	N	8.1	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-5	N	N	3.0E-02	100	NO
Alkanolamine	00141-43-5	N	N	195	100	**YES**
Barium oxide	01304-28-5	N	N	0.42	100	NO
Cadmium oxide	01306-19-0	Y	Y	7.8E-02	1	NO
Iron oxide	01309-37-1	N	N	1,049	100	**YES**
Magnesium oxide	01309-48-4	N	N	3	100	NO
Nickel oxide	01313-99-1	Y	N	0.24	10	NO
Zinc oxide	01314-13-2	N	N	10	100	NO
Lead oxide	01314-41-6	Y	Y	3.8	5	NO
Copper oxide	01317-38-0	N	N	3,528	100	**YES**
Chromium oxide	01333-82-0	Y	N	0.11	250	NO
Aluminum oxide	01344-28-1	N	N	32	100	NO
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	11	100	NO
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	243	100	**YES**
Sodium metasilicate	06834-92-0	N	N	13	100	NO
Silver	07440-22-4	N	N	1.5E-02	100	NO
Tin	07440-31-5	N	N	1.9	100	NO
Copper	07440-50-8	N	N	2,250	100	**YES**
Zinc	07440-66-6	N	N	1.9	100	NO
Zinc chloride	07646-85-7	N	N	0.28	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Sulfuric acid	07664-93-9	N	N	1,276	100	**YES**
Hydrogen peroxide	07722-84-1	N	N	18	100	NO
Phosphorus	07723-14-0	N	N	2.3E-03	100	NO
Graphite	07782-42-5	N	N	4,620	100	**YES**
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.4	100	NO
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	111	100	**YES**

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)
Nonylphenol, ethoxylated	09016-45-9	N	N	193	100	**YES**
Sodium phosphate, tribasic	10101-89-0	N	N	5.3	100	NO
Barium chloride	10361-37-2	N	N	0.25	100	NO
Ammonium chloride	12125-02-9	N	N	0.26	100	NO
Tellurium	13494-80-9	N	N	3.6E-03	100	NO
Silver oxide	20667-12-3	N	N	0.11	100	NO
Mercury oxide	21908-53-2	Y	Y	1.0E-03	5	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.15	0.1	NO[c]
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	N	N	186	100	**YES**
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	111	100	**YES**
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	**YES**
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	1,000	100	**YES**
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.79	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	910	100	**YES**
Sulfonic acids, petroleum, sodium salts	68608-26-4	N	N	305	100	**YES**
Petroleum distillates	Trade Secret #1	N	N	15	100	NO
Base oil	Trade Secret #3	N	N	193	100	**YES**
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	5,548	100	**YES**
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	N	N	111	100	**YES**
Proprietary emulsifier	Trade Secret #6	N	N	315	100	**YES**
Azole derivative	Trade Secret #7	N	N	11	100	NO
Trade Secret	Trade Secret #8	N	N	371	100	**YES**

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.
(c) The NYSDEC Air Toxics Section has reviewed this chemical and indicated that little or no toxicological information was found for it. It was NYSDEC's recommendation that, as this contaminant is approximately equal to the second most stringent MEL that is acceptable for use of 0.1 lb/yr, modeling is not required due to the lack of evidence of this contaminant being considered to be highly toxic.

Table 2

Summary of Stack Parameters[(a)] (English Units)

Revere Copper Products, Inc

Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (ft)	Base Elevation (ft)	Stack Height (ft)	Stack Diameter (inches)	Stack Diameter (ft)	Exit Temperature (°F)	Exit Velocity (ft/sec)	Exit Flowrate (acfm)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	142	453	100	36	3.0	80	57	24,000	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	191	453	92	19	1.6	80	58	7,000	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	180	453	45	9.0	0.75	100	19	500	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	253	453	45	9.0	0.75	100	19	500	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	244	453	55	7.0	0.58	100	0.001	0.016	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	190	453	65	3.0	0.25	150	59	174	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	531	453	35	9.0	0.75	100	19	500	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	591	453	42	9.0	0.75	100	19	500	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	384	455	50	48	4.0	200	48	36,499	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	313	455	50	48	4.0	200	50	37,621	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	420	455	18	6.0	0.50	80	119	1,400	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	9.84	453	60	51	4.3	510	43	37,000	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	80.4	453	35	48	4.0	70	51	38,827	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	226	453	44	42	3.5	150	53	30,600	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	102	453	57	36	3.0	70	56	23,554	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	76.8	453	60	72	6.0	70	36	61,334	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	4.49	453	80	30	2.5	115	68	20,000	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	161	453	45	18	1.5	70	5.8	620	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	30.7	453	14	196	16	70	0.001	13	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	482	453	150	84	7.0	200	7.3	16,800	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	505	453	60	50	4.2	390	9.4	7,700	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	73.5	453	44	24	2.0	70	74	14,000	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	25.4	453	45	22	1.8	70	63	10,000	Capped

Notes:

(a) Stack parameters are based on information provided by Revere.

Table 3
Summary of Stack Parameters[a] (Metric Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exit Temperature (°C)	Exit Velocity (m/sec)	Exit Flowrate (m^3/sec)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	43.2	138	30	0.91	27	17	11	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	58.3	138	28	0.48	27	18	3.3	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	54.9	138	14	0.23	38	5.7	0.24	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	77.0	138	14	0.23	38	5.7	0.24	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	74.3	138	17	0.18	38	3.0E-04	7.6E-06	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	58.0	138	20	0.08	66	18	8.2E-02	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	162	138	11	0.23	38	5.7	0.24	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	180	138	13	0.23	38	5.7	0.24	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	117	139	15	1.2	93	15	17	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	95.5	139	15	1.2	93	15	18	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	128	139	5.5	0.15	27	36	0.66	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	3.00	138	18	1.3	266	13	17	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	24.5	138	11	1.2	21	16	18	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	69.0	138	13	1.1	66	16	14	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	31.1	138	17	0.91	21	17	11	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	23.4	138	18	1.8	21	11	29	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	1.37	138	24	0.76	46	21	9.4	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	49.1	138	14	0.46	21	1.8	0.29	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	9.35	138	14	196	21	3.0E-04	6.0E-03	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	147	138	46	2.1	93	2.2	7.9	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	154	138	18	1.3	199	2.9	3.6	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	22.4	138	13	0.61	21	23	6.6	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	7.75	138	14	0.56	21	19	4.7	Capped

Notes:
(a) Stack parameters are based on information provided by Revere.

Table 4
Modeled Particulate Matter Emission Rates
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[a] (lb/hr)	Modeled Emission Rate[a] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
PM_{10}	NY075-00-5	2.40E-01	3.02E-02
$PM_{2.5}$	NY075-02-5	1.45E-01	1.83E-02
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
PM_{10}	NY075-00-5	9.80E-01	1.23E-01
$PM_{2.5}$	NY075-02-5	2.92E-01	3.68E-02
U-CAST1 (EP00602) - Central Vacuum			
PM_{10}	NY075-00-5	3.60E-02	4.54E-03
$PM_{2.5}$	NY075-02-5	3.60E-02	4.54E-03
U-ROLL1 (EP00036) - Bliss Mill			
PM_{10}	NY075-00-5	5.00E-03	6.30E-04
$PM_{2.5}$	NY075-02-5	5.00E-03	6.30E-04
U-ROLL1 (EP00030) - Hot Mill			
PM_{10}	NY075-00-5	2.70E-01	3.40E-02
$PM_{2.5}$	NY075-02-5	2.70E-01	3.40E-02
U-ROLL1 (EP00029) - First Run Down Mill			
PM_{10}	NY075-00-5	8.00E-01	1.01E-01
$PM_{2.5}$	NY075-02-5	6.90E-01	8.69E-02
U-ROLL1 (EP00026) - Reversing Mill			
PM_{10}	NY075-00-5	3.50E-01	4.41E-02
$PM_{2.5}$	NY075-02-5	2.86E-01	3.60E-02
U-ROLL1 (EP00025) - Z-Mill			
PM_{10}	NY075-00-5	1.11E+00	1.40E-01
$PM_{2.5}$	NY075-02-5	1.11E+00	1.40E-01

Table 4
Modeled Particulate Matter Emission Rates
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-OVER1 (EP00031) - Overhauler			
PM_{10}	NY075-00-5	7.20E-01	9.07E-02
$PM_{2.5}$	NY075-02-5	6.60E-01	8.32E-02
U-ANNE1 (EP00362) - Bright Anneal Exit			
PM_{10}	NY075-00-5	5.52E-03	6.95E-04
$PM_{2.5}$	NY075-02-5	5.52E-03	6.95E-04
U-ANNE1 (EP00367) - Bright Anneal Entry			
PM_{10}	NY075-00-5	6.13E-04	7.73E-05
$PM_{2.5}$	NY075-02-5	6.13E-04	7.73E-05
U-ANNE1 (EP00369) - Lee Wilson Anneal			
PM_{10}	NY075-00-5	9.50E-03	1.20E-03
$PM_{2.5}$	NY075-02-5	9.50E-03	1.20E-03
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
PM_{10}	NY075-00-5	1.66E-03	2.10E-04
$PM_{2.5}$	NY075-02-5	1.66E-03	2.10E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
PM_{10}	NY075-00-5	1.50E-02	1.89E-03
$PM_{2.5}$	NY075-02-5	1.50E-02	1.89E-03
U-ANNE1 (EP00027) - Strand Anneal			
PM_{10}	NY075-00-5	2.62E-02	3.30E-03
$PM_{2.5}$	NY075-02-5	2.62E-02	3.30E-03
1740 Heavy Gauge Cleaning (EP 00028)			
PM_{10}	NY075-00-5	1.66E-01	2.10E-02
$PM_{2.5}$	NY075-02-5	1.66E-01	2.10E-02

Table 4
Modeled Particulate Matter Emission Rates
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[a] (lb/hr)	Modeled Emission Rate[a] (g/s)
U-GALV1 Molten Metal Tank (EP 00601)			
PM_{10}	NY075-00-5	2.09E-02	2.63E-03
$PM_{2.5}$	NY075-02-5	2.09E-02	2.63E-03
U-GALV1 Acid Tank (EP 00600)			
PM_{10}	NY075-00-5	1.77E-02	2.23E-03
$PM_{2.5}$	NY075-02-5	1.77E-02	2.23E-03
U-COMB1 Boiler #3 (EP 00003)			
PM_{10}	NY075-00-5	4.26E-01	5.37E-02
$PM_{2.5}$	NY075-02-5	4.26E-01	5.37E-02
U-COMB1 Boilers #1 & 2 (EP 00004)			
PM_{10}	NY075-00-5	6.26E-01	7.89E-02
$PM_{2.5}$	NY075-02-5	6.26E-01	7.89E-02
U-FURN1 Walking Beam Furnace (EP 00041)			
PM_{10}	NY075-00-5	3.86E-01	4.86E-02
$PM_{2.5}$	NY075-02-5	3.86E-01	4.86E-02

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use.

Table 5
Modeled Toxics Emission Rates (Permit Application - 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	3.00E-02	3.77E-03
Copper oxide	01317-38-0	1.01E-01	1.27E-02
Graphite	07782-42-5	1.32E-01	1.66E-02
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.82E-01	2.29E-02
Copper oxide	01317-38-0	6.11E-01	7.70E-02
Graphite	07782-42-5	8.00E-01	1.01E-01
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.27E-03	4.12E-04
Copper oxide	01317-38-0	1.10E-02	1.39E-03
Graphite	07782-42-5	1.44E-02	1.81E-03
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	5.37E-05	6.76E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.42E-03	1.79E-04
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	4.42E-04	5.57E-05
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	5.40E-02	6.80E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	5.40E-02	6.80E-03
Nonylphenol, ethoxylated	09016-45-9	5.40E-02	6.80E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	5.40E-02	6.80E-03
Base oil	Trade Secret #3	5.40E-02	6.80E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Propane-1,2-diol	00057-55-6	1.90E-02	2.39E-03
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	1.90E-02	2.39E-03
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	3.17E-02	3.99E-03
Amines, tallow alkyl, ethoxylated	61791-26-2	1.90E-02	2.39E-03

Table 5
Modeled Toxics Emission Rates (Permit Application - 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.90E-02	2.39E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5.70E-01	7.18E-02
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	1.90E-02	2.39E-03
Trade Secret	Trade Secret #8	6.33E-02	7.98E-03
U-ROLL1 (EP00026) - Reversing Mill			
2-Aminoethanol	00141-43-5	7.97E-04	1.00E-04
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	2.09E-02	2.63E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	1.47E-01	1.86E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.33E-01	1.05E-01
U-OVER1 (EP00031) - Overhauler			
Copper	07440-50-8	3.71E-01	4.67E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	2.55E-01	3.21E-02
Proprietary emulsifier	Trade Secret #6	5.20E-03	6.55E-04
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.11E-02	1.40E-03
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.23E-03	1.55E-04
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	5.21E-03	6.56E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.23E-03	1.55E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.11E-02	1.40E-03

Table 5
Modeled Toxics Emission Rates (Permit Application - 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.32E-02	1.66E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.92E-03	2.42E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.46E-01	1.84E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use.

Table 6
Modeled Toxics Emission Rates (Permit Application - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	3.00E-02	3.77E-03
Copper oxide	01317-38-0	1.01E-01	1.27E-02
Graphite	07782-42-5	1.32E-01	1.66E-02
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.82E-01	2.29E-02
Copper oxide	01317-38-0	6.11E-01	7.70E-02
Graphite	07782-42-5	8.00E-01	1.01E-01
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.27E-03	4.12E-04
Copper oxide	01317-38-0	1.10E-02	1.39E-03
Graphite	07782-42-5	1.44E-02	1.81E-03
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	5.37E-05	6.76E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.42E-03	1.79E-04
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	4.42E-04	5.57E-05
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	5.40E-02	6.80E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	5.40E-02	6.80E-03
Nonylphenol, ethoxylated	09016-45-9	5.40E-02	6.80E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	5.40E-02	6.80E-03
Base oil	Trade Secret #3	5.40E-02	6.80E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Propane-1,2-diol	00057-55-6	1.90E-02	2.39E-03
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	1.90E-02	2.39E-03
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	3.17E-02	3.99E-03
Amines, tallow alkyl, ethoxylated	61791-26-2	1.90E-02	2.39E-03

Table 6
Modeled Toxics Emission Rates (Permit Application - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.90E-02	2.39E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5.70E-01	7.18E-02
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	1.90E-02	2.39E-03
Trade Secret	Trade Secret #8	6.33E-02	7.98E-03
U-ROLL1 (EP00026) - Reversing Mill[(b)]			
2-Aminoethanol	00141-43-5	7.15E-04	9.01E-05
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	1.87E-02	2.36E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	1.32E-01	1.67E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.33E-01	1.05E-01
U-OVER1 (EP00031) - Overhauler[(c)]			
Copper	07440-50-8	2.82E-01	3.55E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	1.94E-01	2.44E-02
Proprietary emulsifier	Trade Secret #6	3.95E-03	4.98E-04
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.11E-02	1.40E-03
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.23E-03	1.55E-04
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	5.21E-03	6.56E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.23E-03	1.55E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.11E-02	1.40E-03

Table 6
Modeled Toxics Emission Rates (Permit Application - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.32E-02	1.66E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.92E-03	2.42E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.46E-01	1.84E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use.
(b) The modeled emission rates for the Reversing Mill incorporate the proposed annual hourly operating cap of 7,858 hours.
(c) The modeled emission rates for the Overhauler incorporate the proposed annual hourly operating cap of 6,658 hours.

Table 7
Sensitive Receptors[a]
Revere Copper Products, Inc
Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Schools		
Bellamy Elementary	465,720	4,783,850
Boces Consortium Continuing Ed	462,528	4,784,566
Central New York Academy Of Dance	460,703	4,785,892
Gansevoort Elementary School	461,577	4,785,376
George R Staley Elementary School[b]	464,091	4,784,259
Griffiss Child Development Center	466,431	4,784,586
John E Joy Elementary School	462,632	4,789,581
Kings Kids Christian Pre Sch	462,782	4,788,475
Louis V Denti Elementary School	462,396	4,786,724
Lyndon Strough Middle School	462,419	4,786,361
Mohawk Valley Community Action	456,820	4,789,491
New York State School for the Deaf	462,903	4,785,755
Nursery School of First Presbyterian Church	462,965	4,784,642
Oriskany High School	472,341	4,778,864
Ridge Mills Elementary School	464,380	4,787,712
Rome Catholic School	463,198	4,787,436
Rome Early Childhood Program	465,282	4,785,572
Rome Free Academy	466,258	4,784,343
Rome Refugee Services English School	463,345	4,784,544
Hospitals		
Rome Memorial Hospital: Prenatal Care	462,726	4,784,371
Rome Health General Hospital	464,043	4,786,362
Rome Memorial Hospital: Outpatient	462,936	4,788,048
Rome Memorial Hospital Diagnostic	464,184	4,786,658
Nursing Homes		
Rome Health Residential Health Care Facility	464,082	4,786,357
Colonial Park Rehabilitation & Nursing Center	464,827	4,785,055
The Grand Rehabilitation and Nursing at Rome	463,374	4,785,477
Betsy Ross Nursing Facility	462,159	4,786,848
Bethany Gardens	463,285	4,787,249
Nascentia Health	463,165	4,788,233
Terrace at Woodland	462,247	4,790,234
Eastern Star Home	472,341	4,778,994
Pounder Hall Inc	472,253	4,778,932
New Burton Homestead	463,373	4,784,596
Central Ny Ddso-Rome	459,846	4,781,187
Daycares		
Eastern Star Day Care Center Inc	472,319	4,779,065
Jesus Brethren Christian Schools	462,667	4,786,400
Peek-A-Boo Place Daycare	464,609	4,776,669
Little Folks Daycare	462,655	4,785,803
Home Grown Tots Daycare	462,945	4,785,413
Loving Hands Daycare	463,128	4,786,461
Cottage Hill Daycare	462,363	4,790,293

Table 7
Sensitive Receptors[a]
Revere Copper Products, Inc
Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Something New Daycare	461,726	4,791,057
Little Brook Daycare LLC	464,832	4,784,404
Here We Grow Again Creative Learning Center	464,557	4,783,770
Griffiss Child Development Center	466,431	4,784,586
Rebecca France's Family WeeCare	464,484	4,776,959
Ava Dorfman Adult Day Care Center	463,946	4,785,636
Wild Things Child Care	464,605	4,781,966
Children's Dyslexia Center of Central New York	472,319	4,779,229
Mid York Child Care	470,136	4,777,410

Notes:

(a) Sensitive receptors were identified using Google Maps to identify the schools, hospitals, nursing homes, and daycares located within a 10 kilometer radius from the facility, and Google Earth for receptor coordinates.

(b) Note that this school is permanently closed due to flooding conditions. No receptor was added to the modeling for this location.

Table 8
NAAQS Modeling Results
Revere Copper Products, Inc
Rome, NY

Pollutants	Averaging Period	Predicted Maximum Concentration[(a)] ($\mu g/m^3$)	Background Concentration[(b)] ($\mu g/m^3$)	Predicted Concentration[(c)] ($\mu g/m^3$)	NAAQS Standard[(d)] ($\mu g/m^3$)	Percent of NAAQS Standard (%)
PM2.5						
	24-Hour	15.6	15.5	31.1	35.0	89
	Annual (Primary)	6.0	5.00	11.0	12.0	92
	Annual (Secondary)	6.0	5.00	11.0	15.0	73
PM10						
	24-Hour	18.9	24.0	42.9	150	29

Notes:

(a) $PM_{2.5}$ 24-Hour Predicted Maximum Concentration is the AERMOD 8th highest result.

PM10 24-Hour Predicted Maximum Concentration is the AERMOD 6th highest result.

(b) $PM_{2.5}$ background concentrations represents the 3-year average, provided by NYSDEC Region 6 Utica Station for Calendar Year 2022. PM_{10} background concentration represents the 2nd maximum 24-hour concentration, provided by NYSDEC Region 8 Rochester Station for Calendar Year 2022.

(c) Predicted Concentration ($\mu g/m^3$) = Predicted Maximum Concentration ($\mu g/m^3$) + Background Concentration ($\mu g/m^3$).

(d) 24-hour $PM_{2.5}$ NAAQS standard is based on annual 98th percentile, averaged over 3 years.

Annual $PM_{2.5}$ NAAQS standard is based on the annual mean, averaged over 3 years.

24-hour PM_{10} NAAQS standard is not to be exceeded more than once per year on average over 3 years.

Table 9
Permit Application Air Toxics Modeling Results Run - with Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC / AGC[a] ($\mu g/m^3$)	Percent of SGC / AGC (%)
Propane-1,2-diol	00057-55-6	1-Hour	0.5	36,850	<1
		Annual	0.025	2,000	<1
Alkanolamine[b]	00141-43-5	1-Hour	0.98	1,500	<1
		Annual	0.027	18	<1
Iron oxide	01309-37-1	1-Hour	1.73	---	---
		Annual	0.101	12	<1
Sulfuric acid	07664-93-9	1-Hour	4.44	120	4
		Annual	0.473	1.0	47
Graphite	07782-42-5	1-Hour	7.6	---	---
		Annual	0.44	4.8	9
(Z)-9-Octadecen-1-ol ethoxylated[c]	09004-98-2	1-Hour	0.49	---	---
		Annual	0.025	0.10	25
Nonylphenol, ethoxylated[c]	09016-45-9	1-Hour	0.98	93	1
		Annual	0.0266	20	<1
Amines, tallow alkyl, ethoxylated[c]	61791-26-2	1-Hour	0.49	---	---
		Annual	0.025	0.10	25
Distillates, petroleum, hydrotreated light	64742-47-8	1-Hour	26.4	---	---
		Annual	1.00	900	<1
Hydrotreated heavy naphthenic petroleum oil[b][c]	64742-52-5	1-Hour	4	380	1
		Annual	0.32	12	3

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Table 9
Permit Application Air Toxics Modeling Results Run - with Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC / AGC[a] ($\mu g/m^3$)	Percent of SGC / AGC (%)
Distillates (petroleum), solvent-dewaxed light paraffinic[c]	64742-56-9	1-Hour	52.5	380	14
		Annual	2.80	12	23
Sulfonic acid, petroleum, sodium salts[c]	68608-26-4	1-Hour	1.11	---	---
		Annual	0.043	0.10	43
Base oil[c]	Trade Secret #3	1-Hour	0.98	380	<1
		Annual	0.0266	12	<1
Highly refined, low viscosity mineral oils/hydrocarbons[b][c]	Trade Secret #4	1-Hour	22	380	6
		Annual	1.08	12	9
Proprietary emulsifier[b][c]	Trade Secret #6	1-Hour	0.254	---	---
		Annual	0.00638	0.10	6

Notes:

(a) Annual and short-term guideline concentrations (AGCs and SGCs, respectively) are based on NYSDEC's DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212 issued February 12, 2021 unless otherwise noted.

(b) For modeling against the annual averaging period, the emission rates for these contaminants factored in the proposed annual operating caps for the Reversing Mill and the Overhauler, depending on the contaminant.

(c) NYSDEC has provided interim AGCs and SGCs for these contaminants based on toxicological reviews.

Table 10
Permit Application Air Toxics Modeling Results Run - Without Multi-Chem

Revere Copper Products, Inc

Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC / AGC[a] ($\mu g/m^3$)	Percent of SGC / AGC (%)
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol[c][d]	04719-04-4	1-Hour	1.0	30	3
		Annual	0.06	0.06	95
Copper and Copper oxide, combined[b]	07440-50-8/01317-38-0	1-Hour	18.1	100	18
		Annual	0.762	0.48	159
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-[d]	57635-48-0	1-Hour	0.8	---	---
		Annual	0.042	0.01	424
Fatty acids, C18-unsaturated phosphates[d]	Trade Secret #5	1-Hour	0.49	---	---
		Annual	0.025	0.01	254
Trade Secret[d]	Trade Secret #8	1-Hour	1.62	---	---
		Annual	0.08	0.001	8481

Notes:

(a) Annual and short-term guideline concentrations (AGCs and SGCs, respectively) are based on NYSDEC's DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212 issued February 12, 2021 unless otherwise noted.
(b) As requested by NYSDEC on July 20, 2023, emissions of copper and copper oxide are modeled together and compared to the SGC/AGC for copper. Revere will restrict public access to the portion of the parking lot as needed to demonstrate acceptable
(c) For modeling against the annual averaging period, the emission rates for these contaminants factored in the proposed annual operating caps for the Reversing Mill and the Overhauler, depending on the contaminant.
(d) NYSDEC has provided interim AGCs and SGCs for these contaminants based on toxicological reviews.

EXHIBITS

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ENVIRONMENT
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REVERE COPPER PRODUCTS, INC.
MODELING PROTOCOL

Project name	**Revere Copper Products, Inc. – Air State Facility Permit Renewal**
Project no.	**1087689\1940103004**
Recipient	**NYSDEC Air Dispersion Modeling Group**
Document type	**Modeling Protocol**
Version	**1**
Date	**December 1, 2022**
Prepared by	**Steven Miraglia**
Checked by	**Helena Kubarycz**
Approved by	**Cris Hine**

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1. Project Discussion

Revere Copper Products, Inc. (Revere) is renewing and modifying the Air State Facility (ASF) Permit, ID 6-3013-00091/00039, for their manufacturing facility located at 1 Revere Park in Rome, New York. As a part of the renewal/modification process, the facility is required to perform air dispersion modeling to demonstrate compliance with the air toxics requirements in Title 6 of the New York Code of Rules and Regulations (6 NYCRR) Part 212. A summary of the Part 212 evaluation is provided in **Table 1**.

Air dispersion modeling will be performed using the United States Environmental Protection Agency (USEPA) AERMOD (Version 21112) model. This protocol was developed to satisfy the New York State Department of Environmental Conservation's (NYSDEC's) requirement for submittal of a modeling protocol prior to performing refined air dispersion modeling.

2. Site Location and Description

The facility is located at 1 Revere Park in Rome, NY within Oneida county. A site location map is provided in **Figure 1**. The site is bounded by mixed residential and commercial development to the north, east, and south and by a public park and elementary school to the east.

The primary manufacturing operations at the Revere facility consist of induction furnaces used for copper casting operations, annealing units, rolling mills, and a copper galvanizing line. Emissions from these processes, except for the galvanizing line, require air dispersion modeling to demonstrate compliance with Part 212. The emissions of criteria pollutants are capped to below the major source thresholds; therefore, no modeling of criteria pollutants will be performed.

3. Stack Parameters and Buildings

Stack parameters for the emission points that are expected to be included in the refined modeling analysis are provided in **Table 2** (English Units) and **Table 3** (Metric Units). Note that some of the stack parameters are currently being collected or confirmed by Revere; the modeling report will include complete stack parameter tables. Additionally, the building heights and locations of each stack are also being confirmed by Revere; the modeling report will include a site layout map with the building heights and stack locations.

4. Emission Rates

Emission rates that will require modeling are in the process of being finalized and will be included in the modeling report.

5. Urban/Rural Classification

In accordance with Section 2.3 of NYSDEC's DAR-10 air dispersion modeling guidance document: "Only facilities located in the New York City metro area may have sufficiently high population density and urban heat island effects to justify the use of urban dispersion coefficients." The site is not located in the New York City metro area; therefore, rural dispersion coefficients will be used in the analysis.

6. Good Engineering Practice Stack Height Analysis

USEPA provides specific guidance for calculating Good Engineering Practice (GEP) stack height and for evaluating whether building downwash will occur (USEPA, 2003). GEP stack height is defined by USEPA as the height of the structure plus 1.5 times the lesser of the structure height or projected width. If the stack height for a source is less than the height identified using GEP guidelines, based on the dimensions of nearby buildings, then the potential for building downwash to occur exists and is to be considered in the modeling analysis.

The stacks to be modeled in this analysis will be less than GEP stack height. Therefore, 36 directional building heights and widths data will be estimated using the USEPA Building Profile Input Program, PRIME version (BPIP-PRIME) and incorporated into the AERMOD model.

7. Meteorological Data

The closest National Weather Service (NWS) station to the facility that has the appropriate available data for AERMOD is located in Rome, New York. The Rome NWS station is located approximately 3 kilometers to the Northeast of the facility. Therefore, the Rome, New York NWS station will be utilized for the surface data for this analysis. Upper-air data from Albany, New York will also be used. NYSDEC will provide the necessary pre-processed data for use in the analysis. Data for years 2017-2021 will be used.

8. Receptor Locations

The modeling analysis utilized a set of nested Cartesian grids of receptors with a spacing of 70, 100, and 250 meters extending to a distance of 1, 2, and 5 kilometers, respectively, from the facility. The facility has restricted access with a fence that encloses the entire property; therefore, fence line receptors will be included at a spacing of 25 meters. On-site receptors inside the fence line will be excluded. If maximum impacts occur beyond 1 km from the facility, an additional grid will be placed around the maximum impacts with grid points 70 meters apart.

The current version of AERMAP will be used to calculate the receptor elevations and appropriate hill height values. Ten-meter resolution National Elevation Dataset (NED) data will be used in the analysis.

9. Lakes Environmental Software – Multi-Chem Use

As shown in **Table 1**, it is anticipated that more than 20 different contaminants will need to be included in the modeling. Due to the large number of contaminants, the analysis will be performed using the multi-chemical (multi-chem) utility of the AERMOD View program by Lakes Environmental Software™. The purpose of the utility is to streamline the modeling of multiple contaminants by avoiding having to set up separate project files for each contaminant in the analysis.

For each emission source in the analysis, multi-chem creates an AERMOD input file using a normalized emission rate of 1.0 gram per second. The input files are run with AERMOD and produce post files containing the normalized predicted concentrations for each averaging period at each receptor. For example, if the model is run for the 1-hour averaging period, then the post file will contain the normalized 1-hour predicted concentrations for each hour in the meteorological dataset at each receptor. Next, multi-chem takes the source-specific contaminant emission rates, multiplies by the normalized predicted concentrations in the respective post files, and cumulatively adds the values paired in time and location. The results of the calculations are summarized in contaminant-specific plot files. At the bottom of the plot files will be a summary of the source IDs and emission rates used to generate the plot files.

If the maximum impacts of any of the modeled contaminants are 90% or higher of the respective short-term or annual guideline concentration (SGCs and AGCs, respectively) then those contaminants will be run in AERMOD outside of the multi-chem utility.

10. Modeling Results

A modeling report will be submitted to NYSDEC as part of the facility's ASF permit renewal/modification application. The modeling analysis will provide a comparison of the maximum predicted concentrations to the SGC and AGC values provided in the DAR-1 guidance.

Electronic copies of AERMOD input and output files, BPIP input and output files, AERMAP input and output files, and meteorological data files will be submitted to the modeling group in NYSDEC's Central Office.

TABLES

Table 1
Summary of Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Emissions (lb/yr)	Mass Emission Limit[(b)]	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	605	100	YES
Hexylene glycol	00107-41-5	N	N	216	100	YES
Diethylene glycol	00111-46-6	N	N	7.8	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-1	N	N	2.3E-02	100	NO
Alkanolamine	00141-43-5	N	N	331	100	YES
Barium oxide	01304-28-5	N	N	33	100	NO
Iron oxide	01309-37-1	N	N	659	100	YES
Magnesium oxide	01309-48-4	N	N	329	100	YES
Nickel oxide	01313-99-1	**Y**	N	33	10	**YES**
Zinc oxide	01314-13-2	N	N	1,647	100	YES
Lead oxide	01314-41-6	**Y**	**Y**	66	5	**YES**
Copper oxide	01317-38-0	N	N	4,941	100	YES
Aluminum oxide	01344-28-1	N	N	659	100	YES
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	12	100	NO
2-Methyl-4-isothiazolin-3-one	02682-20-4	N	N	216	100	YES
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	3,588	100	YES
Sodium metasilicate	06834-92-0	N	N	48	100	NO
Silicon	07440-21-3	N	N	165	100	YES
Silver	07440-22-4	N	N	2.7	100	NO
Tin	07440-31-5	N	N	5.7	100	NO
Copper	07440-50-8	N	N	2,650	100	YES
Zinc	07440-66-6	N	N	1.7	100	NO
Zinc chloride	07646-85-7	N	N	3.9	100	NO
Hydrogen chloride	07647-01-0	N	N	39	100	NO
Sulfuric acid	07664-93-9	N	N	4,548	100	YES
Hydrogen peroxide	07722-84-1	N	N	97	100	NO
Phosphorus	07723-14-0	N	N	1.1	100	NO
Graphite	07782-42-5	N	N	13,175	100	YES
Magnesium chloride	07786-30-3	N	N	431	100	YES
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.0	100	NO
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	605	100	YES
Nonylphenol, ethoxylated	09016-45-9	N	N	202	100	YES
Sodium phosphate, tribasic	10101-89-0	N	N	19	100	NO
Barium chloride	10361-37-2	N	N	3.9	100	NO
Magnesium dinitrate	10377-60-3	N	N	906	100	YES
Ammonium chloride	12125-02-9	N	N	3.9	100	NO
Tellurium	13494-80-9	N	N	1.3	100	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.11	100	NO
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	605	100	YES
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	YES
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	3,668	100	YES
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.60	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	973	100	YES
Sulfonic acid, petroleum, sodium salts	68608-26-4	N	N	806	100	YES
Petroleum distillates	Trade Secret #1	N	N	17	100	NO
Petroleum distillates (mineral oil)	Trade Secret #2	N	N	297	100	YES
Base oil	Trade Secret #3	N	N	202	100	YES
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	9,675	100	YES
Alkyl ether carboxylic acid	Trade Secret #5	N	N	605	100	YES
Proprietary emulsifier	Trade Secret #6	N	N	295	100	YES
Azole derivative	Trade Secret #7	N	N	11	100	NO

Table 1
Summary of Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Emissions (lb/yr)	Mass Emission Limit[b]	Modeling Required (Yes/No)

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.

Table 2
Summary of Stack Parameters (English Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Base Elevation (ft)	Stack Height (ft)	Stack Diameter (inches)	Stack Diameter (ft)	Exit Temperature (°F)	Exit Velocity (ft/sec)	Exit Flowrate (acfm)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	(a)	(a)	445	82	36	3.0	(a)	(a)	(a)	(a)
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	(a)	(a)	445	88	19	1.6	(a)	(a)	(a)	(a)
U-ANNE1	00367	51	1154 Bright Anneal Exhaust	(a)	(a)	445	30	12	1.0	(a)	(a)	(a)	(a)
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	(a)	(a)	445	30	7	0.6	(a)	(a)	(a)	(a)
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	(a)	(a)	445	30	3	0.3	(a)	(a)	(a)	(a)
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	(a)	(a)	445	50	48	4.0	200	60	45,000	(a)
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	(a)	(a)	445	50	48	4.0	200	60	45,000	(a)
U-CAST1	00602	21	Central Vacuum Exhaust	(a)	(a)	445	18	6	0.5	(a)	(a)	(a)	(a)
U-OVER1	00031	51	1715 Overhauler Exhaust	(a)	(a)	445	44	48	4.0	70	40	30,000	(a)
U-ROLL1	00025	51	1724 Z-Mill Exhaust	(a)	(a)	445	44	42	3.5	150	53	30,600	(a)
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	(a)	(a)	445	30	36	3.0	70	53	22,500	(a)
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	(a)	(a)	445	60	72	6.0	70	8	13,000	(a)
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	(a)	(a)	445	80	30	2.5	115	68	20,000	(a)
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	(a)	(a)	445	45	18	1.5	70	6	620	(a)
U-SOLV1	Fugitive	51	Solvent Degreaser Exhaust	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Notes:
(a) Stack parameters and locations are currently being collected by Revere.

Table 3
Summary of Stack Parameters (Metric Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exit Temperature (°C)	Exit Velocity (m/sec)	Exit Flowrate (m^3/sec)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	(a)	(a)	136	25	0.91	(a)	(a)	(a)	(a)
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	(a)	(a)	136	27	0.48	(a)	(a)	(a)	(a)
U-ANNE1	00367	51	1154 Bright Anneal Exhaust	(a)	(a)	136	9	0.30	(a)	(a)	(a)	(a)
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	(a)	(a)	136	9	0.18	(a)	(a)	(a)	(a)
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	(a)	(a)	136	9	0.08	(a)	(a)	(a)	(a)
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	(a)	(a)	136	15	1.22	93	18	21	(a)
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	(a)	(a)	136	15	1.22	93	18	21	(a)
U-CAST1	00602	21	Central Vacuum Exhaust	(a)	(a)	136	5	0.15	(a)	(a)	(a)	(a)
U-OVER1	00031	51	1715 Overhauler Exhaust	(a)	(a)	136	13	1.22	21	12	14	(a)
U-ROLL1	00025	51	1724 Z-Mill Exhaust	(a)	(a)	136	13	1.07	66	16	14	(a)
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	(a)	(a)	136	9	0.91	21	16	11	(a)
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	(a)	(a)	136	18	1.83	21	2	6	(a)
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	(a)	(a)	136	24	0.76	46	21	9	(a)
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	(a)	(a)	136	14	0.46	21	2	0	(a)
U-SOLV1	Fugitive	51	Solvent Degreaser Exhaust	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Notes:
(a) Stack parameters and locations are currently being collected by Revere.

FIGURES

PROJECT: 1940103004 | DATED: 10/21/2022

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0 500 1,000 Feet

SITE LOCATION MAP

Revere Copper Products, Inc.
1 Revere Park
Rome, NY 13440

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY

Alliance
TECHNICAL GROUP

July 18, 2023

David Ozog
Environmental Manager
Revere Copper Products Inc.
One Revere Park
Rome, NY 13440
315-338-2160 (direct)
DOzog@reverecopper.com

RE: Investigative Testing
Five (5) Process Exhausts
Alliance Project No. 2023-2747

Dear Mr. Ozog,

Alliance Technical Group, LLC (Alliance) conducted investigative testing at the Revere Copper Products facility located in Rome, New York. Testing concluded of determining the emission rates of filterable and condensable particulate matter (PM) for five (5) process exhausts, with additional copper (Cu) testing at the exhaust of the 1515 Overhauler, at the facility.

Please find attached summaries of the testing results along with a copy of the field data collected during the testing. Please contact me at (315) 289-9433 or via email at jeff.gorman@alliancetg.com if you have any questions or need additional information.

Sincerely,
Alliance Technical Group, LLC

Jeffrey Gorman
Jeff Gorman, QSTI
Operations Manager- New York

Enclosure

Laboratory Reports can be found in the full test report in Exhibit 3 of the Renewal Application

Alliance TECHNICAL GROUP

Table 1
Summary of Results – 2056 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/1/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	37,889	37,403	37,572	37,621
Stack Conditions dscfm	34,603	34,469	34,238	34,437
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0039	0.0030	0.0030
Emission Rate, lb/hr	0.64	1.2	0.88	0.89
Condensable Particulate Matter Data				
Concentration, grain/dscf	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Emission Rate, lb/hr	0.079	0.16	0.095	0.11

Table 2
Summary of Results – 2443 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/2/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	36,188	36,524	36,786	36,499
Stack Conditions dscfm	33,277	33,054	33,130	33,154
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Emission Rate, lb/hr	0.25	0.22	0.14	0.20
Condensable Particulate Matter Data				
Concentration, grain/dscf	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Emission Rate, lb/hr	0.14	0.12	0.14	0.13

CORPORATE OFFICE
255 Grant St. SE, Suite 600
Decatur, AL 35601
256.351.0121

www.alliancetechnicalgroup.com

Table 3
Summary of Results – 1715 Overhauler

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/30/23**	**5/31/23**	**5/31/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	39,813	39,971	36,697	38,827
Stack Conditions dscfm	39,075	38,880	35,533	37,829
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0035	0.013	0.0064	0.0075
Emission Rate, lb/hr	1.2	4.2	1.9	2.4
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0017	7.9E-04	0.0016
Emission Rate, lb/hr	0.75	0.55	0.24	0.52
Copper Data				
Concentration, ug/dscm	2,538	--	--	2,538
Emission Rate, lb/hr	0.37	--	--	0.37

Table 4
Summary of Results – 1723 Reversing Mill

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	25,441	23,155	22,064	23,554
Stack Conditions dscfm	24,404	21,982	20,736	22,374
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Emission Rate, lb/hr	0.18	0.18	0.11	0.16
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0011	0.0012	9.0E-04	0.0011
Emission Rate, lb/hr	0.23	0.22	0.16	0.20

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Table 5
Summary of Results – 1721 First Run Down Mill

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	60,905	61,226	61,870	61,334
Stack Conditions dscfm	57,917	58,539	58,671	58,376
Filterable Particulate Matter Data				
Concentration, grain/dscf	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Emission Rate, lb/hr	0.33	0.27	0.19	0.26
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0018	0.0010	6.5E-04	0.0011
Emission Rate, lb/hr	0.88	0.51	0.33	0.57

Field Data

Emission Calculations

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min	(θ)	90.0	90.0	90.0	90.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	57.339	57.472	59.538	58.116
Meter Temperature, °F	(Tm)	69.2	78.5	92.1	79.9
Meter Temperature, °R	(Tm)	528.9	538.2	551.8	539.6
Meter Orifice Pressure, in. WC	(ΔH)	1.333	1.350	1.400	1.361
Volume H_2O Collected, mL	(Vlc)	19.1	20.4	24.7	21.4
Nozzle Diameter, in	(Dn)	0.212	0.212	0.212	0.212
Area of Nozzle, ft^2	(An)	0.0002	0.0002	0.0002	0.0002
Filterable PM Mass, mg	(Mn)	<u>3.3</u>	<u>2.8</u>	<u>1.8</u>	2.6
Condensable PM Mass, mg	(M_{CPM})	1.8	1.6	1.8	1.7
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	57.740	56.839	57.459	57.346
Standard Water Volume, ft^3	(Vwstd)	0.901	0.962	1.165	1.009
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
Meter Pressure, in Hg	(Pm)	30.11	30.09	30.10	30.10
Volume at Nozzle, ft^3	(Vn)	62.789	62.805	63.797	63.13
Isokinetic Sampling Rate, (%)	(I)	98.8	97.9	98.8	98.5
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.8	-0.4	0.0	0.1
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.25	0.22	0.14	0.20
Condensable PM Concentration, grain/dscf	(C_{CPM})	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.14	0.12	0.14	0.13
Total PM Concentration, grain/dscf	(C_{TPM})	0.0014	0.0012	9.7E-04	0.0012
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.39	0.34	0.27	0.33

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

Emission Calculations

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min		90.0	90.0	90.0	90.0
VELOCITY HEAD, in. WC					
Point 1		0.70	0.58	0.64	0.64
Point 2		0.69	0.66	0.66	0.67
Point 3		0.68	0.69	0.69	0.69
Point 4		0.68	0.72	0.72	0.71
Point 5		0.68	0.78	0.78	0.75
Point 6		0.68	0.84	0.84	0.79
Point 7		0.68	0.78	0.78	0.75
Point 8		0.68	0.70	0.70	0.69
Point 9		0.68	0.54	0.54	0.59
Point 10		0.54	0.54	0.54	0.54
Point 11		0.70	0.70	0.70	0.70
Point 12		0.76	0.70	0.70	0.72
Point 13		0.62	0.62	0.62	0.62
Point 14		0.64	0.64	0.64	0.64
Point 15		0.72	0.72	0.72	0.72
Point 16		0.76	0.76	0.76	0.76
Point 17		0.80	0.80	0.80	0.80
Point 18		0.80	0.80	0.80	0.80
Point 19		0.76	0.76	0.76	0.76
Point 20		0.68	0.68	0.68	0.68
Point 21		0.56	0.56	0.68	0.60
Point 22		0.58	0.58	0.58	0.58
Point 23		0.66	0.68	0.68	0.67
Point 24		0.70	0.68	0.68	0.69
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.826	0.828	0.833	0.829
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Static Pressure, in. WC	(Pg)	0.21	0.21	0.21	0.21
Stack Pressure, in. Hg	(Ps)	30.03	30.01	30.02	30.02
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	107.3	115.3	116.4	113.0
Temperature, °R	(Ts)	567.0	575.0	576.1	572.698
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
O_2 Concentration, %	(O_2)	18.1	18.1	18.1	18.1
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.04	29.04	29.04	29.04
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.87	28.86	28.82	28.85
Velocity, ft/sec	(Vs)	48.0	48.4	48.8	48.4
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	36,188	36,524	36,786	36,499
At Standard Conditions, dscfm	(Qs)	33,277	33,054	33,130	33,154

Emission Calculations

Location Revere Copper - Rome, NY
Source 2056 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min	(θ)	240.0	240.0	240.0	240.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	184.136	181.174	183.960	183.090
Meter Temperature, °F	(Tm)	96.5	87.1	97.7	93.8
Meter Temperature, °R	(Tm)	556.2	546.8	557.3	553.4
Meter Orifice Pressure, in. WC	(ΔH)	1.794	1.773	1.782	1.783
Volume H_2O Collected, mL	(Vlc)	34.6	46.6	51.5	44.2
Nozzle Diameter, in	(Dn)	0.220	0.220	0.220	0.220
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	24.2	44.0	33.6	33.9
Condensable PM Mass, mg	(M_{CPM})	3.0	5.9	3.6	4.2
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	173.571	172.671	172.014	172.752
Standard Water Volume, ft^3	(Vwstd)	1.632	2.198	2.429	2.086
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
Meter Pressure, in Hg	(Pm)	30.24	30.06	30.06	30.12
Volume at Nozzle, ft^3	(Vn)	190.051	187.363	188.760	188.72
Isokinetic Sampling Rate, (%)	(I)	97.4	97.3	97.6	97.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.6	0.2	0.4	0.4
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0022	0.0039	0.0030	0.0030
Filterable PM Emission Rate, lb/hr	(PMR)	0.64	1.2	0.88	0.89
Condensable PM Concentration, grain/dscf	(C_{CPM})	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.079	0.16	0.095	0.11
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0045	0.0033	0.0034
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.72	1.3	1.0	1.0

Emission Calculations

Location	Revere Copper - Rome, NY
Source	2056 Metling Furnace
Project No.	AST-2023-2747
Parameter	PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min		240.0	240.0	240.0	240.0
VELOCITY HEAD, in. WC					
Point 1		0.72	0.70	0.73	0.72
Point 2		0.72	0.70	0.73	0.72
Point 3		0.71	0.69	0.74	0.71
Point 4		0.71	0.70	0.74	0.72
Point 5		0.75	0.69	0.73	0.72
Point 6		0.69	0.67	0.73	0.70
Point 7		0.70	0.69	0.71	0.70
Point 8		0.72	0.65	0.73	0.70
Point 9		0.76	0.70	0.74	0.73
Point 10		0.76	0.70	0.73	0.73
Point 11		0.78	0.75	0.75	0.76
Point 12		0.79	0.77	0.74	0.77
Point 13		0.85	0.78	0.72	0.78
Point 14		0.83	0.78	0.71	0.77
Point 15		0.88	0.82	0.78	0.83
Point 16		0.85	0.80	0.79	0.81
Point 17		0.85	0.83	0.80	0.83
Point 18		0.85	0.85	0.83	0.84
Point 19		0.85	0.85	0.85	0.85
Point 20		0.88	0.85	0.87	0.87
Point 21		0.86	0.85	0.88	0.86
Point 22		0.86	0.84	0.84	0.85
Point 23		0.83	0.85	0.85	0.84
Point 24		0.84	0.86	0.85	0.85
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.879	0.873	0.872	0.875
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Static Pressure, in. WC	(Pg)	0.60	0.55	0.60	0.58
Stack Pressure, in. Hg	(Ps)	30.15	29.97	29.97	30.03
Stack Cross-sectional Area, ft^2	(As)	12.31	12.31	12.31	12.31
Temperature, °F	(Ts)	117.2	106.7	112.4	112.1
Temperature, °R	(Ts)	576.9	566.3	572.0	571.746
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
O_2 Concentration, %	(O_2)	18.7	18.7	18.8	18.7
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.07	29.07	29.07	29.07
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.97	28.93	28.92	28.94
Velocity, ft/sec	(Vs)	51.3	50.7	50.9	51.0
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	37,889	37,403	37,572	37,621
At Standard Conditions, dscfm	(Qs)	34,603	34,469	34,238	34,437

Emission Calculations

Location Revere Copper - Rome, NY
Source 1721 First Run Down Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min	(θ)	80.0	80.0	80.0	80.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	55.620	53.918	55.245	54.928
Meter Temperature, °F	(Tm)	91.7	70.4	82.0	81.4
Meter Temperature, °R	(Tm)	551.4	530.0	541.7	541.0
Meter Orifice Pressure, in. WC	(ΔH)	1.503	1.503	1.541	1.516
Volume H_2O Collected, mL	(Vlc)	7.4	18.1	17.5	14.3
Nozzle Diameter, in	(Dn)	0.247	0.247	0.247	0.247
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.3</u>	<u>1.9</u>	<u>1.3</u>	1.8
Condensable PM Mass, mg	(M_{CPM})	6.2	3.6	2.3	4.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	53.998	54.360	54.508	54.288
Standard Water Volume, ft^3	(Vwstd)	0.349	0.854	0.825	0.676
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
Meter Pressure, in Hg	(Pm)	30.26	30.21	30.21	30.23
Volume at Nozzle, ft^3	(Vn)	56.783	56.853	57.478	57.04
Isokinetic Sampling Rate, (%)	(I)	99.0	98.6	98.7	98.8
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	1.2	0.1	0.2	0.5
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.33	0.27	0.19	0.26
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0018	0.0010	6.5E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.88	0.51	0.33	0.57
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0016	0.0010	0.0017
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.2	0.78	0.51	0.83

Underlined values were below the MDL; MDL used for calculation purposes.

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Emission Calculations

Location Revere Copper - Rome, NY
Source 1721 First Run Down Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min		80.0	80.0	80.0	80.0
VELOCITY HEAD, in. WC					
Point 1		0.39	0.47	0.48	0.45
Point 2		0.40	0.47	0.48	0.45
Point 3		0.38	0.49	0.48	0.45
Point 4		0.39	0.45	0.45	0.43
Point 5		0.39	0.43	0.44	0.42
Point 6		0.38	0.39	0.41	0.39
Point 7		0.38	0.36	0.37	0.37
Point 8		0.36	0.36	0.34	0.35
Point 9		0.44	0.35	0.38	0.39
Point 10		0.45	0.38	0.39	0.41
Point 11		0.42	0.39	0.39	0.40
Point 12		0.40	0.40	0.39	0.40
Point 13		0.39	0.38	0.40	0.39
Point 14		0.37	0.38	0.39	0.38
Point 15		0.36	0.36	0.35	0.36
Point 16		0.35	0.34	0.34	0.34
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.625	0.631	0.635	0.630
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Static Pressure, in. WC	(Pg)	-0.20	-0.20	-0.20	-0.20
Stack Pressure, in. Hg	(Ps)	30.14	30.09	30.09	30.10
Stack Cross-sectional Area, ft^2	(As)	28.27	28.27	28.27	28.27
Temperature, °F	(Ts)	95.6	86.7	91.5	91.3
Temperature, °R	(Ts)	555.3	546.4	551.2	550.941
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.77	28.67	28.67	28.70
Velocity, ft/sec	(Vs)	35.9	36.1	36.5	36.2
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	60,905	61,226	61,870	61,334
At Standard Conditions, dscfm	(Qs)	57,917	58,539	58,671	58,376

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Emission Calculations

Location Revere Copper - Rome, NY
Source 1723 Reversing Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min	(θ)	60.0	60.0	57.5	59.2
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Meter Correction Factor	(Y)	0.997	0.997	0.997	0.997
Orifice Calibration Value	(ΔH @)	1.568	1.568	1.568	1.568
Meter Volume, ft^3	(Vm)	51.374	47.447	43.281	47.367
Meter Temperature, °F	(Tm)	89.5	94.9	96.9	93.8
Meter Temperature, °R	(Tm)	549.1	554.6	556.6	553.4
Meter Orifice Pressure, in. WC	(ΔH)	2.046	1.683	1.504	1.745
Volume H_2O Collected, mL	(Vlc)	18.5	14.4	13.3	15.4
Nozzle Diameter, in	(Dn)	0.215	0.215	0.215	0.215
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.8</u>	<u>2.8</u>	<u>1.7</u>	2.4
Condensable PM Mass, mg	(M_{CPM})	3.5	3.5	2.4	3.1
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	49.926	45.496	41.238	45.554
Standard Water Volume, ft^3	(Vwstd)	0.872	0.679	0.627	0.726
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
Meter Pressure, in Hg	(Pm)	30.35	30.24	30.16	30.25
Volume at Nozzle, ft^3	(Vn)	52.047	47.924	43.878	47.95
Isokinetic Sampling Rate, (%)	(I)	95.6	96.7	97.0	96.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.8	-0.5	0.1	-0.7
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.18	0.18	0.11	0.16
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0011	0.0012	9.0E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.23	0.22	0.16	0.20
Total PM Concentration, grain/dscf	(C_{TPM})	0.0019	0.0021	0.0015	0.0019
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.41	0.40	0.27	0.36

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

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Emission Calculations

Location	**Revere Copper - Rome, NY**
Source	**1723 Reversing Mill**
Project No.	**AST-2023-2747**
Parameter	**PM/CPM**

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min		60.0	60.0	57.5	59.2
VELOCITY HEAD, in. WC					
Point 1		1.30	1.10	1.10	1.17
Point 2		1.30	1.10	1.10	1.17
Point 3		1.30	1.10	1.10	1.17
Point 4		1.30	1.10	1.10	1.17
Point 5		1.10	1.10	1.10	1.10
Point 6		1.10	1.10	1.10	1.10
Point 7		1.10	1.10	0.86	1.02
Point 8		1.10	1.10	0.87	1.02
Point 9		1.10	1.10	0.87	1.02
Point 10		0.85	0.79	0.87	0.84
Point 11		0.85	0.79	0.74	0.79
Point 12		0.85	0.80	0.71	0.79
Point 13		1.20	0.80	0.74	0.91
Point 14		1.20	0.81	0.72	0.91
Point 15		1.20	0.80	0.68	0.89
Point 16		1.20	0.80	0.66	0.89
Point 17		1.10	0.80	0.67	0.86
Point 18		1.20	0.80	0.67	0.89
Point 19		1.10	0.80	0.67	0.86
Point 20		1.10	0.80	0.67	0.86
Point 21		1.05	0.78	0.67	0.83
Point 22		1.05	0.80	0.61	0.82
Point 23		1.00	0.80	0.66	0.82
Point 24		1.00	0.80	--	0.90
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	1.052	0.952	0.902	0.969
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Static Pressure, in. WC	(Pg)	0.16	0.16	0.16	0.16
Stack Pressure, in. Hg	(Ps)	30.21	30.13	30.06	30.14
Stack Cross-sectional Area, ft^2	(As)	7.07	7.07	7.07	7.07
Temperature, °F	(Ts)	86.3	91.9	96.0	91.4
Temperature, °R	(Ts)	545.9	551.5	555.7	551.045
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.65	28.68	28.67	28.67
Velocity, ft/sec	(Vs)	60.0	54.6	52.0	55.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	25,441	23,155	22,064	23,554
At Standard Conditions, dscfm	(Qs)	24,404	21,982	20,736	22,374

Emission Calculations

Location Revere Copper - Rome, NY
Source 1715 Overhauler
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min	(θ)	60.0	60.0	60.0	60.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	62.536	64.137	59.104	61.926
Meter Temperature, °F	(Tm)	79.0	84.1	88.7	84.0
Meter Temperature, °R	(Tm)	538.7	543.8	548.4	543.6
Meter Orifice Pressure, in. WC	(ΔH)	3.613	3.612	3.133	3.453
Volume H_2O Collected, mL	(Vlc)	35.5	35.2	36.1	35.6
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	14.0	50.8	23.5	29.4
Condensable PM Mass, mg	(M_{CPM})	8.9	6.7	2.9	6.2
Copper Mass, ug	(M_{Cu})	4,400.0	--	--	4,400.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	61.230	62.190	56.765	60.062
Standard Water Volume, ft^3	(Vwstd)	1.676	1.660	1.702	1.680
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
Meter Pressure, in Hg	(Pm)	30.43	30.42	30.38	30.41
Volume at Nozzle, ft^3	(Vn)	62.592	63.934	58.726	61.75
Isokinetic Sampling Rate, (%)	(I)	96.3	98.3	98.1	97.6
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.6	-0.1	-0.1	-0.6
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0035	0.013	0.0064	0.0075
Filterable PM Emission Rate, lb/hr	(PMR)	1.2	4.2	1.9	2.4
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0022	0.0017	7.9E-04	0.0016
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.75	0.55	0.24	0.52
Total PM Concentration, grain/dscf	(C_{TPM})	0.0058	0.014	0.0072	0.0091
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.9	4.8	2.2	3.0
Copper Concentration, ug/dscm	(C_{Cu})	2,538	--	--	2,538
Copper Emission Rate, lb/hr	(ER_{Cu})	0.37	--	--	0.37

Emission Calculations

Location	Revere Copper - Rome, NY
Source	1715 Overhauler
Project No.	AST-2023-2747
Parameter	PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min		60.0	60.0	60.0	60.0
VELOCITY HEAD, in. WC					
Point 1		0.94	0.86	1.10	0.97
Point 2		0.96	0.79	1.10	0.95
Point 3		0.68	0.77	1.00	0.82
Point 4		0.83	0.77	1.00	0.87
Point 5		0.86	0.77	1.05	0.89
Point 6		0.78	0.80	1.05	0.88
Point 7		1.00	0.77	1.00	0.92
Point 8		1.00	0.75	0.55	0.77
Point 9		1.00	0.90	0.59	0.83
Point 10		0.95	0.88	0.50	0.78
Point 11		1.00	0.78	0.56	0.78
Point 12		1.05	0.80	0.50	0.78
Point 13		0.50	0.80	1.05	0.78
Point 14		0.56	0.79	1.05	0.80
Point 15		0.50	1.00	1.00	0.83
Point 16		0.48	1.05	1.00	0.84
Point 17		1.00	1.00	1.05	1.02
Point 18		1.10	1.10	0.52	0.91
Point 19		1.10	1.10	0.42	0.87
Point 20		1.00	0.95	0.46	0.80
Point 21		1.05	0.95	0.45	0.82
Point 22		1.00	0.90	0.46	0.79
Point 23		1.05	0.95	0.46	0.82
Point 24		1.05	1.00	0.46	0.84
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.938	0.939	0.860	0.912
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Static Pressure, in. WC	(Pg)	-0.50	-0.60	-0.65	-0.58
Stack Pressure, in. Hg	(Ps)	30.12	30.11	30.10	30.11
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	69.0	72.0	73.6	71.5
Temperature, °R	(Ts)	528.6	531.7	533.3	531.184
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.58	28.56	28.54	28.56
Velocity, ft/sec	(Vs)	52.8	53.0	48.7	51.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	39,813	39,971	36,697	38,827
At Standard Conditions, dscfm	(Qs)	39,075	38,880	35,533	37,829

ATTACHMENT F
TOXIC – BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

Intended for
Revere Copper Products Inc.
Rome, New York

Document type
Report

Date
July 2023

PART 212 T-BACT EVALUATION

EMISSION POINT 00029 OF EMISSION UNIT U-ROLL1

Bright ideas. Sustainable change.

PART 212 T-BACT EVALUATION
EMISSION POINT 00029 OF EMISSION UNIT U-ROLL1

Project name	**Part 212 T-BACT EVALUATION**
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Prepared by	**Cris Hine**
Approved by	**Matthew Traister, P.E.**

CONTENTS

1. EXECUTIVE SUMMARY

Revere Copper Products Inc. (Revere) operates boilers, furnaces, and metal working equipment that are authorized by an Air State Facility (ASF) Permit (Permit Number 6-3013-00091/00039), which was last modified effective March 24, 2015. A renewal application was submitted to New York State Department of Environmental Conservation (NYSDEC) on February 8, 2023, thereby meeting the requirement to submit a renewal application no less than 180 days (May 4, 2023) and no more than 18 months prior to the expiration date. The renewal application also included a proposed modification involving the replacement of a casting furnace with a new furnace.

A revised ASF Permit application is being submitted to address comments of the NYSDEC. Since many of the Revere operations are subject to Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 212, the renewal application includes an updated evaluation of Part 212 requirements for subject emission points. The updated Part 212 evaluation identified three non-criteria air contaminants that could not be shown to meet the degree of air cleaning required in Table 4 of Subpart 212-2.3(b). The three contaminants, which are potentially[1] emitted from the 1721 First Run Down Mill (Emission Source 01721, Mist Eliminator 00C29, Emission Point (EP) 00029), are:

- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS No. 57635-48-0)
- Fatty acids, C18-unsaturated phosphates (identified as Trade Secret #5 in the Emission Inventory)
- Confidential ingredient (identified as Trade Secret #8 in the Emission Inventory).

All three are associated with QH Everoll A 9883, which is a coolant used in the 1721 First Run Down Mill. These three contaminants are not listed in NYSDEC's DAR-1: *Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6NYCRR Part 212*. As a result, NYSDEC's Air Toxics Section (ATS) performed toxicity reviews for the three contaminants. The first two contaminants were given an interim Annual Guideline Concentration (AGC) of 0.01 micrograms per cubic meter ($\mu g/m^3$), as a "Moderate Toxicity *de minimis* with a Safety Factor of 10X applied due to uncertainties in the toxicological database." The third contaminant was given an interim AGC of 0.001 $\mu g/m^3$, as a "Moderate Toxicity *de minimis* with a Safety Factor of 100X applied due to the lack of information in the toxicological database."

In accordance with Subpart 212-1.5(d) and guidance in NYSDEC's DAR-1: *Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6NYCRR Part 212*, Revere submits this Toxic – Best Achievable Control Technology (T-BACT) analysis and requests that a less restrictive permissible emission rate be specified for the above three contaminants.

Process changes, material substitution, stack changes, and add-on control options were considered as possible means of reducing emissions. For reasons discussed in this document, process changes and material replacement are not considered technically feasible at this time. Installation of a stack reducer may be technically feasible; however, evaluation of the stack structure would be required to confirm it can accommodate an additional section of stack. The

[1] It cannot be determined if any of these contaminants actually are emitted because they are not detectable in any testing that could be performed.

use of a coalescing fiberbed system is potentially a technically feasible add-on control device solution for the First Run Down Mill and existing demister system and is being investigated further. However, the estimated cost-effectiveness of this add-on control option ranges from $1.3 to $1.8 million per ton of contaminant removed.

In summary, the following factors impact the assessment of T-BACT for the First Run Down Mill:

- Revere has instituted effective process controls to the extent practical
- Revere has conducted initial evaluations of coolant alternatives, and each presents challenges that would need to be further evaluated before any product trials could occur. Machine trials of a coolant last 4-6 months for a full cycle.
- The First Run Down Mill is equipped with a mist eliminator to minimize emissions
- The three target constituents have low volatility and, therefore, estimated emissions may be overly conservative (on the high side)
- There is a lack of specific sampling and analytical methods for the target constituents
- The interim AGCs assigned by NYSDEC have built-in safety factors of 10x and 100x due to a lack of available toxicological information and, thus, are overly conservative
- Predicted impacts of the three target constituents are less than NYSDEC's published *de mimimis* AGC of 0.1 µg/m^3
- It is doubtful that an air pollution control manufacturer will provide a removal efficiency guarantee for the target compounds given the lack of information on these chemicals and the inability to quantify their physical state (*e.g.,* aerosol, solid) or their present concentration/mass
- The estimated cost of removing approximately 665 combined pounds per year of the three target contaminants (540 pounds for the Commissioning Plan operating scenario) is $1.3 to $1.8 million per ton of contaminant removed.

For these reasons, this evaluation concludes that the 1721 First Run Down Mill has T-BACT for emissions of the three specified contaminants, since no other alternatives could be demonstrated as feasible. Considered alternatives were either not technically feasible or not economically feasible.

2. INTRODUCTION

2.1 Need for T-BACT analysis

Table 4 in Part 212-2.3(b) requires various levels of control for air emissions that are non-criteria air contaminant gases and liquid particulate emissions, regardless of the Environmental Rating (ER), and solid particulate emissions with an ER of A or D based on the Emission Rate Potentials (ERPs) and ERs of the compounds emitted. As an alternative to the specified levels of control, Part 212 allows the emission source to apply T-BACT.

For the First Run Down Mill, Part 212 requires the following levels of control, or T-BACT, for each of the listed contaminants.

Table 1. Summary of Contaminate ERP (lb/hr), Environmental Rating, & Part 212 Control Requirement

Contaminant	CAS No.	ERP (lb/hr)	Actual Hourly Emission Rate (lb/hr)	Proposed Environmental Rating	Part 212 Control Requirement
Emission Unit U-ROLL1, First Run Down Mill, Emission Point 00029					
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	0.633	0.570	B	Guideline Concentration*
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	0.0352	0.0317	B	Guideline Concentration*
Amines, tallow alkyl, ethoxylated	61791-26-2	0.0211	0.0190	B	Guideline Concentration*
Propane-1,2-diol	00057-55-6	0.0211	0.0190	B	Guideline Concentration*
Sulfonic acids, petroleum, sodium salts	68608-26-4	0.0211	0.0190	B	Guideline Concentration*
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	0.0211	0.0190	B	Guideline Concentration*
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	0.0211	0.0190	B	Guideline Concentration*
1,2-Benzisothiazol-3(2H)-one	02634-33-5	0.00211	0.00190	B	Facility-wide annual emissions are below the non-HTAC 100 lb/yr threshold
Confidential Ingredient	Trade Secret #8	0.0704	0.0633	B	Guideline Concentration*

* Use air dispersion modeling to demonstrate that the maximum offsite air concentration is less than the applicable short-term and/or annual guideline concentration (SGC and AGC, respectively).

For the contaminants subject to Guideline Concentration as the control requirement, air dispersion modeling was conducted in accordance with a modeling protocol approved by NYSDEC. As discussed in the modeling report for the permit application (see Attachment E in the renewal application) all but three of the First Run Down Mill contaminants have modeled impacts that are less than their respective SGCs and AGCs. The three contaminants with modeled impacts that exceed the conservative interim AGCs assigned by NYSDEC are shown in the following table. Since these contaminants do not currently have the specified levels of control, a T-BACT review is required. Note that, based on modeling performed for the Commissioning Plan, only two contaminants have modeled impacts that are above their respective SGCs and AGCs.

Table 2. Summary of Dispersion Modeling Results for the First Run Down Mill Contaminants with an Exceedance

Contaminant	CAS No.	Actual Hourly Emission Rate (lb/hr)		Averaging Period	NYSDEC-Assigned Interim SGC/AGC (μg/m³)	Predicted Concentration (μg/m³) / % of SGC/AGC	
		Updated Permit Application	Commissioning Plan			Updated Permit Application	Commissioning Plan
Emission Unit U-ROLL1, Emission Point 00029							
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	0.0317	0.0171	1-Hour	--	0.812 / --	0.812 / --
				Annual	0.01	0.0424 / 424 %	0.0230 / 230 %
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	0.0190	Modeling Not Required	1-Hour	--	0.486 / --	-- / --
				Annual	0.01	0.0254 / 254 %	-- / --
Confidential Ingredient	Trade Secret #8	0.0633	0.0343	1-Hour	--	1.62 / --	1.62 / --
				Annual	0.001	0.0848 / 8,481 %	0.0459 / 4,591 %

Process changes, material substitution, stack changes, and add-on control options were considered as possible means of reducing emissions and evaluated for technical and economic feasibility. This document summarizes the results of these analyses and recommends T-BACT for the First Run Down Mill, EP 00029.

2.2 General facility description

The Revere facility occupies approximately 77.7 acres of land in Rome, New York. The plant is located within a diverse area and borders other manufacturing, commercial, and residential properties. Key process operations at the facility are copper melting, rolling, cutting/shaving, annealing, and galvanizing.

2.3 Emission source description

High-grade post-consumer copper is melted in casting furnaces to produce copper ingots and cakes, which are rolled in five rolling mills. The First Run Down Mill is a cold rolling mill that receives copper coils from approximately 3/8 inches in thickness to approximately 0.090 inches. There is no heat input to this process; however, the rolling process increases the copper coil's temperature to approximately 300 °F via friction with the roller. The mill uses a coolant that is a mixture of Rodshield 68 (QH Everoll A 9883) and water. The coolant is sprayed onto the copper during the rolling process. Aerosolized coolant is captured and routed to a Steinhorst Mist Eliminator and then to EP 00029.

3. T-BACT METHODOLOGY

This section describes the general methodology used to identify T-BACT for the First Run Down Mill EP.

3.1 Approach

The first step in the T-BACT evaluation was to quantify the emissions from the First Run Down Mill. Details are discussed in Section 4.

Next, potential emission control alternatives were identified. The types of control alternatives considered included:

- Changes to the process generating the air emissions
- Reformulation using lesser amounts of the coolant currently in use or different coolants
- Stack modifications to improve dispersion
- Use of add-on control devices.

The strategy was to first consider process change alternatives. Process changes were given the highest priority because they may prevent the emissions from occurring in the first place.

After process changes were evaluated, material substitution and add-on control alternatives were evaluated. It is important to note that substitution of another material, even if deemed technically feasible without substantial disruption or modification to the process, may not significantly reduce overall emissions. Also, add-on control devices typically consume energy and generate waste streams that are ultimately released to the environment or must be further treated prior to release.

Emission reductions, costs, and other factors as noted above were evaluated for each technically feasible control option to identify T-BACT for the First Run Down Mill. For each alternative, an overall cost per ton of emissions controlled was estimated by dividing the estimated annualized cost of that control by the total controlled annual emissions of the specific contaminants requiring T-BACT. The annualized costs account for the operating, maintenance, utility, and capital recovery costs for each particular control option.

Following the evaluation of emission control alternatives, a quantitative residual risk evaluation was performed in accordance with DAR-1.

4. BASELINE EMISSIONS

Emission factors used in the past to estimate emissions from the First Run Down Mill were based on particulate matter (PM) testing conducted in 2001 and that testing did not include particle size distribution (PSD) analysis. As a result, Revere initiated source testing (for engineering purposes) in May 2023 to develop updated emission rates for five emission sources including the First Run Down Mill. The First Run Down Mill's post-control condensable PM emission rate from the May 2023 test program was used to develop updated emission rates for the individual constituents contained in the coolant used in the mill, based on their relative concentrations in the raw material.

It is important to note that the three constituents for which this T-BACT analysis has been developed are not standard analytes using traditional environmental sampling and analytical methods. In other words, without significant method development efforts, first-level approximations (*i.e..,* using the constituent concentrations of the coolant based on the Safety Data Sheet, multiplied by the condensable fraction of PM test results) were necessary to estimate emissions of these potential air contaminants.

It is also worth noting that these three constituents are high molecular weight compounds and are unlikely to be particularly volatile and potentially less likely to become aerosolized in comparison to more volatile constituents in the coolant. Furthermore, these materials are used in dilute concentrations within the mill coolant. Thus, annual emissions of these constituents are limited and possibly overstated, as shown in Table 3 below.

Table 3. Summary of Estimated Emissions for the First Run Down Mill Contaminants with an Exceedance

Contaminant	CAS No.	Actual Hourly Emission Rate (lb/hr)	Actual Annual Emissions[(a)] (lb/yr)	Potential Annual Emissions (lb/yr)
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	0.0317	186 / 150	277
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	0.0190	111 / 90	166
Confidential Ingredient	Trade Secret #8	0.0633	371 / 300	555
Total:			668 / 540	998

Notes:
(a) Actual annual emissions shown reflect two operating scenarios: future operations once the new permit is issued followed by estimated actual emissions for the Commissioning Plan.

5. CONTROL OPTIONS CONSIDERED

5.1 Process changes

In the First Run Down Mill, the coolant mixture is sprayed onto the copper that is moved through the mill. The spray methodology currently in use prevents heat generation, which is essential to the rolling process. Revere has not identified different methodologies for applying the coolant onto the copper that will meet the process cooling demands. Therefore, a change to the coolant delivery system is not technically feasible.

Revere has considered whether the coolant could be used in a more dilute solution. The concentration currently in use is only 1.5% in a 7,000-gallon tank (105 gallons mixed with City water). Any further dilution would not provide an effective level of cooling and, therefore, is not technically feasible.

Revere is investigating with the vendor (Quaker Houghton) as to whether the formulation can be changed such that the concentrations of the constituents with modeled exceedances are reduced in the product. A response to this inquiry is still pending. However, any change to the formulation, including changing relative concentrations of ingredients in the mixture, would need to be evaluated by Revere to confirm the change allows the facility to meet its product quality requirements. The change of a coolant formulation must be carefully considered. Changeout of the coolant costs $40,000, and different/reformulated coolant can result in staining or corrosion on the copper, and it also has potential to ruin the surface of the rolling coils.

Based on Revere's evaluation of potential process changes, none are considered by Revere to be technically feasible at this time.

5.2 Material substitution and reformulation

Coolant selection is based on review of the product with the supplier and their recommendations for application, and, ideally, results of the product's use at other metal rolling facilities. Stain testing can be performed with base copper samples to confirm that staining of finished material is not a concern, but rolling lubrication performance cannot be tested until the coolant is trialed in the machine. The cost of a coolant change is approximately $40,000 including cost of products and services.

Revere has conducted only one product trial in the last 7 years. This trial was completed by consulting heavily with Houghton (prior to Quaker Houghton merger), whose chemists in Spain conducted research. Following several months of formulation work and stain testing with a product similar to the QH Everoll, Revere conducted a trial in the 1723 Reversing mill. Revere experienced a premature failure due to a buildup on the shapemeter and rolls that transferred to the copper strip. Therefore, the Houghton product was not further considered.

The following products are considered by Revere to be possible alternatives to QH Everall 9883:

- **Chemetall 4020EB** – This is a fully synthetic rolling oil that is to be used with antimicrobial agents/measures

Benefits:

- Composition of the product is stated on the Safety Data Sheet (SDS) (*i.e.,* no proprietary ingredients)
- Product contains benzisothiazolinone (an isothiazolinone derivative), which is present in the Kathon additive and, therefore, it may have some level of biostability
- Contains a surfactant/lubricant additive/corrosion inhibitor (CAS 4500-29-2) that is not listed in the DAR-1 tables but does not have any hazard indicators.

Challenges:

- Fully synthetic oils tend to see more fungal growth than other types of oils
- When heated via mechanical rolling, may release toxic nitrous oxides
- may release toxic nitrous oxides
- Contains constituents that are not listed in the DAR-1 tables, including a benzisothiazolinone, and isothiasolinones are known to be hazardous

Unknowns:

- Revere does not know how much antimicrobial agent is needed to keep the system stable, the life cycle of the coolant, and what/if how much staining might occur on the copper surface, thereby resulting in poor quality products

- **<u>35052PK</u>** – A Semi-synthetic rolling oil used with antimicrobial agents/measures

Benefits:

- Contains a vegetable oil derived polymer that is used in metalworking fluids as an anti-mist. This might help reduce particulate matter emissions.
- Vegetable oils are more environmentally friendly than mineral oils

Challenges:

- Contains diethanolamine, a hazardous air pollutant (HAP)

Unknowns:

- Revere does not know how much antimicrobial additive is needed to keep the system stable, the life cycle of the coolant, and what/if how much staining might occur on the copper surface, thereby resulting in poor quality products

- **<u>Quaker-Houghton Everoll C 2923</u>** – A soluble oil that would need antimicrobial agents/measures

Benefits:

- Mainly contains a petroleum derivative that is not listed in DAR-1

Challenges:

- No other ingredients are listed, so we do not know what other constituents might be included. Manufacturer did not provide a complete composition list of constituents.

Unknowns:

- Revere does not know how much antimicrobial additive is needed to keep the system stable, the life cycle of the coolant, and what/if how much staining might occur on the copper surface, thereby resulting in poor quality products

In summary, for each of the potential alternative products under consideration, Revere has identified possible benefits and challenges. Provided one or more of the alternative products is not found to contain unlisted constituents that would be considered equally or more toxic than the constituents in QH Everall 9883, Revere would need to evaluate the technical feasibility of replacing QH Everall 9883 in the First Run Down Mill by conducting lab-scale and then full-scale trials to assess antimicrobial additive requirements, coolant life cycle, and quality concerns such as staining.

These efforts are not guaranteed to result in acceptable air quality impacts in accordance with DAR-1 requirements and Revere estimates they would cost at least $40,000. Therefore, the use of alternative products is not considered technically feasible at this time.

5.3 Stack modifications

Modifications to the First Run Down Mill stack, EP 00029, to improve dispersion were considered. The outlet of EP 00029 is approximately 60 feet above ground level and 6 feet in diameter and has an exhaust velocity of 36 feet per second (fps). Most of the other rolling mills at the facility have exhaust velocities closer to 60 fps. Therefore, two options were considered that would increase the First Run Down Mill exhaust velocity to approximately 60 fps: installing a larger fan to increase the exhaust flow rate and reducing the outlet diameter.

A larger fan would increase the volume of air moving through the mist eliminator. An increase in exit velocity from 36 to 60 fps equates to an increase in exhaust flow rate of from approximately 61,000 cubic feet per minute (cfm) to over 100,000 cfm, and this higher air flow rate likely would exceed the mist eliminator's inlet design capacity. For this reason, installation of a larger fan is not considered a technically feasible option.

Installation of a stack reducer may be technically feasible. However, evaluation of the stack structure would be required to confirm it can accommodate the weight of an additional section of stack. Another potential challenge is that the existing stack has a device on top to collect liquids along with heat-traced drain piping. While a detailed drawing of the stack is not currently available, it appears it may be complicated to add to the existing stack configuration, especially given that the work would be done at 60 feet above grade level.

Modeling was performed to evaluate the extent to which an increase in exhaust velocity to 60 fps would reduce predicted impacts from the First Run Down Mill stack. The annual modeled impacts using the Commissioning Plan emission rates and stack changes are presented in Table 4. The Stack Extender increased the stack exhaust velocity from 36 fps to 60 fps and increased the stack height by 1 foot. As shown, there is small improvement especially given the remaining uncertainty in the technical feasibility of a stack reducer. For these reasons, stack modifications are not considered materially feasible.

Table 4. Summary of Percent of AGC Exceedance for the First Run Down Mill Contaminants with and without a Stack Extender

Contaminant	CAS No.	Predicted Concentration (µg/m^3) / Percent of AGC without Stack Extender (Commissioning Plan Emission Rates)	Predicted Concentration (µg/m^3) / Percent of AGC with Stack Extender (Commissioning Plan Emission Rates)
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	0.0232 / 232%	0.0207 / 207%
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	0.0140 / 140%	0.0125 / 125%
Confidential Ingredient	Trade Secret #8	0.0465 / 4,645%	0.0414 / 4,143%

5.4 Add-on controls

An initial add-on control screening was performed to identify potentially feasible and demonstrated technologies. This screening was intended to eliminate technologies that were clearly inappropriate for the emission source of interest. Potential technologies for screening were derived from available references, including:

- *Handbook on Control Technologies for Hazardous Air Pollutants*, U.S. Environmental Protection Agency (EPA/625/6-91/014), June 1991
- *Office of Air Quality Planning and Standards (OAQPS) Control Costs Manual, EPA*, Sixth Edition, January 2002
- Control equipment manufacturers
- Technical journals, reports, newsletters, and air pollution control seminars

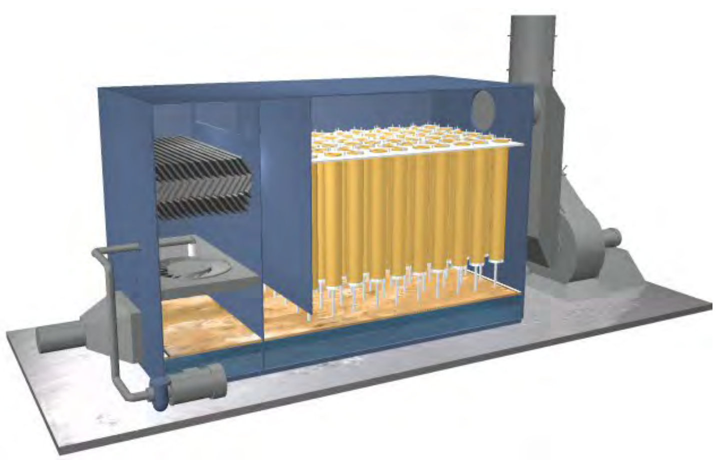
Potential add-on air pollution control device options were evaluated to identify control options that would be technically feasible for the First Run Down Mill. Based on the outlet emissions test data and air dispersion modeling results, and since the emissions result from metal-working fluids, a wet control solution is preferred. The wet control solutions considered as potential options for the First Run Down Mill are:

- Venturi scrubber
- Coalescing fiberbed filter
- Wet electrostatic precipitator

Venturi scrubbers are not typically used for strictly aerosol removal.

The use of a coalescing fiberbed system (see below figure) as a potentially technically feasible add-on control device solution for the First Run Down Mill and existing demister system is being investigated further. The coalescing fiberbed system is highly efficient at capturing aerosol particles with some vendors publishing 99.5% removal of particles larger than 5 microns. Additional evaluation of this technology and specific emissions profile with vendors would be needed to validate the technical feasibility of this control device option.

As noted earlier, there are not prescribed sampling or analytical methods for the three constituents under investigation. Thus, equipment manufacturer performance guarantees would be limited to surrogate air contaminants (*e.g.,* liquid aerosols) and may not represent the true control of the target air contaminants.



A wet electrostatic precipitator is considered a technically feasible alternative but will have a higher capital expenditure and higher operating expenses than the coalescing fiberbed system.

5.4.1 Exhaust and emission profile

First Run Down Mill Exhaust and Emission Profile is shown below:

- Exhaust flow – Approximately 63,000 actual cubic feet per minute (acfm)
- Estimated delta pressure (dp) – 15” water column (subject to engineering)
- Emission Profile – see Table 3

5.4.2 Cost of controls

Order of magnitude cost estimates for a coalescing fiberbed system are as follows:

Capital Cost Range: $350,000 – $450,000 (subject to design)
Capital Cost Range, ID Fan: $100,000 – $150,000 (subject to design)
Operating Costs: Approximately $30 – $40/hr in utilities (subject to final design)

Considering the potential capital costs alone for a coalescing fiberbed system, and assuming 99.5% removal efficiency, the cost-effectiveness of this add-on control option ranges from $1.3 to $1.8 million per ton of contaminant removed.

As noted previously, a wet electrostatic precipitator is considered a technically feasible alternative but will have a higher capital expenditure and higher operating expenses than a coalescing fiberbed system.

6. RESIDUAL RISK EVALUATION

The qualitative residual risk was calculated for the First Run Down Mill for the sum of T-BACT subject air contaminant emissions. The approach to the residual risk evaluation depends on whether subject air contaminants are carcinogenic or noncarcinogenic; however, given that limited toxicology information was found to be available for the three T-BACT subject contaminants, their carcinogenicity is unknown.

For carcinogenic contaminants, the residual cancer risk is the summation of the risk estimate for each individual air contaminant. The risk estimate for each air contaminant is calculated by dividing the annual maximum predicted concentration (from AERMOD) by the contaminant specific AGC. For non-carcinogenic contaminants, the residual non-cancer risk, or hazard index (HI), is the summation of the hazard quotient (HQ) for each individual air contaminant. The HQ for each air contaminant is calculated by dividing the annual maximum predicted concentration (from AERMOD) by the contaminant specific AGC.

The residual risk for the three T-BACT subject contaminants is calculated as follows:

$Risk_T$ = $Risk_1$ + $Risk_2$ + $Risk_3$
$Risk_T$ = Total Risk
$Risk_1$ = annual maximum predicted concentration for the Poly(oxy-1,2-ethanediyl) compound ÷ Poly(oxy-1,2-ethanediyl) compound AGC
$Risk_2$ = annual maximum predicted concentration for Fatty acids, C18-unsaturated phosphates ÷ Fatty acids, C18-unsaturated phosphates AGC
$Risk_3$ = annual maximum predicted concentration for Trade Secret #8 ÷ Trade Secret #8 AGC

The residual risk calculations are provided in the table below.

Table 5. Summary of Residual Cancer Risk from First Run Down Mill

Individual Contaminant	CAS No.	Carcinogen / Non-carcinogen	Maximum Annual Impact ($\mu g/m^3$)	ACG[a] ($\mu g/m^3$)	$Risk_i$[b]	$Risk_T$[c]
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	Unknown	0.0424	0.01	4.24	91.6
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	Unknown	0.0254	0.01	2.54	
Trade Secret	Trade Secret #8	Unknown	0.0848	0.001	84.8	

Notes:
(a) The AGCs reflect interim AGCs assigned by NYSDEC ATS.
(b) $Risk_i$ = Individual risk
(c) $Risk_T$ = Total risk, sum of individual risks

The total risk ($Risk_T$) is greater than 10, which is the acceptable residual risk management value for carcinogens, and it also is greater than 2, which is the acceptable residual risk management value for non-carcinogens. However, as explained by NYSDEC ATS in its communication of the interim AGCs for these constituents, there was limited to essentially no toxicological information available for these constituents; therefore, the interim AGCs assigned by NYSDEC are considered highly conservative [2].

For the calculation of residual cancer risk to yield an acceptable result where the interim AGC is 0.01 µg/m^3, the maximum annual predicted impact of that constituent would need to be less than 0.1 µg/m^3. For the calculation of residual cancer risk to yield an acceptable result where the interim AGC is 0.001 µg/m^3, the maximum annual predicted impact of that constituent would need to be less than 0.01 µg/m^3.

For the calculation of residual non-carcinogen risk to yield an acceptable result where the interim AGC is 0.01 µg/m^3, the maximum annual predicted impact of that constituent would need to be less than 0.02 µg/m^3. For the calculation of residual non-carcinogen risk to yield an acceptable result where the interim AGC is 0.001 µg/m^3, the maximum annual predicted impact of that constituent would need to be less than 0.002 µg/m^3. NYSDEC's assignment of 10X and 100X safety factors applied to the de minimis AGC due to "uncertainties in the toxicological database" and "lack of information in the toxicological database", respectively, makes the possibility of a successful residual risk demonstration highly unlikely.

[2] The Kathon SDS indicates an Oral LD50 value for Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS 57635-48-0) of > 2,000 mg/kg (Rat). We request that NYSDEC consider this information if it hasn't already as part of its toxicological review.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Process changes, reformulation, stack modifications, and add-on control alternatives were evaluated as potential T-BACT options for the First Run Down Mill. Process changes and material substitution and reformulation were not feasible for reasons described in Section 5. A coalescing fiberbed system and wet electrostatic precipitator were found to be technically feasible add-on control options; however, the cost-effectiveness of the least costly add-on control option ranges from \$1.3 to \$1.8 million per ton of contaminant removed.

7.2 T-BACT recommendation

The following factors impact the assessment of T-BACT for the First Run Down Mill:

- Revere has instituted effective process controls to the extent practical
- Revere has conducted initial evaluations of coolant alternatives, and each has challenges that would need to be vetted with further evaluation before they could be trialed at the facility
- The First Run Down Mill is equipped with a mist eliminator to minimize emissions
- The three target constituents have low volatility and, therefore, estimated emissions may be overly conservative (on the high side)
- There is a lack of specific sampling and analytical methods for the target constituents
- The interim AGCs assigned by NYSDEC have built-in safety factors of 10x and 100x due to a lack of available toxicological information and, thus, are overly conservative
- Predicted impacts of the three target constituents are less than NYSDEC's published de mimimis AGC of 0.1 µg/m3
- It is doubtful that an air pollution control manufacturer will provide a removal efficiency guarantee for the target compounds given the lack of information on these chemicals and the inability to quantify their physical state (e.g., aerosol, solid) or their present concentration/mass
- The estimated cost of removing approximately 665 combined pounds per year of the three target contaminants (540 pounds for the Commissioning Plan operating scenario) is \$1.3 to \$1.8 million per ton of contaminant removed.

For these reasons, this evaluation concludes that the 1721 First Run Down Mill has T-BACT for emissions of the three specified contaminants, since no other alternatives could be demonstrated as feasible. Considered alternatives were either not technically feasible or not economically feasible.

ATTACHMENT G
FULL ENVIRONMENTAL ASSESSMENT FORM

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Air State Facility Permit renewal, boiler fuel oil conversion project (i.e., #6 fuel oil to #2 fuel oil) and furnace replacement		
Project Location (describe, and attach a general location map): Revere Copper Products, Inc., 1 Revere Park, Rome, Oneida County, NY (See Figure 1)		
Brief Description of Proposed Action (include purpose or need): Revere Copper Products, Inc. (Revere) seeks to renew the existing Air State Facility Permit (DEC ID 6-3013-00091) for the Rome, NY facility. In addition to the permit renewal, Revere is seeking to make the following modifications: -change the boiler backup fuel from #6 fuel oil to #2 fuel oil (Note that the Petroleum Bulk Storage Tank Registration, Site No. 6-129550 has been modified to reflect this change in tank service.) -replace an old casting furnace with a new induction furnace The proposed changes will not impact the footprint of the existing buildings. Emissions resulting from these changes do not trigger New Source Review requirements.		
Name of Applicant/Sponsor: David Ozog	Telephone: 315-338-2160 E-Mail: dozog@reverecopper.com	
Address: 1 Revere Park		
City/PO: Rome	State: NY	Zip Code: 13440
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity		If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees	☐Yes ☑No		
b. City, Town or Village Planning Board or Commission	☐Yes ☑No		
c. City, Town or Village Zoning Board of Appeals	☐Yes ☑No		
d. Other local agencies	☐Yes ☑No		
e. County agencies	☐Yes ☑No		
f. Regional agencies	☐Yes ☑No		
g. State agencies	☑Yes ☐No	New York State Department of Environmental Conservation - see Attachment A	2/8/2023 (air permit)
h. Federal agencies	☐Yes ☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No
iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No
The proposed action will occur in the interior of existing buildings. See Attachment A.

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):
Remediaton Sites:633007, Remediaton Sites:633008, NYS Heritage Areas:Mohawk Valley Heritage Corridor

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
I-G General Industrial, R-2 Single Family Residential, and NA Natural Areas

b. Is the use permitted or allowed by a special or conditional use permit? Not Applicable ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? ______

C.4. Existing community services.

a. In what school district is the project site located? Rome City School District

b. What police or other public protection forces serve the project site?
City of Rome Police Department, New York State Police Department - Troop D-Zone 1, Oneida County Sheriffs Department

c. Which fire protection and emergency medical services serve the project site?
City of Rome Fire Department

d. What parks serve the project site?
Riverside Park is nearby as well as an adjacent park (Pinti Field) that includes a baseball field, swimming pool, outdoor track, and skatepark.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial.

b. a. Total acreage of the site of the proposed action? 77.7 acres
b. Total acreage to be physically disturbed? 0 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 77.7 acres

The proposed action will occur in the interior of existing buildings.

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % ______ Units: ______

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? ______
iv. Minimum and maximum proposed lot sizes? Minimum ______ Maximum ______

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: ______ months
ii. If Yes:
- Total number of phases anticipated ______
- Anticipated commencement date of phase 1 (including demolition) ______ month ______ year
- Anticipated completion date of final phase ______ month ______ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: ______

f. Does the project include new residential uses? ☐ Yes ☑ No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	___	___	___	___
At completion of all phases	___	___	___	___

g. Does the proposed action include new non-residential construction (including expansions)? ☐ Yes ☑ No
If Yes,
i. Total number of structures ___________
ii. Dimensions (in feet) of largest proposed structure: ________height; ________width; and _______ length
iii. Approximate extent of building space to be heated or cooled: ______________________ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No
If Yes,
i. Purpose of the impoundment: ________________________________
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: ________________________________
iii. If other than water, identify the type of impounded/contained liquids and their source. ________________________________
iv. Approximate size of the proposed impoundment. Volume: ____________ million gallons; surface area: ____________ acres
v. Dimensions of the proposed dam or impounding structure: ________ height; _______ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): ________________________________

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐ Yes ☑ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
The proposed action will occur in the interior of existing buildings.
If Yes:
i. What is the purpose of the excavation or dredging? ________________________________
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): ________________________________
- Over what duration of time? ________________________________

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. ________________________________
iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No
If yes, describe. ________________________________
v. What is the total area to be dredged or excavated? ______________________acres
vi. What is the maximum area to be worked at any one time? ______________________ acres
vii. What would be the maximum depth of excavation or dredging? ______________________ feet
viii. Will the excavation require blasting? ☐ Yes ☐ No
ix. Summarize site reclamation goals and plan: ________________________________

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No
The proposed action will occur in the interior of existing buildings.
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): ________________________________

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:
- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes: See Attachment A
i. Total anticipated water usage/demand per day: 400 gallons/day
ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:
- Name of district or service area: City of Rome
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:
- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No
If, Yes:
- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _______ gallons/minute.

d. Will the proposed action generate liquid wastes? See Attachment A ☑ Yes ☐ No
If Yes:
i. Total anticipated liquid waste generation per day: 400 gallons/day
ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
See Attachment A

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:
- Name of wastewater treatment plant to be used: The City of Rome Water Pollution Control Facility
- Name of district: City of Rome
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: ______________________

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:
- Applicant/sponsor for new district: ______________________
- Date application submitted or anticipated: ______________________
- What is the receiving water for the wastewater discharge? ______________________

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

See Attachment A

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: ______________________

See Attachment A

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐ Yes ☑ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. ______________________

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: ______________________
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☐ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☐ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? See Attachment A ☑ Yes ☐ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

The facility will continue to operate site vehicles such as trucks and forklifts, and delivery/shipping vehicles will continue to serve the facility.

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

The proposed action does not involve construction.

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Revere seeks to replace a casting furnace and change the boiler backup fuel from #6 fuel oil to #2 fuel oil.

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☑ Yes ☐ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☑ No

ii. In addition to emissions as calculated in the application, the project will generate:

No additional emissions anticipated

- ___________Tons/year (short tons) of Carbon Dioxide (CO_2)
- ___________Tons/year (short tons) of Nitrous Oxide (N_2O)
- ___________Tons/year (short tons) of Perfluorocarbons (PFCs)
- ___________Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- ___________Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- ___________Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☑Yes ☐No

If Yes:

i. Estimate methane generation in tons/year (metric): ______

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): None

---

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

---

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No See Attachment A

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend
☐ Randomly between hours of ______ to ______.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): ______

iii. Parking spaces: Existing ______ Proposed ______ Net increase/decrease ______

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

---

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: ______
Additional demand is estimated to be a 16.2% increase for the facility overall in comparison to 2022 use.

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
Grid/local utility (National Grid)

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☑Yes ☐No
See Attachment A

---

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: Not applicable
- Saturday: ______
- Sunday: ______
- Holidays: ______

ii. During Operations:

- Monday - Friday: 24/day
- Saturday: 24/day
- Sunday: 24/day
- Holidays: Depending on production needs

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

______

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: ______

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

______

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: ______

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: ______

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☑ Yes ☐ No

See Attachment A

If Yes:

i. Product(s) to be stored No. 2 fuel oil

ii. Volume(s) ______ per unit time ______ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: ______

No new storage facilities. Two existing 40,000-gallon aboveground No. 6 fuel oil storage tanks have been converted to No. 2 fuel oil storage.

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

______

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

See Attachment A

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: Not Applicable tons per ______ (unit of time)
- Operation : ______ tons per ______ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Not Applicable
- Operation: Revere uses scrap copper (non-consumer) as feedstock for the manufacturing process. Copper pieces generated during the manufacturing process is returned to the casting furnaces for re-melt.

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Not applicable
- Operation: No on-site disposal

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): ______

ii. Anticipated rate of disposal/processing:

- ________ Tons/month, if transfer or other non-combustion/thermal treatment, or
- ________ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: ______ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: ______

ii. Generally describe processes or activities involving hazardous wastes or constituents: ______

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: ______

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: ______

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility: ______

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): ______

ii. If mix of uses, generally describe:

The area consists of industrial and residential land use.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	Approx. 48.9	48.9	0
• Forested	19.2	19.2	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	7.6	7.6	0
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)	2	2	0
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: ______			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No
i. If Yes: explain:

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No
If Yes,
i. Identify Facilities:
Here We Grow Again Creative Learning Center.

e. Does the project site contain an existing dam? See Attachment A ☑ Yes ☐ No
If Yes:
i. Dimensions of the dam and impoundment:

- Dam height: 5 feet
- Dam length: 70 feet
- Surface area: 2 acres
- Volume impounded: 2.6069 million (4 ft average depth) gallons OR acre-feet

ii. Dam's existing hazard classification: Not Known
iii. Provide date and summarize results of last inspection:
Not a public dam - Revere inspects it visually and implements repairs as needed

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation:

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities:
None

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑ Yes ☐ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:
The facility is a large-quantity generator of hazardous waste, which is shipped off-site by authorized transporters to authorized treatment, storage, and disposal facilities.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database Provide DEC ID number(s): 2203682
☑ Yes – Environmental Site Remediation database Provide DEC ID number(s): 633007, 633008
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:
633007: An on-site lagoon that was historically used to store acid wastes was lined with 30 mil hypalon liner and was closed in 1980. The area is now filled and capped. (Closed)

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No
If yes, provide DEC ID number(s): V00077, 633037, B00023, B00010, E633060, E63306...

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

2203682: A 10-gallon hydraulic oil spill occured on 7/27/2022 and the spill is currently not closed. 633007: The area is filled and capped, no environmental problems expected. 633008: The site is abandoned - No environmental stress was noted. V00077, 633037, B00023, and B00010: All effected media has been remediated and no further action is required. E633060: The site is capped with a two foot soil cover system meeting Restricted Residential criteria.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: ______
- Describe the type of institutional control (e.g., deed restriction or easement): ______
- Describe any use limitations: ______
- Describe any engineering controls: ______
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: ______

E.2. Natural Resources On or Near Project Site

The proposed action will occur in the interior of existing buildings.

a. What is the average depth to bedrock on the project site? > 6.56 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? ______%

c. Predominant soil type(s) present on project site:

Urban land	58.8 %
Alton-Urban land complex	19.8 %
Alton gravelly loam	14.9 %

d. What is the average depth to the water table on the project site? Average: >6.56 feet

e. Drainage status of project site soils:
☑ Well Drained: 20.1 % of site
☐ Moderately Well Drained: ____% of site
☑ Poorly Drained 9.4 % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: ____% of site
☐ 15% or greater: ____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: ______

h. Surface water features. The proposed action will occur in the interior of existing buildings.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

See Attachment A

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 877-1 Classification C
- Lakes or Ponds: Name ______ Classification ______
- Wetlands: Name Federal Waters, NYS Wetland, Federal Waters, Fe... Approximate Size NYS Wetland (in a...
- Wetland No. (if regulated by DEC) RO-8

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No
If yes, name of impaired water body/bodies and basis for listing as impaired: ______

i. Is the project site in a designated Floodway? ☑ Yes ☐ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:
i. Name of aquifer: Principal Aquifer

The proposed action will occur in the interior of existing buildings.

m. Identify the predominant wildlife species that occupy or use the project site:

small mammals | birds | amphibians

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): ____________
ii. Source(s) of description or evaluation: ____________
iii. Extent of community/habitat:
- Currently: ____________ acres
- Following completion of project as proposed: ____________ acres
- Gain or loss (indicate + or -): ____________ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No
If Yes:
i. Species and listing (endangered or threatened): ____________

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No
If Yes:
i. Species and listing: ____________

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☑ Yes ☐ No
If yes, give a brief description of how the proposed action may affect that use: ____________
Tributary of the Mohawk River is adjoining the property and is used for fishing

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: ____________

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site? ____________
ii. Source(s) of soil rating(s): ____________

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: ____________

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: ____________
ii. Basis for designation: ____________
iii. Designating agency and date: ____________

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: Eligible property:NOLAN CORP. (NOLAN-JAMPOL, INC.)

iii. Brief description of attributes on which listing is based:

---

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

---

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s):

ii. Basis for identification:

---

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

The proposed action will occur in the interior of the buildings. The North County Trail will not be negatively impacted by the Project.

If Yes:

i. Identify resource: North Country Trail

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): National scenic trail

iii. Distance between project and resource: 0.82 miles.

---

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation:

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

---

F. Additional Information

Attach any additional information which may be needed to clarify your project. See Attachment A

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

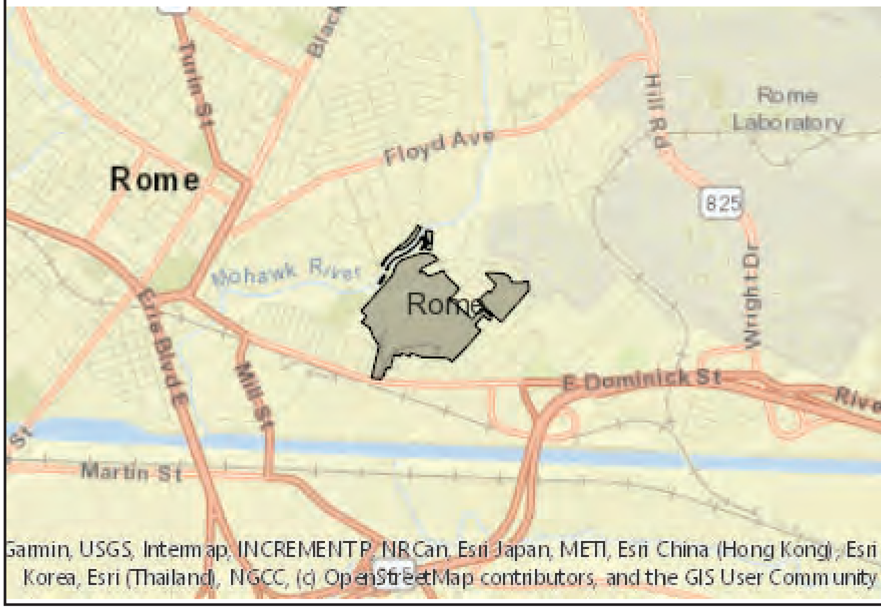
G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name David Ozog Date

Signature Title Lead Env Operation & Facilities Engineer

PRINT FORM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:633007, Remediaton Sites:633008, NYS Heritage Areas:Mohawk Valley Heritage Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	633007, 633008
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	V00077, 633037, B00023, B00010, E633060, E633064, E633065, 633007, 633008
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	877-1
E.2.h.iv [Surface Water Features - Stream Classification]	C

E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):38.2
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	RO-8
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Yes
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:NOLAN CORP. (NOLAN-JAMPOL, INC.)
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Remediation Databases Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at
DECInfoLocator

Administrative Information

Site Name: Revere Copper and Brass, Inc.
Site Code: 633007
Program: Resource Conservation and Recovery
Classification: A
EPA ID Number:

Location

DEC Region: 6
Address: Sixth Street
City: Rome Zip: 13440
County: Oneida
Latitude: 43.2080681
Longitude: -75.436983194
Site Type: LAGOON
Estimated Size: 0.2 Acres

Site Owner(s) and Operator(s)

Current Owner Name: REVERE COOPER AND BRASS, INC.
Current Owner(s) Address: PO BOX 151
ROME,NY, 13440
Current Owner Name: Revere Copper and Brass, Inc.
Current Owner(s) Address: PO BOX 151
ROME,NY, 13440
Owner(s) during disposal: REVERE COOPER AND BRASS, INC.

Hazardous Waste Disposal Period

Site Description

Location and Past Use of the Site: This lined lagoon was built in 1971 with a capacity of 125,000 gallons. The lagoon was used to store acid wastes, and was periodically pumped out by a waste hauler. The Mohawk River is about 800 feet downgradient. The lagoon has been closed since 1980.

The area is now filled and capped. Since the lagoon was lined with a 30 mil hypalon liner environmental problems were not expected.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type

H_2SO_4, H_2O_2

Site Environmental Assessment

Nature and extent of Contamination: No environmental problems are known or suspected since this lagoon had a synthetic liner, and has since been closed.

For more Information: E-mail Us

Refine Current Search

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Environmental Remediation Databases Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at
DECInfoLocator

Administrative Information

Site Name: Revere Copper and Brass, Inc.
Site Code: 633008
Program: State Superfund Program
Classification: N *
EPA ID Number:

Location

DEC Region: 6
Address: Culverton and Mayberry Road
City: Rome Zip:
County: Oneida
Latitude: 43.208931706
Longitude: -75.431260284
Site Type:
Estimated Size: 9 Acres

Site Owner(s) and Operator(s)

Current Owner Name: REVERE COOPER AND BRASS, INC.
Current Owner(s) Address: PO BOX 151
ROME,NY, 13440
Current Owner Name: Revere Copper and Brass, Inc.
Current Owner(s) Address: PO BOX 151
ROME,NY, 13440
Owner(s) during disposal: REVERE COOPER AND BRASS, INC.
Current On-Site Operator: Revere Copper & Brass, Inc.
Stated Operator(s) Address: P.O. BOX 151
ROME,NY 13440

Site Description

This site is an abandoned landfill in a residential area. The nearest residence is approximately 100 feet away. The landfill is not fenced or posted. No environmental stress was noted during the inspection. A Company representative stated that the area was used for the disposal of demolition debris. Residents are served by the City water supply. No documentation was found to indicate that hazardous waste disposed at this site.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
WASTE FROM COPPER SMELTING OPERATION

Site Environmental Assessment

Based on the site visit there are no known environmental problems at this site.

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* **Class N Sites:** "DEC offers this information with the caution that the amount of information provided for Class N sites is highly variable, not necessarily based on any DEC investigation, sometimes of unknown origin, and sometimes is many years old. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine Current Search

SITE LOCATION MAP

FIGURE 1

Revere Copper Products, Inc.
1 Revere Park
Rome, NY 13440

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY

ATTACHMENT A

B. Government Approvals

g. State agencies

New York State Department of Environmental Conservation:

- Air State Facility (ASF) Permit, Permit ID 6-3013-00091/00039 (application submitted 02/08/2023)
- Petroleum Bulk Storage (PBS) Registration, Site No. 6-129550 (Registration merely updated to account for the change in tank service from No. 6 to No. 2 fuel oil)

C.2. Adopted land use plans

a. Land use plans. The site is currently zoned industrial and is occupied by an industrial use. The proposed action is consistent with industrial use.

D. Project Details

D.2. Project Operations

c. Water Demand. Revere anticipates hiring approximately 40 additional workers in connection with the Project. Therefore, the amount of potable water, which is provided by the City of Rome, used may increase. An estimate of 10 gallons/day per person[1] was used to estimate new demand for employee potable water use.

d. Wastewater. Sanitary wastewater may increase as a result of approximately 40 additional workers; the additional wastewater generated by new workers is assumed to equal the estimated new water demand.

f. Air emissions. Sources of air emissions at the facility are discussed in the Air State Facility Permit application, and emissions are estimated in the application based on operating the proposed new casting furnace and the resulting estimated increase in production.

j. Traffic increase. There may be some additional traffic related to additional employees, raw material deliveries, and product shipments but it will not meet the threshold level of trips as described in the workbook.

k. To accommodate the new furnace, two 3805 KVA transformers that are supplied by existing equipment on Revere's island substation were installed at the Cast Shop.

p. Once Revere transitions the No. 6 fuel oil tanks to No. 2 fuel oil, the 3 boilers will fire natural gas as the primary fuel and No. 2 fuel oil will only be fired during natural gas curtailment events and up to 100 hours per year for the purpose of boiler tune-ups and maintenance. No. 2 fuel oil will be stored in two existing aboveground storage tanks. The Petroleum Bulk Storage (PBS) Registration (6-129550) has been updated for this change in tank service.

r. Operation of the casting furnaces results in emissions of particulates that are routed to a baghouse to minimize air emissions. Material captured by the baghouse is shipped offsite as a waste. There will be no change in how the waste is managed.

[1] U.S. EPA Lean & Water Toolkit: Appendix C

E. Site and Setting of Proposed Action
E.1. Land uses on and surrounding the project site
e. Private existing dam. Revere operates a dam to facilitate the water withdrawal from a Mohawk tributary for process and cooling water use at the facility. No additional water withdrawal is expected.

h. Surface water features. A portion of the Mohawk River tributary and associated wetlands are located on the northwest section of the property.

ATTACHMENT H
COMMISSIONING PLAN

Attachment H
Commissioning Plan
Revere Copper Products, Inc.

Revere has developed a plan for commissioning the new 2728 Melting Furnace. The detailed plan is provided in Exhibit H-1 at the end of this attachment. An overview of the commissioning plan, estimated commissioning emissions, and results of air dispersion modeling are provided in this attachment.

Background

In accordance with the Schedule of Compliance issued by New York State Department of Environmental Conservation (NYSDEC), should Revere propose to commission or otherwise initiate the new 2728 Melting Furnace prior to receipt of the Air State Facility (ASF) Permit Modification, Revere is to include for NYSDEC review and approval a temporary commissioning and/or operation plan, which includes sufficient detail to confirm the facility will be in compliance with applicable regulations during operation of the furnace.

Summary of Commissioning Plan

Commissioning of the 2728 Melting Furnace will require close coordination with and involvement of the furnace vendor (Inductotherm), installation vendor (EMSCO), refractory supplier (St. Gobain), and furnace liner vendor (Gradmatic). Commissioning will involve preliminary testing of the furnace to observe functionality, lining the furnace, charging the furnace with copper, and evaluating equipment, software, and refractory functionality. Subsequently, a complete site acceptance test will be performed to ensure every part of the system has been received, installed, and is functioning correctly in accordance with the contract. The duration of furnace commissioning is estimated to be 60 days. Details of the commissioning plan can be found in Exhibit H-1.

Impact on Downstream Processes

Revere has indicated that the lots produced by the 2728 Melting Furnace during the commissioning will only impact certain production machines in the downstream processes. The lots will be directed to the Bar Mill Value Stream and will impact the following operations:

- U-CAST1– 2728 Melting Furnace Vented to Cyclone and Baghouse (EP 00040)
- U-ROLL1 – Hot Mill Vented to Mist Eliminator (EP 00030)
- U-ROLL1 – First Run Down mill to Mist Eliminator (EP 00029)
- U-OVER1 – Overhauler Vented to Wet Scrubber (EP 00031)
- U-ANNE1 – Tray Style/coil Anneal (EP 00180/00190)
- U-FURN1 Walking Beam (Cake Heat) Furnace – Natural Gas Emissions Only

The estimated operating hours of the above equipment that will result from the lots produced by the 2728 Melting Furnace are provided in Exhibit H-1.

Estimated Emissions

A facility-wide emission inventory that reflects annual facility operations including the operations directly related to the 60-day commissioning plan is presented in Tables 1 – 16 at the end of this Attachment. This emission inventory is a duplicate of the emission inventory provided in Attachment C of the ASF Permit renewal application with the exception that actual annual operating hours for the equipment are estimated as follows:

- Actual 2023 operating hours recorded by Revere for each emission source are used for the months of January through June
- For the first 30 days of commissioning, the 2728 Melting Furnace will produce an estimated 7 lots of melted copper per week for a total of 28 lots. For the second 30 days of commissioning, the 2728 Melting Furnace will produce an estimated 26 lots of melted copper per week for a total of 104 lots. Revere uses an estimate of 1.35 hours of operating time per lot based on historical operating information. Total operating time for the 2728 Melting Furnace during the 60-day commissioning period is 178.2 hours.

  The hourly PM emission factors used to estimate emissions from the 2728 and 2056 Melting Furnaces (i.e., EP 00040) reflect both furnaces operating simultaneously. Therefore, the maximum operating hours between the two furnaces is used to calculate emissions. Since the 2056 Melting Furnace is projected to operate for more hours during the 60-day commissioning period than the 2728 Melting Furnace, the operating hours for the 2056 Melting Furnace are applied to the emission factor to estimate emissions for EP 00040. This is consistent with Revere's current emissions tracking approach, which is reported annually to NYSDEC.
- For equipment that will process the lots produced by the 2728 Melting Furnace, operating hours during each 30-day commissioning period are estimated as the sum of the June 2023 operating hours and the additional operating hours from processing the new furnace lots
- For equipment that will not process the lots produced by the 2728 Melting Furnace, operating hours during each 30-day commissioning period are estimated to be equivalent to the June 2023 operating hours
- For the remaining 4 months of 2023, operating hours for each emission source are based the maximum monthly hours the source operated during the other eight months of 2023.
- Natural gas use is based on 2022 fuel use with the following unit-specific increases:
  - Cake furnace – 23.3%
  - 1738 Strand Anneal – 23.3%
  - Lee Wilson Bell Anneal – 23.3%
  - Ebner Anneal – 23.3%
  - 1154 Bright Anneal – 4.9%
  - 2587 Galvanizing – 4.9%

  A tabulation of these month-by-month operating hour assumptions for the process operations is provided in Table 17 at the end of this Attachment.

Part 212 Evaluation

Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 212 applies to emission sources and/or emission points associated with a process operation. Upon issuance of a renewal for an existing permit or registration, facilities must evaluate emissions from processes with respect to Part 212. In accordance with 212-1.2(b)(18), combustion installations are not a process operation and are not subject to Part 212. Therefore, combustion sources at the Revere facility have not been included in the Part 212 evaluation. In addition, in accordance with 212-1.4(a) process emission sources that are exempt or trivial under Section 201-3.2 and 201-3.3 are exempt from Part 212 and have not been included in the evaluation.

Process operations at the facility that are subject to Subparts 212-1 and 212-2 include casting furnaces, rolling mills, annealing furnaces, a pickling line, and a zinc/tin galvanizing line. These sources and their associated key parameters pertinent to the Part 212 evaluation are summarized in **Tables 18** and **19** at the end of this Attachment. Contaminants with high, medium, and low toxicity were assigned an initial Environmental Rating (ER) of A, B, and C, respectively. Contaminants that did not have a toxicity provided in NYSDEC's *DAR-1 Guidelines for the Evaluation and Control of Ambient Air Contaminants under Part 212* (issued February 2021) were assigned an initial ER of B. Refer to Attachment D of the renewal application for additional discussion regarding the evaluation of air toxics requirements.

Air Dispersion Modeling

The facility has performed a Part 212 air dispersion modeling evaluation of commissioning emissions and has included the evaluation in Appendix H-1 to this Attachment. The modeling evaluation includes the modeling protocol submitted to NYSDEC on December 1, 2022 and approved with comments via email received on January 9, 2023; NYSDEC's comments on the modeling protocol were incorporated into the modeling performed and are addressed in the modeling report provided in Appendix H-1.

As discussed in the model report, the modeled impacts for PM_{10} and $PM_{2.5}$ are below the respective NAAQS. The results of the air toxics modeling indicate that the maximum predicted concentrations of three of the modeled air contaminants exceed the Annual Guideline Concentrations (AGC) provided by the NYSDEC Air Toxics Section (ATS). None of the modeled air contaminants exceed the Short-term Guideline Concentration (SGC) values in the NYSDEC DAR-1 AGC/SGC tables.

Three contaminants that exceed their respective AGCs are as follows:
- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS# 57635-48-0)
- Fatty acids, C18-unsaturated phosphates (CAS# Trade Secret #6)
- Trade Secret (CAS# Trade Secret #8)

All three of these contaminants are emitted from the First Run Down Mill. None of these contaminants are listed in NYSDEC's DAR-1 AGC/SGC tables, so the ATS provided interim AGC values based on toxicological reviews. The information regarding the toxicities of these contaminants that the ATS was able to find was extremely limited, which resulted in NYSDEC assigning very conservative interim AGC values to these contaminants.

A Toxic – Best Achievable Control Technology (T-BACT) analysis has been included in **Attachment F** of the air permit application for the three air toxics with modeled exceedances.

TABLES

RAMBOLL

TABLES 1 - 16
EMISSION INVENTORY

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
U-COMB1	15 Boiler Room	00004	BR1 Boiler 1	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	42.0 million Btu per hour (MMBtu/hr)	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
		00004	BR2 Boiler 2	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	42.0 MMBtu/hr	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
		00003	BR3 Boiler 3	G01 Combustion - Natural gas F01 Combustion - Fuel oil (back-up)	57.2 MMBtu/hr	Natural gas (primary fuel) No. 2 fuel oil (back-up fuel)[(a)]	6 NYCRR 225-1.2(a)(2) 6 NYCRR 227-1.3(a)
U-CAST1	21 Cast Shop	00039	1799 Holding Furnace	BH1 Process (Baghouse) BP1 Process (By-pass)	---	Copper	6 NYCRR 212
		00039	2443 Melting Furnace	BH1 Process (Baghouse) BP1 Process (By-pass)	---	Copper	6 NYCRR 212
		00040	2056 Melting Furnace	BH2 Process (Baghouse) BP2 Process (By-pass)	---	Copper	6 NYCRR 212
		00040	New 2728 Melting Furnace	BH2 Process (Baghouse) BP2 Process (By-pass)	---	Copper	6 NYCRR 212
		~~00040~~	~~2057 Melting Furnace~~	~~BH1 Process (Baghouse)~~ ~~BP2 Process (By-pass)~~	~~---~~	~~Copper~~	~~6 NYCRR 212~~
		00602	Central Vacuum System	VAC Process	---	Fugitive Dust	6 NYCRR 212
U-FURN1	51 Rolling Mill	00041	1701 Walking Beam Furnace	G02 Combustion	51.8 MMBtu/hr	Natural gas	6 NYCRR 227-1.3(a)
U-OVER1	51 Rolling Mill	00031	1715 Overhauler	OVR Process	---	Copper sheet	6 NYCRR 212
U-ROLL1	51 Rolling Mill	00036	1176 Bliss Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00030	1706 Hot Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00029	1721 First Run Down Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
		00026	1723 Reversing Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
		00025	1724 Z-Mill	ROL Process	---	Copper sheet and metalworking fluid	6 NYCRR 212
U-ANNE1	51 Rolling Mill	00369	1729 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1730 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1731 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1732 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1733 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00369	1734 Lee Wilson Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00440	2383 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2384 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2385 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00440	2386 Ebner Anneal	FLD Process	---	Copper sheet, metalworking fluid, and hydrogen/nitrogen atmosphere	6 NYCRR 212
		00367/ 00362	1154 Bright Anneal (Entry and Exit)	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
		00027	1738 Strand Anneal	DXG Process, FLD Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Entry	PCK Process	---	Copper sheet and sulfuric acid	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Exit	PCK Process	---	Copper sheet and sulfuric acid	6 NYCRR 212
		00027	1738 Strand Anneal Cleaning	Cleaning	---	Cleaning solutions	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Entry	Cleaning	---	Cleaning solutions	6 NYCRR 212
		00028	1740 Heavy Gauge Cleaning - Exit	Cleaning	---	Cleaning solutions	6 NYCRR 212
	1 Bar Mill	00189/ 00190	464 Tray Style/Coil Anneal (Entry and Exit)	DXG Process	---	Copper sheet, metalworking fluid, and DX gas	6 NYCRR 212
U-GALV1	51 Rolling Mill	00600	02587 - Muriatic Acid Pickling Tank	PIC Process	---	Copper sheet, muriatic acid, and flux	6 NYCRR 212
		00601	02587 - Galvanizing Kettle	GAL Process	---	Copper sheet, molten tin and zinc, and flux	6 NYCRR 212
			Galvanizing Furnace	Combustion	9.7 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)
U-SOLV1	51 Rolling Mill	Fugitive	Degreaser	SOL Process	550 Gallons	226-1 Compliant Solvent	6 NYCRR 226-1; 6 NYCRR 212
Exempt	51 Rolling Mill	00335	1727 Lee Wilson Anneal	Combustion	1.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00335	1728 Lee Wilson Anneal	Combustion	1.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00334	2381 Ebner Anneal	Combustion	1.6 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00334	2382 Ebner Anneal	Combustion	1.6 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00366	1154 Bright Anneal	Combustion	1.5 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
		00358	1738 Strand Anneal	Combustion	4.2 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	1 Bar Mill	00202	464 Tray Style/Coil Anneal	Combustion	1.5 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)

Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements
	Main Office Bldg.		2 Building Heaters	Combustion	2 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Maint. Storage Bldg.		Building Heater	Combustion	0.074 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Operations Bldg.		Building Heater	Combustion	0.491 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Maint. Office Bldg.		Building Heater	Combustion	0.225 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Cast Shop Office Bldg.		Building Heater	Combustion	0.113 MMBtu/hr	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Facility		22 Unit Heaters	Combustion	1 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	Facility		10 Water Heaters	Combustion	0.25 MMBtu/hr Each	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(1)(i)
	~~Cast Shop~~		~~Emergency Generator~~	~~Combustion~~	~~94-hp~~	~~Natural gas~~	~~Exempt - 6 NYCRR 201-3.2(c)(6)~~
	Powerhouse		Emergency Generator	Combustion	168-hp	Diesel	Exempt - 6 NYCRR 201-3.2(c)(6)
	Soap House		Emergency Generator	Combustion	2680-hp	Diesel	Exempt - 6 NYCRR 201-3.2(c)(6)
	Main Office		Emergency Generator	Combustion	34-hp	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(6)
	Cast Shop		Emergency Generator - Coreless Furnace	Combustion	335-hp	Natural gas	Exempt - 6 NYCRR 201-3.2(c)(6); 40 CFR 60 Subpart JJJJ
	1 Bar Mill Area		Sodium Hydroxide Storage Tank	---	6,000 gallon	---	Exempt - 6 NYCRR 201-3.2(c)(25)
	1 Bar Mill Area		Grinders for Maintenance	---	---	---	Trivial - 6 NYCRR 201-3.3(c)(52)
	1 Bar Mill Area		Bar Mill Tanks (Degreasing Units)	---	---	non-HAP acids / caustics	Trivial - 6 NYCRR 201-3.3(c)(47) and 6 NYCRR 201-3.3(c)(48)
	1 Bar Mill Area		Silver Plating Line (Silver Cyanide and Potassium Cyanide)	---	---	Cyanide compounds	(b)
	Facility		Degreaser (Simple Green)	---	---	Caustics	Trivial - 6 NYCRR 201-3.3(c)(48)

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Table 1
Summary of Exempt and Non-Exempt Emission Sources
Revere Copper Products, Inc
Rome, NY

Emission Unit	Building / Location	Emission Point	Emission Source	Emission Process	Capacity	Fuel / Material Processed	Key Applicable Requirements

Notes:

(a) Revere has switched the oil fired by the boilers from No. 6 to No. 2 fuel oil.

(b) The silver plating line had internal worker exposure testing performed in the past, which showed that the only exposures to workers were particulate matter when mixing the solution. As this is not exhausted to atmosphere, this operation not considered an air emissions source and emissions were not quantified.

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[a] (tpy)	Major Source Threshold (tpy)
U-COMB1 Natural Gas Combustion (Table 3)					
Carbon Monoxide	00630-08-0	7,938	4.0		
Nitrogen Oxides	NY210-00-0	9,450	4.7		
Sulfur Dioxide	07446-09-5	57	2.8E-02		
Total Particulate Matter	NY075-00-0	718	0.36		
PM_{10}	NY075-00-5	718	0.36		
$PM_{2.5}$	NY075-02-5	718	0.36		
Volatile Organic Compounds	NY998-00-0	520	0.26		
Carbon Dioxide	00124-38-9	11,275,324	5,638		
Methane	00074-82-8	213	0.11		
Nitrous Oxide	10024-97-2	21	1.1E-02		
Carbon Dioxide Equivalents	CO2e	11,299,507	5,650		
Total HAPs	NY100-00-0	178	8.9E-02		
Arsenic	07440-38-2	1.9E-02	9.5E-06		
Benzene	00071-43-2	0.20	9.9E-05		
Beryllium	07440-41-7	1.1E-03	5.7E-07		
Cadmium	07440-43-9	0.10	5.2E-05		
Chromium	07440-47-3	0.13	6.6E-05		
Cobalt	07440-48-4	7.9E-03	4.0E-06		
Dichlorobenzene	25321-22-6	0.11	5.7E-05		
Formaldehyde	00050-00-0	7.1	3.5E-03		
Hexane	00110-54-3	170	8.5E-02		
Lead	07439-92-1	4.7E-02	2.4E-05		
Manganese	07439-96-5	3.6E-02	1.8E-05		
Mercury	07439-97-6	2.5E-02	1.2E-05		
Naphthalene	00091-20-3	5.8E-02	2.9E-05		
Nickel	07440-02-0	0.20	9.9E-05		
Polycyclic Organic Matter	POM	8.3E-03	4.2E-06		
Selenium	07782-49-2	2.3E-03	1.1E-06		
Toluene	00108-88-3	0.32	1.6E-04		
Miscellaneous Facility-Wide Natural Gas Combustion (Table 3)					
Carbon Monoxide	00630-08-0	36,491	18		
Nitrogen Oxides	NY210-00-0	43,442	22		
Sulfur Dioxide	07446-09-5	261	0.13		
Total Particulate Matter	NY075-00-0	3,302	1.7		
PM_{10}	NY075-00-5	3,302	1.7		
$PM_{2.5}$	NY075-02-5	3,302	1.7		
Volatile Organic Compounds	NY998-00-0	2,389	1.2		
Carbon Dioxide	00124-38-9	51,832,501	25,916		
Methane	00074-82-8	977	0.49		
Nitrous Oxide	10024-97-2	98	4.9E-02		
Carbon Dioxide Equivalents	CO2e	51,943,669	25,972		
Total HAPs	NY100-00-0	820	0.41		
Arsenic	07440-38-2	8.7E-02	4.3E-05		
Benzene	00071-43-2	0.91	4.6E-04		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Beryllium	07440-41-7	5.2E-03	2.6E-06		
Cadmium	07440-43-9	0.48	2.4E-04		
Chromium	07440-47-3	0.61	3.0E-04		
Cobalt	07440-48-4	3.6E-02	1.8E-05		
Dichlorobenzene	25321-22-6	0.52	2.6E-04		
Formaldehyde	00050-00-0	33	1.6E-02		
Hexane	00110-54-3	782	0.39		
Lead	07439-92-1	0.22	1.1E-04		
Manganese	07439-96-5	0.17	8.3E-05		
Mercury	07439-97-6	0.11	5.6E-05		
Naphthalene	00091-20-3	0.26	1.3E-04		
Nickel	07440-02-0	0.91	4.6E-04		
Polycyclic Organic Matter	POM	3.8E-02	1.9E-05		
Selenium	07782-49-2	1.0E-02	5.2E-06		
Toluene	00108-88-3	1.5	7.4E-04		
DX Gas Combustion (Table 4)					
Carbon Monoxide	00630-08-0	4,706	2.4		
Nitrogen Oxides	NY210-00-0	5,602	2.8		
Sulfur Dioxide	07446-09-5	34	1.7E-02		
Total Particulate Matter	NY075-00-0	426	0.21		
PM_{10}	NY075-00-5	426	0.21		
$PM_{2.5}$	NY075-02-5	426	0.21		
Volatile Organic Compounds	NY998-00-0	308	0.15		
Carbon Dioxide	00124-38-9	6,684,640	3,342		
Methane	00074-82-8	126	6.3E-02		
Nitrous Oxide	10024-97-2	13	6.3E-03		
Carbon Dioxide Equivalents	CO2e	6,698,977	3,349		
Total HAPs	NY100-00-0	106	5.3E-02		
Arsenic	07440-38-2	1.1E-02	5.6E-06		
Benzene	00071-43-2	0.12	5.9E-05		
Beryllium	07440-41-7	6.7E-04	3.4E-07		
Cadmium	07440-43-9	6.2E-02	3.1E-05		
Chromium	07440-47-3	7.8E-02	3.9E-05		
Cobalt	07440-48-4	4.7E-03	2.4E-06		
Dichlorobenzene	25321-22-6	6.7E-02	3.4E-05		
Formaldehyde	00050-00-0	4.2	2.1E-03		
Hexane	00110-54-3	101	5.0E-02		
Lead	07439-92-1	2.8E-02	1.4E-05		
Manganese	07439-96-5	2.1E-02	1.1E-05		
Mercury	07439-97-6	1.5E-02	7.3E-06		
Naphthalene	00091-20-3	3.4E-02	1.7E-05		
Nickel	07440-02-0	0.12	5.9E-05		
Polycyclic Organic Matter	POM	4.9E-03	2.5E-06		
Selenium	07782-49-2	1.3E-03	6.7E-07		
Toluene	00108-88-3	0.19	9.5E-05		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Fuel Oil Combustion (Table 5)					
Carbon Monoxide	00630-08-0	283	0.14		
Nitrogen Oxides	NY210-00-0	1,133	0.57		
Sulfur Dioxide	07446-09-5	12	6.0E-03		
Total Particulate Matter	NY075-00-0	187	9.3E-02		
PM_{10}	NY075-00-5	57	2.8E-02		
$PM_{2.5}$	NY075-02-5	14	7.1E-03		
Carbon Dioxide	00124-38-9	1,312,719	656		
Nitrous Oxide	10024-97-2	52	2.6E-02		
Methane	00074-82-8	10	5.2E-03		
Carbon Dioxide Equivalents	CO2e	1,320,249	660		
Volatile Organic Compounds	NY998-00-0	11	5.7E-03		
Total HAPs	NY100-00-0	4.0	2.0E-03		
Arsenic	07440-38-2	3.2E-02	1.6E-05		
Beryllium	07440-41-7	2.4E-02	1.2E-05		
Cadmium	07440-43-9	2.4E-02	1.2E-05		
Chromium	07440-47-3	2.4E-02	1.2E-05		
Formaldehyde	00050-00-0	3.5	1.7E-03		
Lead	07439-92-1	7.1E-02	3.6E-05		
Manganese	07439-96-5	4.8E-02	2.4E-05		
Mercury	07439-96-5	4.8E-02	2.4E-05		
Nickel	07440-02-0	2.4E-02	1.2E-05		
Polycyclic Organic Matter	POM	0.19	9.3E-05		
Selenium	07782-49-2	0.12	5.9E-05		
Emergency Generators (Table 6)					
Carbon Monoxide	00630-08-0	208	0.10		
Nitrogen Oxides	NY210-00-0	636	0.32		
Sulfur Dioxide	07446-09-5	8.6	4.3E-03		
Total Particulate Matter	NY075-00-0	20	9.9E-03		
PM_{10}	NY075-00-5	18	8.8E-03		
$PM_{2.5}$	NY075-02-5	16	8.1E-03		
Volatile Organic Compounds	NY998-00-0	32	1.6E-02		
Carbon Dioxide	00124-38-9	33,105	17		
Methane	00074-82-8	37	1.9E-02		
Total HAPs	NY100-00-0	2.4	1.2E-03		
Acenaphthene	00083-32-9	7.8E-04	3.9E-07		
Acenaphthylene	00208-96-8	1.7E-03	8.4E-07		
Acetaldehyde	00075-07-0	0.27	1.4E-04		
Acrolein	00107-02-8	0.16	8.0E-05		
Anthracene	00120-12-7	2.4E-04	1.2E-07		
Benzene	00071-43-2	0.16	8.2E-05		
Benz(a)anthracene	00056-55-3	1.4E-04	7.1E-08		
Benz(a)pyrene	00050-32-8	4.4E-05	2.2E-08		
Benzo(b)fluoranthene	00205-99-2	1.7E-04	8.7E-08		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	(tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Benzo(g,h,i)perylene	00191-24-2	1.1E-04	5.5E-08		
Benzo(e)pyrene	00192-97-2	1.2E-05	5.8E-09		
Benzo(b,k)fluoranthene	00207-08-9	3.7E-05	1.9E-08		
Biphenyl	00092-52-4	6.0E-03	3.0E-06		
Carbon Tetrachloride	00056-23-5	1.1E-03	5.6E-07		
Chlorobenzene	00108-90-7	9.2E-04	4.6E-07		
Chloroethane	00075-00-3	5.3E-05	2.6E-08		
Chloroform	00067-66-3	8.7E-04	4.3E-07		
Chrysene	00218-01-9	2.6E-04	1.3E-07		
Dibenzo(a,h)anthracene	00053-70-3	6.9E-05	3.4E-08		
1,1-Dichloroethane	00075-34-3	7.2E-04	3.6E-07		
1,2-Dichloroethane	00107-06-2	7.2E-04	3.6E-07		
1,2-Dichloropropane	00078-87-5	8.2E-04	4.1E-07		
1,3-Dichloropropene	00542-75-6	8.0E-04	4.0E-07		
Ethylbenzene	00100-41-4	1.2E-03	6.2E-07		
Ethylene Dibromide	00106-93-4	1.3E-03	6.7E-07		
Ethylene Dichloride	00107-06-2	7.2E-04	3.6E-07		
Fluoranthene	00206-44-0	8.6E-04	4.3E-07		
Fluorene	00086-73-7	2.9E-03	1.5E-06		
Formaldehyde	00050-00-0	1.6	8.1E-04		
Hexane	00110-54-3	3.1E-02	1.6E-05		
Indeno(1,2,3-cd)pyrene	00193-39-5	7.3E-05	3.6E-08		
Naphthalene	00091-20-3	2.5E-02	1.2E-05		
PAH	130498-29-2	1.4E-03	7.1E-07		
Phenanthrene	00085-01-8	7.3E-03	3.6E-06		
Pyrene	00129-00-0	7.3E-04	3.7E-07		
Styrene	00100-42-5	7.2E-04	3.6E-07		
1,1,2,2-Tetrachloroethane	00079-34-5	1.2E-03	6.2E-07		
Toluene	00108-88-3	6.8E-02	3.4E-05		
1,1,2-Trichloroethane	00079-00-5	9.7E-04	4.8E-07		
2,2,4-Trimethylpentane	00540-84-1	7.0E-03	3.5E-06		
Vinyl Chloride	00075-01-4	4.5E-04	2.3E-07		
Xylenes	01330-20-7	4.3E-02	2.2E-05		
U-CAST1 Furnaces (Table 7)					
Total Particulate Matter	NY075-00-0	9,502	4.8		
PM_{10}	NY075-00-5	5,146	2.6		
$PM_{2.5}$	NY075-02-5	1,914	0.96		
Graphite	07782-42-5	3,837	1.9		
Copper oxide	01317-38-0	2,930	1.5		
Iron oxide	01309-37-1	871	0.44		
Aluminum oxide	01344-28-1	26	1.3E-02		
Zinc oxide	01314-13-2	8.0	4.0E-03		
Magnesium oxide	01309-48-4	2.2	1.1E-03		
Barium oxide	01304-28-5	0.35	1.8E-04		
Silver oxide	20667-12-3	9.3E-02	4.7E-05		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	(tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Total HAPs	NY100-00-0	5.4	2.7E-03		
Lead oxide	01314-41-6	3.1	1.6E-03		
Manganese oxide	01313-13-9	2.2	1.1E-03		
Nickel oxide	01313-99-1	0.20	1.0E-04		
Cadmium oxide	01306-19-0	6.5E-02	3.2E-05		
Chromium oxide	01333-82-0	9.0E-02	4.5E-05		
Mercury oxide	21908-53-2	8.5E-04	4.2E-07		
U-CAST1 VAC Process (Table 8)					
Total Particulate Matter	NY075-00-0	30	1.5E-02		
PM_{10}	NY075-00-5	30	1.5E-02		
$PM_{2.5}$	NY075-02-5	30	1.5E-02		
Graphite	07782-42-5	12	6.0E-03		
Copper oxide	01317-38-0	9.2	4.6E-03		
Iron oxide	01309-37-1	2.7	1.4E-03		
Aluminum oxide	01344-28-1	8.2E-02	4.1E-05		
Zinc oxide	01314-13-2	2.5E-02	1.3E-05		
Magnesium oxide	01309-48-4	7.0E-03	3.5E-06		
Barium oxide	01304-28-5	1.1E-03	5.5E-07		
Silver oxide	20667-12-3	2.9E-04	1.5E-07		
Total HAPs	NY100-00-0	1.8E-02	9.0E-06		
Lead oxide	01314-41-6	9.8E-03	4.9E-06		
Manganese oxide	01313-13-9	7.0E-03	3.5E-06		
Nickel oxide	01313-99-1	6.3E-04	3.1E-07		
Cadmium oxide	01306-19-0	2.0E-04	1.0E-07		
Chromium oxide	01333-82-0	2.8E-04	1.4E-07		
Mercury oxide	21908-53-2	2.7E-06	1.3E-09		
U-ROLL1 (Table 9)					
Total Particulate Matter	NY075-00-0	7,496	3.7		
PM_{10}	NY075-00-5	7,299	3.6		
$PM_{2.5}$	NY075-02-5	6,424	3.2		
Propane-1,2-diol	00057-55-6	90	4.5E-02		
Hexylene glycol	00107-41-5	48	2.4E-02		
2-Butoxyethanol	00111-76-2	1.9E-07	9.4E-11		
2-Amino-2-methyl-1-propanol	00124-68-5	2.6E-02	1.3E-05		
Alkanolamine	00141-43-5	141	7.0E-02		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	9.0	4.5E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	179	9.0E-02		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	90	4.5E-02		
Nonylphenol, ethoxylated	09016-45-9	139	7.0E-02		
Fatty alcohol alkoxylate	37335-03-8	0.13	6.6E-05		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	150	7.5E-02		
Amines, tallow alkyl, ethoxylated	61791-26-2	90	4.5E-02		

Table 2
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Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	(tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	815	0.41		
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.69	3.4E-04		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	653	0.33		
Sulfonic acids, petroleum, sodium salts	68608-26-4	229	0.11		
Petroleum distillates	Trade Secret #1	3.8E-06	1.9E-09		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)		
Base oil	Trade Secret #3	139	7.0E-02		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	2,701	1.4		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	90	4.5E-02		
Trade Secret	Trade Secret #8	300	0.15		
U-OVER1 (Table 10)					
Total Particulate Matter	NY075-00-0	14,127	7.1		
PM_{10}	NY075-00-5	3,483	1.7		
$PM_{2.5}$	NY075-02-5	3,193	1.6		
Copper	07440-50-8	1,795	0.90		
Tin	07440-31-5	2.6E-02	1.3E-05		
Silver	07440-22-4	1.2E-02	5.8E-06		
Tellurium	13494-80-9	2.9E-03	1.5E-06		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	1,761	0.88		
Proprietary emulsifier	Trade Secret #6	252	0.13		
HAPs	NY100-00-0	1.9E-03	9.3E-07		
Phosphorus	07723-14-0	1.9E-03	9.3E-07		
U-ANNE1 (Table 11)					
VOC	NY998-00-0	187	9.3E-02		
Diethylene glycol	00111-46-6	8.1	4.1E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03		
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03		
Polyethylene glycol	25322-68-3	11	5.3E-03		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	156	7.8E-02		
Petroleum distillates	Trade Secret #1	15	7.6E-03		
Azole derivative	Trade Secret #7	10	5.2E-03		
U-ANNE1 - Pickling (Table 12)					
Total Particulate Matter	NY075-00-0	622	0.31		
PM_{10}	NY075-00-5	622	0.31		
$PM_{2.5}$	NY075-02-5	622	0.31		
Sulfuric acid	07664-93-9	622	0.31		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[a] (tpy)	Major Source Threshold (tpy)
U-ANNE1 - Cleaning (Table 13)					
Total Particulate Matter	NY075-00-0	141	7.0E-02		
PM_{10}	NY075-00-5	141	7.0E-02		
$PM_{2.5}$	NY075-02-5	141	7.0E-02		
Diethylene glycol	00111-46-6	1.4E-02	7.2E-06		
Sodium metasilicate	06834-92-0	12	6.1E-03		
Hydrogen peroxide	07722-84-1	18	8.9E-03		
Sodium phosphate, tribasic	10101-89-0	4.9	2.5E-03		
Polyethylene glycol	25322-68-3	0.17	8.6E-05		
Azole derivative	Trade Secret #7	0.17	8.6E-05		
U-GALV1 Molten Tank (Table 14)					
Total Particulate Matter	NY075-00-0	3.9	1.9E-03		
PM_{10}	NY075-00-5	3.9	1.9E-03		
$PM_{2.5}$	NY075-02-5	3.9	1.9E-03		
Zinc	07440-66-6	1.9	9.6E-04		
Tin	07440-31-5	1.9	9.6E-04		
Zinc chloride	07646-85-7	2.7E-02	1.4E-05		
Ammonium chloride	12125-02-9	1.2E-02	5.8E-06		
U-GALV1 Acid Tank (Table 15)					
Total Particulate Matter	NY075-00-0	3.3	1.6E-03		
PM_{10}	NY075-00-5	3.3	1.6E-03		
$PM_{2.5}$	NY075-02-5	3.3	1.6E-03		
Zinc chloride	07646-85-7	0.25	1.3E-04		
Barium chloride	10361-37-2	0.25	1.3E-04		
Ammonium chloride	12125-02-9	0.25	1.3E-04		
HAPs	NY100-00-0	2.5	1.3E-03		
Hydrogen chloride	07647-01-0	2.5	1.3E-03		
Parts Washer (Table 16)					
VOC	NY998-00-0	181	9.1E-02		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02		
Process Source Emissions Subject to Part 212, Total					
Total Particulate Matter	NY075-00-0	31,790	16		
PM_{10}	NY075-00-5	16,502	8.3		
$PM_{2.5}$	NY075-02-5	12,193	6.1		
Propane-1,2-diol	00057-55-6	90	4.5E-02		
Hexylene glycol	00107-41-5	48	2.4E-02		
2-Amino-2-methyl-1-propanol	00124-68-5	2.6E-02	1.3E-05		
Alkanolamine	00141-43-5	141	7.0E-02		
Barium oxide	01304-28-5	0.35	1.7E-04		
Iron oxide	01309-37-1	853	0.43		
Magnesium oxide	01309-48-4	2.2	1.1E-03		
Zinc oxide	01314-13-2	7.9	3.9E-03		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	(tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Copper oxide	01317-38-0	2,870	1.4		
Aluminum oxide	01344-28-1	26	1.3E-02		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	9.0	4.5E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	179	9.0E-02		
Sodium metasilicate	06834-92-0	12	6.1E-03		
Silver	07440-22-4	1.2E-02	5.8E-06		
Tin	07440-31-5	1.9	9.7E-04		
Copper	07440-50-8	1,795	0.90		
Zinc	07440-66-6	1.9	9.6E-04		
Zinc chloride	07646-85-7	0.28	1.4E-04		
Hydrogen chloride	07647-01-0	2.5	1.3E-03		
Sulfuric acid	07664-93-9	622	0.31		
Hydrogen peroxide	07722-84-1	18	8.9E-03		
Graphite	07782-42-5	3,759	1.9		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	90	4.5E-02		
Nonylphenol, ethoxylated	09016-45-9	139	7.0E-02		
Sodium phosphate, tribasic	10101-89-0	4.9	2.5E-03		
Barium chloride	10361-37-2	0.25	1.3E-04		
Ammonium chloride	12125-02-9	0.26	1.3E-04		
Tellurium	13494-80-9	2.9E-03	1.5E-06		
Silver oxide	20667-12-3	9.1E-02	4.6E-05		
Fatty alcohol alkoxylate	37335-03-8	0.13	6.6E-05		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	150	7.5E-02		
Amines, tallow alkyl, ethoxylated	61791-26-2	90	4.5E-02		
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	815	0.41		
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.69	3.4E-04		
Sulfonic acids, petroleum, sodium salts	68608-26-4	229	0.11		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)		
Base oil	Trade Secret #3	139	7.0E-02		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	4,462	2.2		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	90	4.5E-02		
Proprietary emulsifier	Trade Secret #6	252	0.13		
Trade Secret	Trade Secret #8	300	0.15		
VOC	NY998-00-0	368	0.18		
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02		
Particulate/VOC[(c)]					
Diethylene glycol	00111-46-6	8.1	4.1E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03		
Polyethylene glycol	25322-68-3	11	5.4E-03		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	809	0.40		
Petroleum distillates	Trade Secret #1	15	7.6E-03		
Azole derivative	Trade Secret #7	11	5.3E-03		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Total HAPs	NY100-00-0	7.9	3.9E-03		
Cadmium oxide	01306-19-0	6.4E-02	3.2E-05		
Nickel oxide	01313-99-1	0.20	9.8E-05		
Lead oxide	01314-41-6	3.1	1.5E-03		
Chromium oxide	01333-82-0	8.8E-02	4.4E-05		
Hydrogen chloride	07647-01-0	2.5	1.3E-03		
Phosphorus	07723-14-0	1.9E-03	9.3E-07		
Mercury oxide	21908-53-2	8.3E-04	4.2E-07		
Facility Total					
Carbon Monoxide	00630-08-0	49,626	25		100
Nitrogen Oxides	NY210-00-0	60,262	30	95	100
Sulfur Dioxide	07446-09-5	372	0.19	95	100
Carbon Dioxide	00124-38-9	71,138,289	35,569		
Methane	00074-82-8	1,363	0.68		
Nitrous Oxide	10024-97-2	184	9.2E-02		
Carbon Dioxide Equivalents	CO2e	71,262,402	35,631		
Total Particulate Matter	NY075-00-0	36,578	18	90	
PM_{10}	NY075-00-5	21,248	11	90	100
$PM_{2.5}$	NY075-02-5	16,807	8.4	90	100
Propane-1,2-diol	00057-55-6	90	4.5E-02		
Hexylene glycol	00107-41-5	48	2.4E-02		
2-Amino-2-methyl-1-propanol	00124-68-5	2.6E-02	1.3E-05		
Alkanolamine	00141-43-5	141	7.0E-02		
Barium oxide	01304-28-5	0.35	1.8E-04		
Iron oxide	01309-37-1	874	0.44		
Magnesium oxide	01309-48-4	2.2	1.1E-03		
Zinc oxide	01314-13-2	8.1	4.0E-03		
Copper oxide	01317-38-0	2,939	1.5		
Aluminum oxide	01344-28-1	26	1.3E-02		
1,2-Benzisothiazol-3(2H)-one	02634-33-5	9.0	4.5E-03		
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	179	9.0E-02		
Sodium metasilicate	06834-92-0	12	6.1E-03		
Silver	07440-22-4	1.2E-02	5.8E-06		
Tin	07440-31-5	1.9	9.7E-04		
Copper	07440-50-8	1,795	0.90		
Zinc	07440-66-6	1.9	9.6E-04		
Zinc chloride	07646-85-7	0.28	1.4E-04		
Hydrogen chloride	07647-01-0	2.5	1.3E-03		
Sulfuric acid	07664-93-9	622	0.31		
Hydrogen peroxide	07722-84-1	18	8.9E-03		
Graphite	07782-42-5	3,849	1.9		
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	90	4.5E-02		
Nonylphenol, ethoxylated	09016-45-9	139	7.0E-02		
Sodium phosphate, tribasic	10101-89-0	4.9	2.5E-03		
Barium chloride	10361-37-2	0.25	1.3E-04		

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

		Actual Annual Emissions		Emission Cap[(a)]	Major Source Threshold
Emission Source and Contaminants	**CAS Number**	**(lb/yr)**	**(tpy)**	**(tpy)**	**(tpy)**
Ammonium chloride	12125-02-9	0.26	1.3E-04		
Tellurium	13494-80-9	2.9E-03	1.5E-06		
Silver oxide	20667-12-3	9.3E-02	4.7E-05		
Fatty alcohol alkoxylate	37335-03-8	0.13	6.6E-05		
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	150	7.5E-02		
Amines, tallow alkyl, ethoxylated	61791-26-2	90	4.5E-02		
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	815	0.41		
Hydrotreated light naphthenic petroleum oil	64742-53-6	0.69	3.4E-04		
Sulfonic acids, petroleum, sodium salts	68608-26-4	229	0.11		
Petroleum distillates (mineral oil)	Trade Secret #2	(b)	(b)		
Base oil	Trade Secret #3	139	7.0E-02		
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	4,462	2.2		
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	90	4.5E-02		
Proprietary emulsifier	Trade Secret #6	252	0.13		
Trade Secret	Trade Secret #8	300	0.15		
Volatile Organic Compounds	NY998-00-0	3,628	1.8		50
Petroleum distillates (mineral oil)	08042-47-5	2.4	1.2E-03		
Distillates, petroleum, hydrotreated light	64742-47-8	181	9.1E-02		
Particulate/VOC[(c)]					
Diethylene glycol	00111-46-6	8.1	4.1E-03		
2-Butoxyethanol	00111-76-2	10	5.1E-03		
Polyethylene glycol	25322-68-3	11	5.4E-03		
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	809	0.40		
Petroleum distillates	Trade Secret #1	15	7.6E-03		
Azole derivative	Trade Secret #7	11	5.3E-03		
Total HAPs	NY100-00-0	1,119	0.56		25
Formaldehyde	00050-00-0	49	2.4E-02		10
Benz(a)pyrene	00050-32-8	4.4E-05	2.2E-08		10
Dibenzo(a,h)anthracene	00053-70-3	6.9E-05	3.4E-08		10
Carbon Tetrachloride	00056-23-5	1.1E-03	5.6E-07		10
Benz(a)anthracene	00056-55-3	1.4E-04	7.1E-08		10
Chloroform	00067-66-3	8.7E-04	4.3E-07		10
Benzene	00071-43-2	1.4	7.0E-04		10
Chloroethane	00075-00-3	5.3E-05	2.6E-08		10
Vinyl Chloride	00075-01-4	4.5E-04	2.3E-07		10
Acetaldehyde	00075-07-0	0.27	1.4E-04		10
1,1-Dichloroethane	00075-34-3	7.2E-04	3.6E-07		10
1,2-Dichloropropane	00078-87-5	8.2E-04	4.1E-07		10
1,1,2-Trichloroethane	00079-00-5	9.7E-04	4.8E-07		10
1,1,2,2-Tetrachloroethane	00079-34-5	1.2E-03	6.2E-07		10
Acenaphthene	00083-32-9	7.8E-04	3.9E-07		10
Phenanthrene	00085-01-8	7.3E-03	3.6E-06		10
Fluorene	00086-73-7	2.9E-03	1.5E-06		10

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	Actual Annual Emissions (tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)
Naphthalene	00091-20-3	0.38	1.9E-04		10
Biphenyl	00092-52-4	6.0E-03	3.0E-06		10
Ethylbenzene	00100-41-4	1.2E-03	6.2E-07		10
Styrene	00100-42-5	7.2E-04	3.6E-07		10
Ethylene Dibromide	00106-93-4	1.3E-03	6.7E-07		10
Acrolein	00107-02-8	0.16	8.0E-05		10
Ethylene Dichloride	00107-06-2	1.4E-03	7.2E-07		10
Toluene	00108-88-3	2.1	1.0E-03		10
Chlorobenzene	00108-90-7	9.2E-04	4.6E-07		10
Hexane	00110-54-3	1,053	0.53		10
Anthracene	00120-12-7	2.4E-04	1.2E-07		10
Pyrene	00129-00-0	7.3E-04	3.7E-07		10
Benzo(g,h,i)perylene	00191-24-2	1.1E-04	5.5E-08		10
Benzo(e)pyrene	00192-97-2	1.2E-05	5.8E-09		10
Indeno(1,2,3-cd)pyrene	00193-39-5	7.3E-05	3.6E-08		10
Benzo(b)fluoranthene	00205-99-2	1.7E-04	8.7E-08		10
Fluoranthene	00206-44-0	8.6E-04	4.3E-07		10
Benzo(b,k)fluoranthene	00207-08-9	3.7E-05	1.9E-08		10
Acenaphthylene	00208-96-8	1.7E-03	8.4E-07		10
Chrysene	00218-01-9	2.6E-04	1.3E-07		10
2,2,4-Trimethylpentane	00540-84-1	7.0E-03	3.5E-06		10
1,3-Dichloropropene	00542-75-6	8.0E-04	4.0E-07		10
Cadmium oxide	01306-19-0	6.5E-02	3.3E-05		10
Nickel oxide	01313-99-1	0.20	1.0E-04		10
Lead oxide	01314-41-6	3.2	1.6E-03		10
Xylenes	01330-20-7	4.3E-02	2.2E-05		10
Chromium oxide	01333-82-0	9.0E-02	4.5E-05		10
Lead	07439-92-1	0.36	1.8E-04		10
Manganese	07439-96-5	0.32	1.6E-04		10
Mercury	07439-96-5	0.32	1.6E-04		10
Nickel	07440-02-0	1.3	6.3E-04		10
Arsenic	07440-38-2	0.15	7.4E-05		10
Beryllium	07440-41-7	3.1E-02	1.5E-05		10
Cadmium	07440-43-9	0.67	3.3E-04		10
Chromium	07440-47-3	0.84	4.2E-04		10
Cobalt	07440-48-4	4.9E-02	2.5E-05		10
Hydrogen chloride	07647-01-0	2.5	1.3E-03		10
Phosphorus	07723-14-0	1.9E-03	9.3E-07		10
Selenium	07782-49-2	0.13	6.6E-05		10
PAH	130498-29-2	1.4E-03	7.1E-07		10
Mercury oxide	21908-53-2	8.5E-04	4.3E-07		10
Dichlorobenzene	25321-22-6	0.70	3.5E-04		10
Polycyclic Organic Matter	POM	0.24	1.2E-04		10

Table 2
Summary of Facility Total Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Emission Source and Contaminants	CAS Number	Actual Annual Emissions (lb/yr)	(tpy)	Emission Cap[(a)] (tpy)	Major Source Threshold (tpy)

Notes:
(a) Emission caps are based on existing and proposed caps. The sulfur dioxide cap will no longer be required due to the change from No. 6 to No. 2 fuel oil combustion by the boilers and the current sulfur content limit of No. 2 fuel oil. Based on the updated emission estimates, the Total Particulate Matter, PM_{10}, and $PM_{2.5}$ caps will no longer be required.
(b) This pollutant is present in a biocide applied on some of the Rolling Mills and was included in the prior permit application as being potentially emitted from the Rolling Mills. Upon further investigation, the biocide is completely consumed by the bacteria within 24 to 48 hours of application and is not expected to be released to the atmosphere. As such, this biocide has been removed from the Emission Inventory tables. This pollutant has been left in the inventory to maintain the same Trade Secret identification methodology to avoid possible confusion.
(c) Contaminants in this section are emitted as a particulate oil mist from some processes and as gaseous VOCs from oth

Table 3

Natural Gas Combustion
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(a)] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Commissioning Plan Projected Fuel Usage[(b)] (MMscf/year)	Projected Actual Annual Emissions[(c)] (lb/yr)	(tpy)
U-COMB1			141	95		
Three boilers (two at 42 MMBtu/hr ea and one at 57.2 MMBtu/hr) firing natural gas.						
Carbon Monoxide	00630-08-0	84			7,938	4.0
Nitrogen Oxides	NY210-00-0	100			9,450	4.7
Sulfur Dioxide	07446-09-5	0.60			57	2.8E-02
PM (Total)	NY075-00-0	7.6			718	0.36
PM_{10}	NY075-00-5	7.6			718	0.36
$PM_{2.5}$	NY075-02-5	7.6			718	0.36
Carbon Dioxide	00124-38-9	119,316			11,275,324	5,638
Methane	00074-82-8	2.2			213	0.11
Nitrous Oxide	10024-97-2	0.22			21	1.1E-02
Volatile Organic Compounds	NY998-00-0	5.5			520	0.26
Total HAPs	NY100-00-0				178	8.9E-02
Arsenic	07440-38-2	2.0E-04			1.9E-02	9.5E-06
Benzene	00071-43-2	2.1E-03			0.20	9.9E-05
Beryllium	07440-41-7	1.2E-05			1.1E-03	5.7E-07
Cadmium	07440-43-9	1.1E-03			0.10	5.2E-05
Chromium	07440-47-3	1.4E-03			0.13	6.6E-05
Cobalt	07440-48-4	8.4E-05			7.9E-03	4.0E-06
Dichlorobenzene	25321-22-6	1.2E-03			0.11	5.7E-05
Formaldehyde	00050-00-0	7.5E-02			7.1	3.5E-03
Hexane	00110-54-3	1.8			170	8.5E-02
Lead	07439-92-1	5.0E-04			4.7E-02	2.4E-05
Manganese	07439-96-5	3.8E-04			3.6E-02	1.8E-05
Mercury	07439-97-6	2.6E-04			2.5E-02	1.2E-05
Naphthalene	00091-20-3	6.1E-04			5.8E-02	2.9E-05
Nickel	07440-02-0	2.1E-03			0.20	9.9E-05
Polycyclic Organic Matter	POM	8.8E-05			8.3E-03	4.2E-06
Selenium	07782-49-2	2.4E-05			2.3E-03	1.1E-06
Toluene	00108-88-3	3.4E-03			0.32	1.6E-04

Table 3
Natural Gas Combustion
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[a] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Commissioning Plan Projected Fuel Usage[b] (MMscf/year)	Projected Actual Annual Emissions[c] (lb/yr)	(tpy)
Miscellaneous Facility-Wide			97	434		
Facility-Wide Natural Gas Combustion across all other combustion units.						
Carbon Monoxide	00630-08-0	84			36,491	18
Nitrogen Oxides	NY210-00-0	100			43,442	22
Sulfur Dioxide	07446-09-5	0.60			261	0.13
PM (Total)	NY075-00-0	7.6			3,302	1.7
PM_{10}	NY075-00-5	7.6			3,302	1.7
$PM_{2.5}$	NY075-02-5	7.6			3,302	1.7
Carbon Dioxide	00124-38-9	119,316			51,832,501	25,916
Methane	00074-82-8	2.2			977	0.49
Nitrous Oxide	10024-97-2	0.22			98	4.9E-02
Volatile Organic Compounds	NY998-00-0	5.5			2,389	1.2
Total HAPs	NY100-00-0				820	0.41
Arsenic	07440-38-2	2.0E-04			8.7E-02	4.3E-05
Benzene	00071-43-2	2.1E-03			0.91	4.6E-04
Beryllium	07440-41-7	1.2E-05			5.2E-03	2.6E-06
Cadmium	07440-43-9	1.1E-03			0.48	2.4E-04
Chromium	07440-47-3	1.4E-03			0.61	3.0E-04
Cobalt	07440-48-4	8.4E-05			3.6E-02	1.8E-05
Dichlorobenzene	25321-22-6	1.2E-03			0.52	2.6E-04
Formaldehyde	00050-00-0	7.5E-02			33	1.6E-02
Hexane	00110-54-3	1.8			782	0.39
Lead	07439-92-1	5.0E-04			0.22	1.1E-04
Manganese	07439-96-5	3.8E-04			0.17	8.3E-05
Mercury	07439-97-6	2.6E-04			0.11	5.6E-05
Naphthalene	00091-20-3	6.1E-04			0.26	1.3E-04
Nickel	07440-02-0	2.1E-03			0.91	4.6E-04
Polycyclic Organic Matter	POM	8.8E-05			3.8E-02	1.9E-05
Selenium	07782-49-2	2.4E-05			1.0E-02	5.2E-06

Table 3

Natural Gas Combustion
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[a] (lb/MMscf)	Total Heat Input Rating (MMBtu/hr)	Commissioning Plan Projected Fuel Usage[b] (MMscf/year)	Projected Actual Annual Emissions[c] (lb/yr)	(tpy)
Toluene	00108-88-3	3.4E-03			1.5	7.4E-04

Notes:
(a) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.4 - Natural Gas Combustion (July 1998). Greenhouse gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.
(b) The Commissioning Plan Projected Fuel Usage is based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.
(c) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Fuel Usage (MMscf/yr) x Emission Factor (lb/MMscf).
Projected Actual Annual Emissions (ton/yr) = Projected Actual Annual Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 4
DXG Combustion[a]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[c] (MMscf/year)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)
01729-01734			**1.25E-03**	**9.2**		
Six Lee Wilson Annealing Units in the Rolling Mill						
Carbon Monoxide	00630-08-0	84			774	0.39
Nitrogen Oxides	NY210-00-0	100			922	0.46
Sulfur Dioxide	07446-09-5	0.6			5.5	2.8E-03
PM (Total)	NY075-00-0	7.6			70	3.5E-02
PM_{10}	NY075-00-5	7.6			70	3.5E-02
$PM_{2.5}$	NY075-02-5	7.6			70	3.5E-02
Carbon Dioxide	00124-38-9	119,316			1,099,840	550
Methane	00074-82-8	2.2			21	1.0E-02
Nitrous Oxide	10024-97-2	0.2			2.1	1.0E-03
Volatile Organic Compounds	NY998-00-0	5.5			51	2.5E-02
Total HAPs	NY100-00-0				17	8.7E-03
Arsenic	07440-38-2	2.0E-04			1.8E-03	9.2E-07
Benzene	00071-43-2	2.1E-03			1.9E-02	9.7E-06
Beryllium	07440-41-7	1.2E-05			1.1E-04	5.5E-08
Cadmium	07440-43-9	1.1E-03			1.0E-02	5.1E-06
Chromium	07440-47-3	1.4E-03			1.3E-02	6.5E-06
Cobalt	07440-48-4	8.4E-05			7.7E-04	3.9E-07
Dichlorobenzene	25321-22-6	1.2E-03			1.1E-02	5.5E-06
Formaldehyde	00050-00-0	7.5E-02			0.69	3.5E-04
Hexane	00110-54-3	1.8E+00			17	8.3E-03
Lead	07439-92-1	5.00E-04			4.6E-03	2.3E-06
Manganese	07439-96-5	3.8E-04			3.5E-03	1.8E-06
Mercury	07439-97-6	2.6E-04			2.4E-03	1.2E-06
Naphthalene	00091-20-3	6.1E-04			5.6E-03	2.8E-06
Nickel	07440-02-0	2.1E-03			1.9E-02	9.7E-06
Polycyclic Organic Matter	POM	8.8E-05			8.1E-04	4.1E-07
Selenium	07782-49-2	2.4E-05			2.2E-04	1.1E-07
Toluene	00108-88-3	3.4E-03			3.1E-02	1.6E-05

Table 4
DXG Combustion[a]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[c] (MMscf/year)	Projected Actual Annual Emissions[d] (lb/yr)	Projected Actual Annual Emissions[d] (tpy)
01154			**8.07E-04**	**4.5**		
One Bright Anneal Unit in the Rolling Mill						
Carbon Monoxide	00630-08-0	84			378	0.19
Nitrogen Oxides	NY210-00-0	100			451	0.23
Sulfur Dioxide	07446-09-5	0.60			2.7	1.4E-03
PM (Total)	NY075-00-0	7.6			34	1.7E-02
PM_{10}	NY075-00-5	7.6			34	1.7E-02
$PM_{2.5}$	NY075-02-5	7.6			34	1.7E-02
Volatile Organic Compounds	NY998-00-0	5.5			25	1.2E-02
Carbon Dioxide	00124-38-9	119,316			537,596	269
Methane	00074-82-8	2.2			10	5.1E-03
Nitrous Oxide	10024-97-2	0.22			1.0	5.1E-04
Total HAPs	NY100-00-0				8.5	4.3E-03
Arsenic	07440-38-2	2.0E-04			9.0E-04	4.5E-07
Benzene	00071-43-2	2.1E-03			9.5E-03	4.7E-06
Beryllium	07440-41-7	1.2E-05			5.4E-05	2.7E-08
Cadmium	07440-43-9	1.1E-03			5.0E-03	2.5E-06
Chromium	07440-47-3	1.4E-03			6.3E-03	3.2E-06
Cobalt	07440-48-4	8.4E-05			3.8E-04	1.9E-07
Dichlorobenzene	25321-22-6	1.2E-03			5.4E-03	2.7E-06
Formaldehyde	00050-00-0	7.5E-02			0.34	1.7E-04
Lead	07439-92-1	5.0E-04			2.3E-03	1.1E-06
Hexane	00110-54-3	1.8			8.1	4.1E-03
Manganese	07439-96-5	3.8E-04			1.7E-03	8.6E-07
Mercury	07439-97-6	2.6E-04			1.2E-03	5.9E-07
Naphthalene	00091-20-3	6.1E-04			2.7E-03	1.4E-06
Nickel	07440-02-0	2.1E-03			9.5E-03	4.7E-06
Polycyclic Organic Matter	POM	8.8E-05			4.0E-04	2.0E-07
Selenium	07782-49-2	2.4E-05			1.1E-04	5.4E-08
Toluene	00108-88-3	3.4E-03			1.5E-02	7.7E-06

Table 4
DXG Combustion[a]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[c] (MMscf/year)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)
01738			**1.47E-03**	**37**		
One Strand Anneal Unit in the Rolling Mill						
Carbon Monoxide	00630-08-0	84			3,082	1.5
Nitrogen Oxides	NY210-00-0	100			3,669	1.8
Sulfur Dioxide	07446-09-5	0.60			22	1.1E-02
PM (Total)	NY075-00-0	7.6			279	1.4E-01
PM_{10}	NY075-00-5	7.6			279	1.4E-01
$PM_{2.5}$	NY075-02-5	7.6			279	1.4E-01
Volatile Organic Compounds	NY998-00-0	5.5			202	1.0E-01
Carbon Dioxide	00124-38-9	119,316			4,377,426	2,189
Methane	00074-82-8	2.2			82	4.1E-02
Nitrous Oxide	10024-97-2	0.22			8.2	4.1E-03
Total HAPs	NY100-00-0				69	3.5E-02
Arsenic	07440-38-2	2.0E-04			7.3E-03	3.7E-06
Benzene	00071-43-2	2.1E-03			7.7E-02	3.9E-05
Beryllium	07440-41-7	1.2E-05			4.4E-04	2.2E-07
Cadmium	07440-43-9	1.1E-03			4.0E-02	2.0E-05
Chromium	07440-47-3	1.4E-03			5.1E-02	2.6E-05
Cobalt	07440-48-4	8.4E-05			3.1E-03	1.5E-06
Dichlorobenzene	25321-22-6	1.2E-03			4.4E-02	2.2E-05
Formaldehyde	00050-00-0	7.5E-02			2.8	1.4E-03
Hexane	00110-54-3	1.8			66	3.3E-02
Lead	07439-92-1	5.0E-04			1.8E-02	9.2E-06
Manganese	07439-96-5	3.8E-04			1.4E-02	7.0E-06
Mercury	07439-97-6	2.6E-04			9.5E-03	4.8E-06
Naphthalene	00091-20-3	6.1E-04			2.2E-02	1.1E-05
Nickel	07440-02-0	2.1E-03			7.7E-02	3.9E-05
Polycyclic Organic Matter	POM	8.8E-05			3.2E-03	1.6E-06
Selenium	07782-49-2	2.4E-05			8.8E-04	4.4E-07
Toluene	00108-88-3	3.4E-03			0.12	6.2E-05

Table 4
DXG Combustion[(a)]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(b)] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[(c)] (MMscf/year)	Projected Actual Annual Emissions[(d)] (lb/yr)	(tpy)
00464			**2.19E-03**	**5.6**		
One Tray Style/Coil Anneal Unit in the Bar Mill						
Carbon Monoxide	00630-08-0	84			472	0.24
Nitrogen Oxides	NY210-00-0	100			561	0.28
Sulfur Dioxide	07446-09-5	0.60			3.4	1.7E-03
PM (Total)	NY075-00-0	7.6			43	2.1E-02
PM_{10}	NY075-00-5	7.6			43	2.1E-02
$PM_{2.5}$	NY075-02-5	7.6			43	2.1E-02
Volatile Organic Compounds	NY998-00-0	5.5			31	1.5E-02
Carbon Dioxide	00124-38-9	119,316			669,778	335
Methane	00074-82-8	2.2			13	6.3E-03
Nitrous Oxide	10024-97-2	0.22			1.3	6.3E-04
Total HAPs	NY100-00-0				11	5.3E-03
Arsenic	07440-38-2	2.0E-04			1.1E-03	5.6E-07
Benzene	00071-43-2	2.1E-03			1.2E-02	5.9E-06
Beryllium	07440-41-7	1.2E-05			6.7E-05	3.4E-08
Cadmium	07440-43-9	1.1E-03			6.2E-03	3.1E-06
Chromium	07440-47-3	1.4E-03			7.9E-03	3.9E-06
Cobalt	07440-48-4	8.4E-05			4.7E-04	2.4E-07
Dichlorobenzene	25321-22-6	1.2E-03			6.7E-03	3.4E-06
Formaldehyde	00050-00-0	7.5E-02			0.42	2.1E-04
Hexane	00110-54-3	1.8			10	5.1E-03
Lead	07439-92-1	5.0E-04			2.8E-03	1.4E-06
Manganese	07439-96-5	3.8E-04			2.1E-03	1.1E-06
Mercury	07439-97-6	2.6E-04			1.5E-03	7.3E-07
Naphthalene	00091-20-3	6.1E-04			3.4E-03	1.7E-06
Nickel	07440-02-0	2.1E-03			1.2E-02	5.9E-06
Polycyclic Organic Matter	POM	8.8E-05			5.0E-04	2.5E-07
Selenium	07782-49-2	2.4E-05			1.3E-04	6.7E-08
Toluene	00108-88-3	3.4E-03			1.9E-02	9.5E-06

Table 4
DXG Combustion[a]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[c] (MMscf/year)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)
Total				**56.0**		
Carbon Monoxide	00630-08-0				4,706	2.4
Nitrogen Oxides	NY210-00-0				5,602	2.8
Sulfur Dioxide	07446-09-5				34	1.7E-02
PM (Total)	NY075-00-0				426	0.21
PM_{10}	NY075-00-5				426	0.21
$PM_{2.5}$	NY075-02-5				426	0.21
Volatile Organic Compounds	NY998-00-0				308	0.15
Carbon Dioxide	00124-38-9				6,684,640	3,342
Methane	00074-82-8				126	6.3E-02
Nitrous Oxide	10024-97-2				13	6.3E-03
Total HAPs	NY100-00-0				106	5.3E-02
Arsenic	07440-38-2				1.1E-02	5.6E-06
Benzene	00071-43-2				0.12	5.9E-05
Beryllium	07440-41-7				6.7E-04	3.4E-07
Cadmium	07440-43-9				6.2E-02	3.1E-05
Chromium	07440-47-3				7.8E-02	3.9E-05
Cobalt	07440-48-4				4.7E-03	2.4E-06
Dichlorobenzene	25321-22-6				6.7E-02	3.4E-05
Formaldehyde	00050-00-0				4.2	2.1E-03
Hexane	00110-54-3				101	5.0E-02
Lead	07439-92-1				2.8E-02	1.4E-05
Manganese	07439-96-5				2.1E-02	1.1E-05
Mercury	07439-97-6				1.5E-02	7.3E-06
Naphthalene	00091-20-3				3.4E-02	1.7E-05
Nickel	07440-02-0				0.12	5.9E-05
Polycyclic Organic Matter	POM				4.9E-03	2.5E-06
Selenium	07782-49-2				1.3E-03	6.7E-07
Toluene	00108-88-3				0.19	9.5E-05

Table 4
DXG Combustion[a]
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[b] (lb/MMscf)	Hourly Gas Flowrate (MMscf/hr)	Commissioning Plan Projected Fuel Usage[c] (MMscf/year)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)

Notes:

(a) DX gas is a trademarked exothermic gas used to establish the atmosphere of the annealing furnaces. The gas is similar to combusted natural gas, so emissions were estimated using natural gas emission factors.
(b) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.4 - Natural Gas Combustion (July 1998).
Greenhouse gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.
(c) The Commissioning Plan Projected Fuel Usage is based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.
(d) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Fuel Usage (MMscf/yr) x Emission Factor (lb/MMscf).
Projected Actual Annual Emissions (ton/yr) = Projected Actual Annual Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 5

Fuel Oil Boiler Combustion

Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc

Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[a] ($lb/10^3$ gal)	Total Heat Input Rating (MMBtu/hr)	Commissioning Plan Projected Fuel Usage[b] (gal/year)	Projected Actual Annual Emissions[c] (lb/yr)	(tpy)
U-COMB1			**141**	**56,634**		
Three boilers (two at 42 MMBtu/hr ea and one at 57.2 MMBtu/hr) firing No. 2 fuel oil						
Carbon Monoxide	00630-08-0	5.0			283	0.14
Nitrogen Oxides	NY210-00-0	20			1,133	0.57
Sulfur Dioxide	07446-09-5	0.21			12	6.0E-03
Particulate Matter	NY075-00-0	3.3			187	9.3E-02
PM10	NY075-00-5	1.0			57	2.8E-02
PM2.5	NY075-02-5	0.25			14	7.1E-03
Carbon Dioxide	00124-38-9	23,179			1,312,719	656
Nitrous Oxide	10024-97-2	0.93			52	2.6E-02
Methane	00074-82-8	0.19			10	5.2E-03
Volatile Organic Compounds	NY998-00-0	0.20			11	5.7E-03
Total HAPs	NY100-00-0				4.0	2.0E-03
Arsenic	07440-38-2	5.6E-04			3.2E-02	1.6E-05
Beryllium	07440-41-7	4.2E-04			2.4E-02	1.2E-05
Cadmium	07440-43-9	4.2E-04			2.4E-02	1.2E-05
Chromium	07440-47-3	4.2E-04			2.4E-02	1.2E-05
Formaldehyde	00050-00-0	6.1E-02			3.5	1.7E-03
Lead	07439-92-1	1.3E-03			7.1E-02	3.6E-05
Manganese	07439-96-5	8.4E-04			4.8E-02	2.4E-05
Mercury	07439-96-5	4.2E-04			2.4E-02	1.2E-05
Nickel	07440-02-0	4.2E-04			2.4E-02	1.2E-05
Polycyclic Organic Matter	POM	3.3E-03			0.19	9.3E-05
Selenium	07782-49-2	2.1E-03			0.12	5.9E-05

Table 5

Fuel Oil Boiler Combustion
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	Emission Factor[(a)] (lb / 10^3 gal)	Total Heat Input Rating (MMBtu / hr)	Commissioning Plan Projected Fuel Usage[(b)] (gal / year)	Projected Actual Annual Emissions[(c)] (lb / yr)	(tpy)

Notes:

(a) The emission factors were obtained from the USEPA's Compilation of Air Pollution Emission Factors (AP-42), Volume I, 5th Edition, Section 1.3 - Fuel Oil Combustion (September 1998).

Greenhouse Gas emission factors were obtained from 40 CFR Part 98 Subpart C Tables C-1 and C-2.

(b) The Commissioning Plan Projected Fuel Usage is the equivalent amount of #2 fuel oil that corresponds to the 2021 amount of #6 fuel oil combusted by ratioing the fuel heating values.

(c) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Fuel Usage (gal/yr) x Emission Factor (lb/10^3 gal) ÷ 1000 (gal/10^3 gal).

Projected Actual Annual Emissions (ton/yr) = Projected Actual Annual Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 6
Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g/HP-hr)	AP-42 Emission Factor[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[c] (hr/yr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
Powerhouse				**125**	**168**	**1.2**	**25**		
Diesel Fired 1960 GM Emergency Generator									
Carbon Monoxide	00630-08-0	---	0.95					27	1.4E-02
Nitrogen Oxides	NY210-00-0	---	4.4					127	6.4E-02
Sulfur Dioxide	07446-09-5	---	0.29					8.4	4.2E-03
PM (Total)	NY075-00-0	---	0.31					8.9	4.5E-03
PM_{10}	NY075-00-5	---	0.31					8.9	4.5E-03
$PM_{2.5}$	NY075-02-5	---	0.31					8.9	4.5E-03
Volatile Organic Compounds	NY998-00-0	---	0.36					10	5.2E-03
Carbon Dioxide	00124-38-9	---	164					4,730	2.4
Total HAPs	NY100-00-0							0.11	5.5E-05
Acenaphthene	00083-32-9	---	1.4E-06					4.1E-05	2.0E-08
Acenaphthylene	00208-96-8	---	5.1E-06					1.5E-04	7.3E-08
Acetaldehyde	00075-07-0	---	7.7E-04					2.2E-02	1.1E-05
Acrolein	00107-02-8	---	9.3E-05					2.7E-03	1.3E-06
Anthracene	00120-12-7	---	1.9E-06					5.4E-05	2.7E-08
Benzene	00071-43-2	---	9.3E-04					2.7E-02	1.3E-05
Benz(a)anthracene	00056-55-3	---	1.7E-06					4.8E-05	2.4E-08
Benz(a)pyrene	00050-32-8	---	1.9E-07					5.4E-06	2.7E-09
Benzo(b)fluoranthene	00205-99-2	---	9.9E-08					2.9E-06	1.4E-09
Benzo(g,h,i)perylene	00191-24-2	---	4.9E-07					1.4E-05	7.1E-09
Benzo(k)fluoranthene	00207-08-9	---	1.6E-07					4.5E-06	2.2E-09
Chrysene	00218-01-9	---	3.5E-07					1.0E-05	5.1E-09
Dibenzo(a,h)anthracene	00053-70-3	---	5.8E-07					1.7E-05	8.4E-09
Fluoranthene	00206-44-0	---	7.6E-06					2.2E-04	1.1E-07
Fluorene	00086-73-7	---	2.9E-05					8.4E-04	4.2E-07
Formaldehyde	00050-00-0	---	1.2E-03					3.4E-02	1.7E-05
Indeno(1,2,3-cd)pyrene	00193-39-5	---	3.8E-07					1.1E-05	5.4E-09
Naphthalene	00091-20-3	---	8.5E-05					2.4E-03	1.2E-06
Phenanthrene	00085-01-8	---	2.9E-05					8.5E-04	4.2E-07

Table 6

Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g/HP-hr)	AP-42 Emission Factor[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[c] (hr/yr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
Pyrene	00129-00-0	---	4.8E-06					1.4E-04	6.9E-08
Toluene	00108-88-3	---	4.1E-04					1.2E-02	5.9E-06
Xylenes	01330-20-7	---	2.9E-04					8.2E-03	4.1E-06
Soap House				**2000**	**2680**	**19**	**8.0**		
Diesel Fired 1999 Caterpillar Emergency Generator									
Carbon Monoxide	00630-08-0	---	0.85					128	6.4E-02
Nitrogen Oxides	NY210-00-0	---	3.2					480	0.24
Sulfur Dioxide	07446-09-5	---	1.5E-03					0.23	1.1E-04
PM (Total)	NY075-00-0	---	7.0E-02					10	5.2E-03
PM_{10}	NY075-00-5	---	5.7E-02					8.6	4.3E-03
$PM_{2.5}$	NY075-02-5	---	4.8E-02					7.2	3.6E-03
Volatile Organic Compounds	NY998-00-0	---	8.2E-02					12	6.1E-03
Carbon Dioxide	00124-38-9	---	165					24,763	12
Methane	00074-82-8	---	8.1E-03					1.2	6.1E-04
Total HAPs	NY100-00-0							0.24	1.2E-04
Acenaphthene	00083-32-9	---	4.7E-06					7.0E-04	3.5E-07
Acenaphthylene	00208-96-8	---	9.2E-06					1.4E-03	6.9E-07
Acetaldehyde	00075-07-0	---	2.5E-05					3.8E-03	1.9E-06
Acrolein	00107-02-8	---	7.9E-06					1.2E-03	5.9E-07
Anthracene	00120-12-7	---	1.2E-06					1.8E-04	9.2E-08
Benzene	00071-43-2	---	7.8E-04					0.12	5.8E-05
Benz(a)anthracene	00056-55-3	---	6.2E-07					9.3E-05	4.7E-08
Benz(a)pyrene	00050-32-8	---	2.6E-07					3.9E-05	1.9E-08
Benzo(b)fluoranthene	00205-99-2	---	1.1E-06					1.7E-04	8.3E-08
Benzo(g,h,i)perylene	00191-24-2	---	5.6E-07					8.3E-05	4.2E-08
Benzo(k)fluoranthene	00207-08-9	---	2.2E-07					3.3E-05	1.6E-08
Chrysene	00218-01-9	---	1.5E-06					2.3E-04	1.1E-07
Dibenzo(a,h)anthracene	00053-70-3	---	3.5E-07					5.2E-05	2.6E-08
Fluoranthene	00206-44-0	---	4.0E-06					6.0E-04	3.0E-07

Table 6
Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g/HP-hr)	AP-42 Emission Factor[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[c] (hr/yr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
Fluorene	00086-73-7	---	1.3E-05					1.9E-03	9.6E-07
Formaldehyde	00050-00-0	---	7.9E-05					1.2E-02	5.9E-06
Indeno(1,2,3-cd)pyrene	00193-39-5	---	4.1E-07					6.2E-05	3.1E-08
Naphthalene	00091-20-3	---	1.3E-04					2.0E-02	9.8E-06
Phenanthrene	00085-01-8	---	4.1E-05					6.1E-03	3.1E-06
Pyrene	00129-00-0	---	3.7E-06					5.6E-04	2.8E-07
Toluene	00108-88-3	---	2.8E-04					4.2E-02	2.1E-05
Xylenes	01330-20-7	---	1.9E-04					2.9E-02	1.4E-05
Main Office				**25**	**34**	**0.23**	**20**		
Natural Gas Fired 2004 Generac Emergency Generator									
Carbon Monoxide	00630-08-0	---	3.7					17	8.7E-03
Nitrogen Oxides	NY210-00-0	---	2.2					10	5.2E-03
Sulfur Dioxide	07446-09-5	---	5.9E-04					2.8E-03	1.4E-06
PM (Total)	NY075-00-0	---	1.9E-02					9.1E-02	4.6E-05
PM_{10}	NY075-00-5	---	9.5E-03					4.5E-02	2.2E-05
$PM_{2.5}$	NY075-02-5	---	9.5E-03					4.5E-02	2.2E-05
Volatile Organic Compounds	NY998-00-0	---	3.0E-02					0.14	6.9E-05
Carbon Dioxide	00124-38-9	---	110					516	0.26
Methane	00074-82-8	---	0.23					1.1	5.4E-04
Total HAPs	NY100-00-0							0.13	6.7E-05
Acetaldehyde	00075-07-0	---	2.8E-03					1.3E-02	6.5E-06
Acrolein	00107-02-8	---	2.6E-03					1.2E-02	6.2E-06
Benzene	00071-43-2	---	1.6E-03					7.4E-03	3.7E-06
Carbon Tetrachloride	00056-23-5	---	1.8E-05					8.3E-05	4.2E-08
Chlorobenzene	00108-90-7	---	1.3E-05					6.1E-05	3.0E-08
Chloroform	00067-66-3	---	1.4E-05					6.4E-05	3.2E-08
1,1-Dichloroethane	00075-34-3	---	1.1E-05					5.3E-05	2.6E-08
1,2-Dichloroethane	00107-06-2	---	1.1E-05					5.3E-05	2.6E-08
1,2-Dichloropropane	00078-87-5	---	1.3E-05					6.1E-05	3.0E-08

Table 6
Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g/HP-hr)	AP-42 Emission Factor[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[c] (hr/yr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
1,3-Dichloropropene	00542-75-6	---	1.3E-05					6.0E-05	3.0E-08
Ethylbenzene	00100-41-4	---	2.5E-05					1.2E-04	5.8E-08
Ethylene Dibromide	00106-93-4	---	2.1E-05					1.0E-04	5.0E-08
Formaldehyde	00050-00-0	---	2.1E-02					9.6E-02	4.8E-05
Naphthalene	00091-20-3	---	9.7E-05					4.6E-04	2.3E-07
PAH	130498-29-2	---	1.4E-04					6.6E-04	3.3E-07
Styrene	00100-42-5	---	1.2E-05					5.6E-05	2.8E-08
1,1,2,2-Tetrachloroethane	00079-34-5	---	2.5E-05					1.2E-04	5.9E-08
Toluene	00108-88-3	---	5.6E-04					2.6E-03	1.3E-06
1,1,2-Trichloroethane	00079-00-5	---	1.5E-05					7.2E-05	3.6E-08
Vinyl Chloride	00075-01-4	---	7.2E-06					3.4E-05	1.7E-08
Xylenes	01330-20-7	---	2.0E-04					9.1E-04	4.6E-07
Coreless Furnace Generator				**250**	**335**	**2.3**	**12**		
Natural Gas Fired 2023 Generac Emergency Generator									
Carbon Monoxide	00630-08-0	4.0	---					35	1.8E-02
Nitrogen Oxides	NY210-00-0	2.0	---					18	8.9E-03
Sulfur Dioxide	07446-09-5	---	5.9E-04					1.7E-02	8.3E-06
PM (Total)	NY075-00-0	---	1.0E-02					0.28	1.4E-04
PM_{10}	NY075-00-5	---	7.7E-05					2.2E-03	1.1E-06
$PM_{2.5}$	NY075-02-5	---	7.7E-05					2.2E-03	1.1E-06
Volatile Organic Compounds	NY998-00-0	1.0	---					8.9	4.4E-03
Carbon Dioxide	00124-38-9	---	110					3,095	1.5E+00
Methane	00074-82-8	---	1.3					35	1.8E-02
Total HAPs	NY100-00-0							2.0	9.8E-04
Acenaphthene	00083-32-9	---	1.3E-06					3.5E-05	1.8E-08
Acenaphthylene	00208-96-8	---	5.5E-06					1.6E-04	7.8E-08
Acetaldehyde	00075-07-0	---	8.4E-03					0.24	1.2E-04
Acrolein	00107-02-8	---	5.1E-03					0.14	7.2E-05
Benzene	00071-43-2	---	4.4E-04					1.2E-02	6.2E-06

Table 6

Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g/HP-hr)	AP-42 Emission Factor[b] (lb/MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[c] (hr/yr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
Benzo(b)fluoranthene	00205-99-2	---	1.7E-07					4.7E-06	2.3E-09
Benzo(g,h,i)perylene	00191-24-2	---	4.1E-07					1.2E-05	5.8E-09
Benzo(e)pyrene	00192-97-2	---	4.2E-07					1.2E-05	5.8E-09
Biphenyl	00092-52-4	---	2.1E-04					6.0E-03	3.0E-06
Carbon Tetrachloride	00056-23-5	---	3.7E-05					1.0E-03	5.2E-07
Chlorobenzene	00108-90-7	---	3.0E-05					8.6E-04	4.3E-07
Chloroethane	00075-00-3	---	1.9E-06					5.3E-05	2.6E-08
Chloroform	00067-66-3	---	2.9E-05					8.0E-04	4.0E-07
Chrysene	00218-01-9	---	6.9E-07					2.0E-05	9.8E-09
1,1-Dichloroethane	00075-34-3	---	2.4E-05					6.6E-04	3.3E-07
1,2-Dichloroethane	00107-06-2	---	2.4E-05					6.6E-04	3.3E-07
1,2-Dichloropropane	00078-87-5	---	2.7E-05					7.6E-04	3.8E-07
1,3-Dichloropropene	00542-75-6	---	2.6E-05					7.4E-04	3.7E-07
Ethylbenzene	00100-41-4	---	4.0E-05					1.1E-03	5.6E-07
Ethylene Dibromide	00106-93-4	---	4.4E-05					1.2E-03	6.2E-07
Fluoranthene	00206-44-0	---	1.1E-06					3.1E-05	1.6E-08
Fluorene	00086-73-7	---	5.7E-06					1.6E-04	8.0E-08
Formaldehyde	00050-00-0	---	5.3E-02					1.5	7.4E-04
Hexane	00110-54-3	---	1.1E-03					3.1E-02	1.6E-05
Naphthalene	00091-20-3	---	7.4E-05					2.1E-03	1.0E-06
PAH	130498-29-2	---	2.7E-05					7.6E-04	3.8E-07
Phenanthrene	00085-01-8	---	1.0E-05					2.9E-04	1.5E-07
Phenol	00108-95-2	---	2.4E-05					6.8E-04	3.4E-07
Pyrene	00129-00-0	---	1.4E-06					3.8E-05	1.9E-08
Styrene	00100-42-5	---	2.4E-05					6.6E-04	3.3E-07
1,1,2,2-Tetrachloroethane	00079-34-5	---	4.0E-05					1.1E-03	5.6E-07
Toluene	00108-88-3	---	4.1E-04					1.1E-02	5.7E-06
1,1,2-Trichloroethane	00079-00-5	---	3.2E-05					8.9E-04	4.5E-07
2,2,4-Trimethylpentane	00540-84-1	---	2.5E-04					7.0E-03	3.5E-06
Vinyl Chloride	00075-01-4	---	1.5E-05					4.2E-04	2.1E-07

Table 6

Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[a] (g / HP-hr)	AP-42 Emission Factor[b] (lb / MMBtu)	Power Output Rating[c] (kW)	Power Output Rating[c] (HP)	Maximum Heat Input[d] (MMBtu / hr)	Commissioning Plan Projected Operating Hours[c] (hr / yr)	Projected Actual Annual Emissions[e] (lb / yr)	(tpy)
Xylenes	01330-20-7	---	1.8E-04					5.2E-03	2.6E-06
Total									
Carbon Monoxide	00630-08-0							208	0.10
Nitrogen Oxides	NY210-00-0							636	0.32
Sulfur Dioxide	07446-09-5							8.6	4.3E-03
PM (Total)	NY075-00-0							20	9.9E-03
PM_{10}	NY075-00-5							18	8.8E-03
$PM_{2.5}$	NY075-02-5							16	8.1E-03
Volatile Organic Compounds	NY998-00-0							32	1.6E-02
Carbon Dioxide	00124-38-9							33,105	17
Methane	00074-82-8							37	1.9E-02
Total HAPs	NY100-00-0							2.4	1.2E-03
Acenaphthene	00083-32-9							7.8E-04	3.9E-07
Acenaphthylene	00208-96-8							1.7E-03	8.4E-07
Acetaldehyde	00075-07-0							0.27	1.4E-04
Acrolein	00107-02-8							0.16	8.0E-05
Anthracene	00120-12-7							2.4E-04	1.2E-07
Benzene	00071-43-2							0.16	8.2E-05
Benz(a)anthracene	00056-55-3							1.4E-04	7.1E-08
Benz(a)pyrene	00050-32-8							4.4E-05	2.2E-08
Benzo(b)fluoranthene	00205-99-2							1.7E-04	8.7E-08
Benzo(g,h,i)perylene	00191-24-2							1.1E-04	5.5E-08
Benzo(e)pyrene	00192-97-2							1.2E-05	5.8E-09
Benzo(k)fluoranthene	00207-08-9							3.7E-05	1.9E-08
Biphenyl	00092-52-4							6.0E-03	3.0E-06
Carbon Tetrachloride	00056-23-5							1.1E-03	5.6E-07
Chlorobenzene	00108-90-7							9.2E-04	4.6E-07
Chloroethane	00075-00-3							5.3E-05	2.6E-08
Chloroform	00067-66-3							8.7E-04	4.3E-07

Table 6

Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[(a)] (g/HP-hr)	AP-42 Emission Factor[(b)] (lb/MMBtu)	Power Output Rating[(c)] (kW)	Power Output Rating[(c)] (HP)	Maximum Heat Input[(d)] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[(c)] (hr/yr)	Projected Actual Annual Emissions[(e)] (lb/yr)	(tpy)
Chrysene	00218-01-9							2.6E-04	1.3E-07
Dibenzo(a,h)anthracene	00053-70-3							6.9E-05	3.4E-08
1,1-Dichloroethane	00075-34-3							7.2E-04	3.6E-07
1,2-Dichloroethane	00107-06-2							7.2E-04	3.6E-07
1,2-Dichloropropane	00078-87-5							8.2E-04	4.1E-07
1,3-Dichloropropene	00542-75-6							8.0E-04	4.0E-07
Ethylbenzene	00100-41-4							1.2E-03	6.2E-07
Ethylene Dibromide	00106-93-4							1.3E-03	6.7E-07
Ethylene Dichloride	00107-06-2							7.2E-04	3.6E-07
Fluoranthene	00206-44-0							8.6E-04	4.3E-07
Fluorene	00086-73-7							2.9E-03	1.5E-06
Formaldehyde	00050-00-0							1.6	8.1E-04
Hexane	00110-54-3							3.1E-02	1.6E-05
Indeno(1,2,3-cd)pyrene	00193-39-5							7.3E-05	3.6E-08
Naphthalene	00091-20-3							2.5E-02	1.2E-05
PAH	130498-29-2							1.4E-03	7.1E-07
Phenanthrene	00085-01-8							7.3E-03	3.6E-06
Phenol	00108-95-2							6.8E-04	3.4E-07
Pyrene	00129-00-0							7.3E-04	3.7E-07
Styrene	00100-42-5							7.2E-04	3.6E-07
1,1,2,2-Tetrachloroethane	00079-34-5							1.2E-03	6.2E-07
Toluene	00108-88-3							6.8E-02	3.4E-05
1,1,2-Trichloroethane	00079-00-5							9.7E-04	4.8E-07
2,2,4-Trimethylpentane	00540-84-1							7.0E-03	3.5E-06
Vinyl Chloride	00075-01-4							4.5E-04	2.3E-07
Xylenes	01330-20-7							4.3E-02	2.2E-05

Notes:

(a) The emission factors were based on the emissions standards in 40 CFR 60, Subparts IIII or JJJJ.

(b) The emission factors were obtained from USEPA's Compiliation of Air Pollution Emission Factors, Volume I, Fifth Edition, AP-42, Chapter 3 *Stationary Internal*

Table 6

Facility-Wide Emergency Generators
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Building, Sources, and Pollutants	CAS Number	NSPS Emission Factor[(a)] (g/HP-hr)	AP-42 Emission Factor[(b)] (lb/MMBtu)	Power Output Rating[(c)] (kW)	Power Output Rating[(c)] (HP)	Maximum Heat Input[(d)] (MMBtu/hr)	Commissioning Plan Projected Operating Hours[(c)] (hr/yr)	Projected Actual Annual Emissions[(e)] (lb/yr)	(tpy)

(c) Power Output Rating and Actual Operating Hours were provided by the client.
(d) Maximum Heat Input (MMBtu/hr) = Power Output Rating (HP) x 7,000 (Btu/HP-hr) ÷ 1,000,000 (Btu/MMBtu).
(e) Projected Actual Annual Emissions (lb/yr) = NSPS Emission Factor (g/HP-hr) x Power Output Rating (HP) x Actual Operating Hours (hr/yr) ÷ 453.59 (g/lb).
Projected Actual Annual Emissions (lb/yr) = AP-42 Emission Factor (lb/MMBtu) x Maximum Heat Input (MMBtu/hr) x Actual Operating Hours (hr/yr).
Projected Actual Annual Emissions (ton/yr) = Projected Actual Annual Emissions (lb/yr) ÷ 2000 (lb/ton).

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)] (%)	Commissioning Plan Projected Operating Hours[(b)] (hr/yr)	Post-Control Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)
BH1 Process (Cyclone/Baghouse EP 00039)			**4,220**					
Total Particulate Matter	NY075-00-0			0.33	95	6.6	1,393	0.70
Total PM_{10}	NY075-00-5			0.24	95	4.8	1,013	0.51
Total $PM_{2.5}$	NY075-02-5			0.15	95	2.9	612	0.31
Total Filterable PM	F-PM			0.20	---	---	844	0.42
Filterable PM_{10}	F-PM10			0.11	---	---	464	0.23
Filterable $PM_{2.5}$	F-PM2.5			1.5E-02	---	---	63	3.2E-02
Condensible PM	C-PM			0.13	---	---	549	0.27
Graphite	07782-42-5	40		0.13	95	2.6	557	0.28
Copper oxide	01317-38-0	31		0.10	95	2.0	425	0.21
Iron oxide	01309-37-1	9.1		3.0E-02	95	0.60	126	6.3E-02
Aluminum oxide	01344-28-1	0.27		9.0E-04	95	1.8E-02	3.8	1.9E-03
Zinc oxide	01314-13-2	8.4E-02		2.8E-04	95	5.5E-03	1.2	5.8E-04
Magnesium oxide	01309-48-4	2.3E-02		7.7E-05	95	1.5E-03	0.33	1.6E-04
Barium oxide	01304-28-5	3.7E-03		1.2E-05	95	2.4E-04	5.1E-02	2.6E-05
Silver oxide	20667-12-3	9.7E-04		3.2E-06	95	6.4E-05	1.4E-02	6.8E-06
Total HAPs	NY100-00-0						0.83	4.2E-04
Lead oxide	01314-41-6	3.3E-02		1.1E-04	95	2.2E-03	0.46	2.3E-04
Manganese oxide	01313-13-9	2.3E-02		7.7E-05	95	1.5E-03	0.33	1.6E-04
Nickel oxide	01313-99-1	2.1E-03		6.9E-06	95	1.4E-04	2.9E-02	1.5E-05
Cadmium oxide	01306-19-0	6.8E-04		2.2E-06	95	4.5E-05	9.4E-03	4.7E-06
Chromium oxide	01333-82-0	9.3E-04		3.1E-06	95	6.2E-05	1.3E-02	6.5E-06
Mercury oxide	21908-53-2	8.9E-06		2.9E-08	95	5.8E-07	1.2E-04	6.2E-08
BP1 Process (By-pass, Cyclone EP 00039)			**43.2**					
Total Particulate Matter	NY075-00-0			3.1	10	3.5	135	6.7E-02
Total PM_{10}	NY075-00-5			5.2	10	5.8	225	0.11
Total $PM_{2.5}$	NY075-02-5			3.2	10	3.6	138	6.9E-02

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)]	Commissioning Plan Projected Operating Hours[(b)]	Post-Control Emission Factor[(c)]	Control Efficiency[(d)]	Emission Rate Potential[(e)]	Projected Actual Annual Emissions[(f)]	
		(%)	(hr/yr)	(lb/hr)	(%)	(lb/hr)	(lb/yr)	(tpy)
Graphite	07782-42-5	40		2.1	10	2.3	90	4.5E-02
Copper oxide	01317-38-0	31		1.6	10	1.8	69	3.4E-02
Iron oxide	01309-37-1	9.1		0.47	10	0.52	20	1.0E-02
Aluminum oxide	01344-28-1	0.27		1.4E-02	10	1.6E-02	0.62	3.1E-04
Zinc oxide	01314-13-2	8.4E-02		4.4E-03	10	4.8E-03	0.19	9.4E-05
Magnesium oxide	01309-48-4	2.3E-02		1.2E-03	10	1.4E-03	5.3E-02	2.6E-05
Barium oxide	01304-28-5	3.7E-03		1.9E-04	10	2.1E-04	8.3E-03	4.1E-06
Silver oxide	20667-12-3	9.7E-04		5.0E-05	10	5.6E-05	2.2E-03	1.1E-06
Total HAPs	NY100-00-0						0.13	6.3E-05
Lead oxide	01314-41-6	3.3E-02		1.7E-03	10	1.9E-03	7.4E-02	3.7E-05
Manganese oxide	01313-13-9	2.3E-02		1.2E-03	10	1.4E-03	5.3E-02	2.6E-05
Nickel oxide	01313-99-1	2.1E-03		1.1E-04	10	1.2E-04	4.7E-03	2.3E-06
Cadmium oxide	01306-19-0	6.8E-04		3.5E-05	10	3.9E-05	1.5E-03	7.6E-07
Chromium oxide	01333-82-0	9.3E-04		4.9E-05	10	5.4E-05	2.1E-03	1.0E-06
Mercury oxide	21908-53-2	8.9E-06		4.6E-07	10	5.1E-07	2.0E-05	9.9E-09
BH2 Process (Cyclone/Baghouse EP 00040)			**3,987**					
Total Particulate Matter	NY075-00-0			2.0	99	200	7,974	4.0
Total PM_{10}	NY075-00-5			0.98	99	98	3,907	2.0
Total $PM_{2.5}$	NY075-02-5			0.29	99	29	1,164	0.58
Total Filterable PM	F-PM			1.8	---	---	7,097	3.5
Filterable PM_{10}	F-PM10			0.76	---	---	3,030	1.5
Filterable $PM_{2.5}$	F-PM2.5			7.2E-02	---	---	287	0.14
Condensible PM	C-PM			0.22	---	---	877	0.44
Graphite	07782-42-5	40		0.80	99	80	3,190	1.6
Copper oxide	01317-38-0	31		0.61	99	61	2,436	1.2
Iron oxide	01309-37-1	9.1		0.18	99	18	724	0.36
Aluminum oxide	01344-28-1	0.27		5.5E-03	99	0.55	22	1.1E-02

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)] (%)	Commissioning Plan Projected Operating Hours[(b)] (hr/yr)	Post-Control Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)
Zinc oxide	01314-13-2	8.4E-02		1.7E-03	99	0.17	6.7	3.3E-03
Magnesium oxide	01309-48-4	2.3E-02		4.7E-04	99	4.7E-02	1.9	9.3E-04
Barium oxide	01304-28-5	3.7E-03		7.3E-05	99	7.3E-03	0.29	1.5E-04
Silver oxide	20667-12-3	9.7E-04		1.9E-05	99	1.9E-03	7.7E-02	3.9E-05
Total HAPs	NY100-00-0						4.5	2.2E-03
Lead oxide	01314-41-6	3.3E-02		6.5E-04	99	6.5E-02	2.6	1.3E-03
Manganese oxide	01313-13-9	2.3E-02		4.7E-04	99	4.7E-02	1.9	9.3E-04
Nickel oxide	01313-99-1	2.1E-03		4.2E-05	99	4.2E-03	0.17	8.3E-05
Cadmium oxide	01306-19-0	6.8E-04		1.4E-05	99	1.4E-03	5.4E-02	2.7E-05
Chromium oxide	01333-82-0	9.3E-04		1.9E-05	99	1.9E-03	7.4E-02	3.7E-05
Mercury oxide	21908-53-2	8.9E-06		1.8E-07	99	1.8E-05	7.1E-04	3.5E-07
BP2 Process (By-pass, Cyclone EP 00040)			**0.08**					
Total Particulate Matter	NY075-00-0			9.4	10	10	0.75	3.8E-04
Total PM_{10}	NY075-00-5			11	10	12	0.85	4.2E-04
Total $PM_{2.5}$	NY075-02-5			1.9	10	2.1	0.15	7.4E-05
Graphite	07782-42-5	40		4.2	10	4.7	0.34	1.7E-04
Copper oxide	01317-38-0	31		3.2	10	3.6	0.26	1.3E-04
Iron oxide	01309-37-1	9.1		0.96	10	1.1	7.7E-02	3.8E-05
Aluminum oxide	01344-28-1	0.27		2.9E-02	10	0.03	2.3E-03	1.2E-06
Zinc oxide	01314-13-2	8.4E-02		8.9E-03	10	0.01	7.1E-04	3.5E-07
Magnesium oxide	01309-48-4	2.3E-02		2.5E-03	10	0.00	2.0E-04	9.9E-08
Barium oxide	01304-28-5	3.7E-03		3.9E-04	10	4.3E-04	3.1E-05	1.6E-08
Silver oxide	20667-12-3	9.7E-04		1.0E-04	10	1.1E-04	8.2E-06	4.1E-09
Total HAPs	NY100-00-0						4.8E-04	2.4E-07
Lead oxide	01314-41-6	3.3E-02		3.5E-03	10	3.8E-03	2.8E-04	1.4E-07
Manganese oxide	01313-13-9	2.3E-02		2.5E-03	10	2.7E-03	2.0E-04	9.9E-08
Nickel oxide	01313-99-1	2.1E-03		2.2E-04	10	2.5E-04	1.8E-05	8.8E-09

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Commissioning Plan Projected Operating Hours[b] (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Projected Actual Annual Emissions[f] (lb/yr)	(tpy)
Cadmium oxide	01306-19-0	6.8E-04		7.2E-05	10	7.9E-05	5.7E-06	2.9E-09
Chromium oxide	01333-82-0	9.3E-04		9.9E-05	10	1.1E-04	7.9E-06	4.0E-09
Mercury oxide	21908-53-2	8.9E-06		9.4E-07	10	1.0E-06	7.5E-08	3.7E-11
Total								
Total Particulate Matter	NY075-00-0						9,502	4.8
Total PM_{10}	NY075-00-5						5,146	2.6
Total $PM_{2.5}$	NY075-02-5						1,914	0.96
Graphite	07782-42-5						3,837	1.9
Copper oxide	01317-38-0						2,930	1.5
Iron oxide	01309-37-1						871	0.44
Aluminum oxide	01344-28-1						26	1.3E-02
Zinc oxide	01314-13-2						8.0	4.0E-03
Magnesium oxide	01309-48-4						2.2	1.1E-03
Barium oxide	01304-28-5						0.35	1.8E-04
Silver oxide	20667-12-3						9.3E-02	4.7E-05
Total HAPs	NY100-00-0						5.4	2.7E-03
Lead oxide	01314-41-6						3.1	1.6E-03
Manganese oxide	01313-13-9						2.2	1.1E-03
Nickel oxide	01313-99-1						0.20	1.0E-04
Cadmium oxide	01306-19-0						6.5E-02	3.2E-05
Chromium oxide	01333-82-0						9.0E-02	4.5E-05
Mercury oxide	21908-53-2						8.5E-04	4.2E-07

Notes:
(a) The composition of the particulate is based on analysis of a sample collected from dust accumulated in the baghouse.

Table 7
U-CAST1 - Furnaces/Baghouses and Bypass
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)] (%)	Commissioning Plan Projected Operating Hours[(b)] (hr/yr)	Post-Control Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)

(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(c) PM Emission Factors for Process BH1 and BH2 are based on testing conducted in May 2023; testing included filterable PM, condensable PM, and particle size distribution, and represent post-control emissions.

Individual constituent Emission Factors were calculated by multiplying the Total Particulate Matter Emission Factor by the estimated percentage of the constituent.

For Process BP1 and BP2, the hourly Total Particulate Emission Factors were obtained from the June, 2008 source emissions test report provided by Revere. The hourly PM10 and PM2.5 Emission Factors were obtained from the February, 2002 source emissions test report provided by Revere. Both sets represent post-control emissions.

Individual constituent Emission Factors were calculated by multiplying the Total PM_{10} Emission Factor by the estimated percentage of the constituent. Due to the different test methods used between the 2002 and 2008 source testing, the PM_{10} emission factor is higher than the total emission factor. Therefore, this higher value was used as the basis for the toxics in order to be conservative.

(d) The EP00039 cyclone-baghouse control efficiency was obtained from the February 6, 2002 source emissions test report provided by Revere. The EP00040 cyclone-baghouse control efficiency was 99.7% for total particulate matter per the February 6, 2002 source emissions test report. To be conservative, 99% was used in the EP 00040 emissions calculations, which corresponds to the control efficiency for $PM_{2.5}$ provided in AP-42 Appendix B.2 Table B.2-3 for fabric filters. Control efficiencies for the bypass cyclones were taken from values provided in AP-42 Appendix B.2 Table B.2-3 for single cyclones.

(e) Emission Rate Potential (lb/hr) = Post-Control Emission Factor (lb/hr) ÷ (1- Control Efficiency) (%).

(f) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Factor (lb/hr).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 8
U-CAST1 - Central Vacuum System
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Post-Control Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Projected Actual Annual Emissions[f] (lb/yr)	Projected Actual Annual Emissions[f] (tpy)
VAC Process (Single Cyclone/Fabric Filter EP 00602)			835					
Total Particulate Matter[h]	NY075-00-0	100		3.6E-02	99.9	36	30	1.5E-02
Total PM_{10}[h]	NY075-00-5	100		3.6E-02	99.9	36	30	1.5E-02
$PM_{2.5}$[h]	NY075-02-5	100		3.6E-02	99.9	36	30	1.5E-02
Graphite	07782-42-5	40		1.4E-02	99.9	14	12	6.0E-03
Copper oxide	01317-38-0	31		1.1E-02	99.9	11	9.2	4.6E-03
Iron oxide	01309-37-1	9.1		3.3E-03	99.9	3.3	2.7	1.4E-03
Aluminum oxide	01344-28-1	0.27		9.9E-05	99.9	9.9E-02	8.2E-02	4.1E-05
Zinc oxide	01314-13-2	8.4E-02		3.0E-05	99.9	3.0E-02	2.5E-02	1.3E-05
Magnesium oxide	01309-48-4	2.3E-02		8.4E-06	99.9	8.4E-03	7.0E-03	3.5E-06
Barium oxide	01304-28-5	3.7E-03		1.3E-06	99.9	1.3E-03	1.1E-03	5.5E-07
Silver oxide	20667-12-3	9.7E-04		3.5E-07	99.9	3.5E-04	2.9E-04	1.5E-07
Total HAPs	NY100-00-0						1.8E-02	9.0E-06
Lead oxide	01314-41-6	3.3E-02		1.2E-05	99.9	1.2E-02	9.8E-03	4.9E-06
Manganese oxide	01313-13-9	2.3E-02		8.4E-06	99.9	8.4E-03	7.0E-03	3.5E-06
Nickel oxide	01313-99-1	2.1E-03		7.5E-07	99.9	7.5E-04	6.3E-04	3.1E-07
Cadmium oxide	01306-19-0	6.8E-04		2.4E-07	99.9	2.4E-04	2.0E-04	1.0E-07
Chromium oxide	01333-82-0	9.3E-04		3.4E-07	99.9	3.4E-04	2.8E-04	1.4E-07
Mercury oxide	21908-53-2	8.9E-06		3.2E-09	99.9	3.2E-06	2.7E-06	1.3E-09

Notes:
(a) The composition of the particulate is based on testing conducted by Revere of a sample collected from dust accumulated in the baghouse.
(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.
(c) Particulate matter emission factors were based on May 2023 testing conducted on the EP 00040 baghouse vent (0.003 grains/dscf) and the engineering estimate that the Central Vacuum System baghouse provides control to the same outlet concentration. Emission factors for the individual constituents were calculated by multiplying the composition of each constituent by the Particulate Matter emission factor.
(d) The cyclone and fabric filter particulate matter removal efficiency is estimated based on typical control efficiencies provided in USEPA's AP-42 Appendix
(e) The emission rate potentials were calculated by dividing the emission factor by one minus the control efficiency.

Table 8
U-CAST1 - Central Vacuum System
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Post-Control Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	Projected Actual Annual Emissions[(f)] (tpy)

(f) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Factor (lb/hr).
Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(g) It is assumed that all of the Particulate Matter is $PM_{2.5}$.

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Control Efficiency[c] (%)	Emission Rate Potential[d] (lb/hr)	Actual Emission Rate[e] (lb/hr)	Projected Actual Annual Emissions[f] (lb/yr)	Projected Actual Annual Emissions[f] (tpy)
1176 Bliss Mill (Baffle Chamber, EP 00036)			1,312					
Coolant (Baums 882)		40%						
Total Particulate Matter[g]	NY075-00-0	100		10	2.2E-03	2.0E-03	2.6	1.3E-03
PM_{10}[g]	NY075-00-5	100		10	2.2E-03	2.0E-03	2.6	1.3E-03
$PM_{2.5}$[g]	NY075-02-5	100		10	2.2E-03	2.0E-03	2.6	1.3E-03
Hydrotreated light naphthenic petroleum oil	64742-53-6	26		10	5.8E-04	5.2E-04	0.69	3.4E-04
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	22		10	4.9E-04	4.4E-04	0.58	2.9E-04
Fatty alcohol alkoxylate	37335-03-8	5		10	1.1E-04	1.0E-04	0.13	6.6E-05
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1		10	2.2E-05	2.0E-05	2.6E-02	1.3E-05
2-Amino-2-methyl-1-propanol	00124-68-5	1		10	2.2E-05	2.0E-05	2.6E-02	1.3E-05
(Bonderite S-FN 870)		0.00006%						
Total Particulate Matter[g]	NY075-00-0	100		10	3.2E-09	2.9E-09	3.8E-06	1.9E-09
PM_{10}[g]	NY075-00-5	100		10	3.2E-09	2.9E-09	3.8E-06	1.9E-09
$PM_{2.5}$[g]	NY075-02-5	100		10	3.2E-09	2.9E-09	3.8E-06	1.9E-09
Petroleum distillates	Trade Secret #1	100		10	3.2E-09	2.9E-09	3.8E-06	1.9E-09
2-Butoxyethanol	00111-76-2	5		10	1.6E-10	1.4E-10	1.9E-07	9.4E-11
Bactericide (Grotan)		60%						
Total Particulate Matter[g]	NY075-00-0	100		10	3.3E-03	3.0E-03	3.9	2.0E-03
PM_{10}[g]	NY075-00-5	100		10	3.3E-03	3.0E-03	3.9	2.0E-03
$PM_{2.5}$[g]	NY075-02-5	100		10	3.3E-03	3.0E-03	3.9	2.0E-03
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	47		10	1.6E-03	1.4E-03	1.8	9.2E-04
2-Aminoethanol	00141-43-5	1.8		10	6.0E-05	5.4E-05	7.0E-02	3.5E-05

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Control Efficiency[c] (%)	Emission Rate Potential[d] (lb/hr)	Actual Emission Rate[e] (lb/hr)	Projected Actual Annual Emissions[f] (lb/yr)	(tpy)
1706 Hot Mill (Mist Eliminator, EP 00030)			**2,577**					
Coolant (Astro-sol N)								
Total Particulate Matter[g]	NY075-00-0	100		10	0.30	0.27	696	0.35
PM_{10}[g]	NY075-00-5	100		10	0.30	0.27	696	0.35
$PM_{2.5}$[g]	NY075-02-5	100		10	0.30	0.27	696	0.35
Sulfonic acid, petroleum, sodium salts	68608-26-4	20		10	6.0E-02	5.4E-02	139	7.0E-02
Nonylphenol, ethoxylated	09016-45-9	20		10	6.0E-02	5.4E-02	139	7.0E-02
Hexahydro-1,3,5-tris (2-hydroxyethyl)-s-triazine	04719-04-4	20		10	6.0E-02	5.4E-02	139	7.0E-02
Base oil	Trade Secret #3	20		10	6.0E-02	5.4E-02	139	7.0E-02
Alkanolamine	00141-43-5	20		10	6.0E-02	5.4E-02	139	7.0E-02
1721 First Run Down Mill (Mist Eliminator, EP 00029)			**4,739**					
Coolant (Rodshield 68 (QH Everoll A 9883))								
Total Particulate Matter	NY075-00-0	100		10	0.92	0.83	3,933	2.0
Total PM_{10}	NY075-00-5	100		10	0.89	0.80	3,791	1.9
Total $PM_{2.5}$	NY075-02-5	100		10	0.77	0.69	3,270	1.6
Total Filterable PM	F-PM			10	0.29	0.26	---	---
Filterable PM_{10}	F-PM10			10	0.26	0.23	---	---
Filterable $PM_{2.5}$	F-PM2.5			10	0.13	0.12	---	---
Condensible PM[h]	C-PM			10	0.63	0.57	---	---
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	90		10	0.633	0.570	2,701	1.4
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	5		10	3.52E-02	3.17E-02	150	7.5E-02
Amines, tallow alkyl, ethoxylated	61791-26-2	3		10	2.11E-02	1.90E-02	90	4.5E-02

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Control Efficiency[(c)] (%)	Emission Rate Potential[(d)] (lb/hr)	Actual Emission Rate[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)
Propane-1,2-diol	00057-55-6	3		10	2.11E-02	1.90E-02	90	4.5E-02
Sulfonic acids, petroleum, sodium salts	68608-26-4	3		10	2.11E-02	1.90E-02	90	4.5E-02
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	3		10	2.11E-02	1.90E-02	90	4.5E-02
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	3		10	2.11E-02	1.90E-02	90	4.5E-02
1,2-Benzisothiazol-3(2H)-one	02634-33-5	0.3		10	2.11E-03	1.90E-03	9.0	4.5E-03
Trade Secret	Trade Secret #8	10		10	7.04E-02	6.33E-02	300	0.15
1723 Reversing Mill (No Control, EP 00026)			**5,528**					
Coolant (Cupromul 23)		86.7%						
Total Particulate Matter	NY075-00-0	100		0	0.36	0.36	1,990	1.0
Total PM_{10}	NY075-00-5	100		0	0.35	0.35	1,935	0.97
Total $PM_{2.5}$	NY075-02-5	100		0	0.29	0.29	1,581	0.79
Filterable PM	F-PM			0	0.16	0.16	---	---
Filterable PM_{10}	F-PM10			0	0.15	0.15	---	---
Filterable $PM_{2.5}$	F-PM2.5			0	8.6E-02	8.6E-02	---	---
Condensible PM[(h)]	C-PM			0	0.20	0.20	---	---
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	74		0	0.15	0.15	815	0.41
Hexylene glycol	00107-41-5	4.3		0	8.7E-03	8.7E-03	48	2.4E-02
Bactericide (Grotan)		13.3%						
Total Particulate Matter	NY075-00-0	100		0	0.36	---	---	---
Total PM_{10}	NY075-00-5	100		0	0.35	---	---	---
Total $PM_{2.5}$	NY075-02-5	100		0	0.29	---	---	---
Filterable PM	F-PM			0	0.16	---	---	---
Filterable PM_{10}	F-PM10			0	0.15	---	---	---

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Control Efficiency[(c)] (%)	Emission Rate Potential[(d)] (lb/hr)	Actual Emission Rate[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	Projected Actual Annual Emissions[(f)] (tpy)
Filterable $PM_{2.5}$	F-PM2.5			0	8.6E-02	---	---	---
Condensible PM[(h)]	C-PM			0	0.20	---	---	---
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	10		0	2.1E-02	2.1E-02	38	1.9E-02
2-Aminoethanol	00141-43-5	0.40		0	8.0E-04	8.0E-04	1.5	7.3E-04
1724 Z-Mill (No Control, EP 00025)			**784**					
Roll Oil (Navi-Guard 135)								
Total Particulate Matter[(g)]	NY075-00-0	100		0	1.1	1.1	870	0.44
PM_{10}[(g)]	NY075-00-5	100		0	1.1	1.1	870	0.44
$PM_{2.5}$[(g)]	NY075-02-5	100		0	1.1	1.1	870	0.44
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		0	0.83	0.83	653	0.33
Total								
Total Particulate Matter	NY075-00-0						7,496	3.7
PM_{10}	NY075-00-5						7,299	3.6
$PM_{2.5}$	NY075-02-5						6,424	3.2
Propane-1,2-diol	00057-55-6						90	4.5E-02
Hexylene glycol	00107-41-5						48	2.4E-02
2-Butoxyethanol	00111-76-2						1.9E-07	9.4E-11
2-Amino-2-methyl-1-propanol	00124-68-5						2.6E-02	1.3E-05
Alkanolamine	00141-43-5						141	7.0E-02
1,2-Benzisothiazol-3(2H)-one	02634-33-5						9.0	4.5E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4						179	9.0E-02
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2						90	4.5E-02
Nonylphenol, ethoxylated	09016-45-9						139	7.0E-02

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Control Efficiency[(c)] (%)	Emission Rate Potential[(d)] (lb/hr)	Actual Emission Rate[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	Projected Actual Annual Emissions[(f)] (tpy)
Fatty alcohol alkoxylate	37335-03-8						0.13	6.6E-05
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0						150	7.5E-02
ethoxylated	61791-26-2						90	4.5E-02
Hydrotreated heavy naphthenic petroleum oil	64742-52-5						815	0.41
Hydrotreated light naphthenic petroleum oil	64742-53-6						0.69	3.4E-04
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9						653	0.33
Sulfonic acids, petroleum, sodium salts	68608-26-4						229	0.11
Petroleum distillates	Trade Secret #1						3.8E-06	1.9E-09
Petroleum distillates (mineral oil)[(i)]	Trade Secret #2							
Base oil	Trade Secret #3						139	7.0E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4						2,701	1.4
Fatty acids, C18-unsaturated phosphates	Trade Secret #5						90	4.5E-02
Trade Secret	Trade Secret #8						300	0.15

Notes:

(a) From cooling bath composition information provided by Revere and manufacturer's Safety Data Sheets.

(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(c) The mist eliminator particulate matter removal efficiency is estimated based on typical control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

Table 9
U-ROLL1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Control Efficiency[(c)] (%)	Emission Rate Potential[(d)] (lb/hr)	Actual Emission Rate[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)

(d) Emission Rate Potentials for the Bliss Mill, Hot Mill, and Z-Mill were estimated using hourly emission rates for Total Particulate Matter provided by Revere, divided by the assumed particulate matter removal efficiency. For the 1st Run Down Mill and Reversing Mill, PM emission rates are based on testing conducted in May 2023, divided by the assumed particulate matter removal efficiency.

(e) Actual Emission Rates for the Bliss Mill, Hot Mill, and Z-Mill were estimated using hourly emission rates for Total Particulate Matter provided by Revere. For the 1st Run Down Mill and Reversing Mill, PM emission rates are based on testing conducted in May 2023.

(f) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr) x (1-Control Efficiency) (%).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(g) For the Mills that did not undergo testing in May 2023, all particulate matter is assumed to be $PM_{2.5}$.

(h) For the Mills that underwent testing in May 2023, the individual contaminants are assumed to only be present in the condensible phase, and emissions are estimated by multiplying the weight percent by the Condensible PM emissions.

(i) This pollutant is present in a biocide applied on some of the Rolling Mills and was included in the prior permit application as being potentially emitted from the Rolling Mills. Upon further investigation, the biocide is completely consumed by the bacteria within 24 hours of application and is not expected to be released to the atmosphere. As such, this biocide has been removed from the Emission Inventory tables. This pollutant has been left in the inventory to maintain the same Trade Secret identification methodology to avoid possible confusion.

Table 10
U-OVER1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent (%)	Comissioning Plan Projected Operating Hours[(a)] (hr/yr)	Post-Control Emission Rate[(b)] (lb/hr)	Control Efficiency[(c)] (%)	Emission Rate Potential[(d)] (lb/hr)	Projected Actual Annual Emissions[(e)] (lb/yr)	Projected Actual Annual Emissions[(e)] (tpy)
1715 Overhauler (Wet Scrubber, EP 00031)			4,838					
Copper Shavings								
Total Particulate Matter	NY075-00-0	100		2.9	91	32	14,127	7.1
Total PM_{10}	NY075-00-5	100		0.72	91	8.0	3,483	1.7
Total $PM_{2.5}$	NY075-02-5	100		0.66	91	7.3	3,193	1.6
Filterable PM	F-PM			2.4	91	---	---	---
Filterable PM_{10}	F-PM10			0.20	91	---	---	---
Filterable $PM_{2.5}$	F-PM2.5			0.14	91	---	---	---
Condensible PM	C-PM			0.52	91	---	---	---
Copper	07440-50-8	99.99		0.37	91	4.1	1,795	0.90
Tin	07440-31-5	0.15		3.6E-03	91	6.0E-05	2.6E-02	1.3E-05
Silver	07440-22-4	0.10		2.4E-03	91	2.7E-05	1.2E-02	5.8E-06
Tellurium	13494-80-9	0.05		1.2E-03	91	6.7E-06	2.9E-03	1.5E-06
HAPs	NY100-00-0					4.3E-06	1.9E-03	9.3E-07
Phosphorus	07723-14-0	0.04		9.6E-04	91	4.3E-06	1.9E-03	9.3E-07
Wallover Copperol 1000B								
Total Particulate Matter	NY075-00-0	100		2.9	91	---	---	---
Total PM_{10}	NY075-00-5	100		0.72	91	---	---	---
Total $PM_{2.5}$	NY075-02-5	100		0.66	91	---	---	---
Filterable PM	F-PM			2.4	91	---	---	---
Filterable PM_{10}	F-PM10			0.20	91	---	---	---
Filterable $PM_{2.5}$	F-PM2.5			0.14	91	---	---	---
Condensible PM	C-PM			0.52	91	---	---	---
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	70		0.36	91	2.8	1,761	0.88
Proprietary emulsifier	Trade Secret #6	10		5.2E-02	91	5.8E-02	252	0.13

Table 10
U-OVER1
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent (%)	Comissioning Plan Projected Operating Hours[a] (hr/yr)	Post-Control Emission Rate[b] (lb/hr)	Control Efficiency[c] (%)	Emission Rate Potential[d] (lb/hr)	Projected Actual Annual Emissions[e] (lb/yr)	(tpy)
Total								
Particulate Matter	NY075-00-0					32	14,127	7.1
PM_{10}	NY075-00-5					8.0	3,483	1.7
$PM_{2.5}$	NY075-02-5					7.3	3,193	1.6
Copper	07440-50-8					4.1	1,795	0.90
Tin	07440-31-5					6.0E-05	2.6E-02	1.3E-05
Silver	07440-22-4					2.7E-05	1.2E-02	5.8E-06
Tellurium	13494-80-9					6.7E-06	2.9E-03	1.5E-06
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4					2.8	1,761	0.88
Proprietary emulsifier	Trade Secret #6					5.8E-02	252	0.13
HAPs	NY100-00-0					4.3E-06	1.9E-03	9.3E-07
Phosphorus	07723-14-0					4.3E-06	1.9E-03	9.3E-07

Notes:

(a) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(b) The PM and Copper Emission Factors are based on testing of post-control emissions in May 2023. For the other metal content of the copper shavings, emission factors for the individual constituents are calculated by multiplying the Total Filterable PM Emission Factor by the weight percent for each constituent. For the metal working fluid, emission factors for the individual constituents are calculated by multiplying the Condensible PM Emission Factor by the weight percent for each constituent.

(c) The control efficiency of the scrubber is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3, and assumed to meet the 212-2.3(a) Table 3 control efficiency requirement.

(d) Emission Rate Potential (lb/hr) = Weight Percent (%) x Emission Factor (lb/hr) ÷ 1-Control Efficiency (%).

(e) Projected Actual Annual Emissions (lb/yr) = Weight Percent (%) x Emission Factor (lb/hr) x Future Projected Operating Hours (hr/yr).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 11
U-ANNE1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Emission Rate Potential[c] (lb/hr)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)
1729-1734 Lee Wilson Anneal (EP 00369)						
Navi-Guard Roll Oil 135			3,404			
Volatile Organic Compounds	NY998-00-0	75		5.5E-03	19	9.4E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		5.5E-03	19	9.4E-03
Bonderite S-FN 860			3,404			
Volatile Organic Compounds	NY998-00-0	100		1.9E-04	0.64	3.2E-04
Diethylene glycol	00111-46-6	60		1.1E-04	0.38	1.9E-04
Polyethylene glycol	25322-68-3	60		1.1E-04	0.38	1.9E-04
Azole derivative	Trade Secret #7	5		9.4E-06	3.2E-02	1.6E-05
Bonderite S-FN 870			3,404			
VOC	NY998-00-0	100		1.9E-04	0.64	3.2E-04
Petroleum distillates	Trade Secret #1	100		1.9E-04	0.64	3.2E-04
2-Butoxyethanol	00111-76-2	5		9.4E-06	3.2E-02	1.6E-05
Wallover Premium 40			3,404			
VOC	NY998-00-0	100		1.4E-04	0.49	2.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100		1.4E-04	0.49	2.4E-04
2383-2386 Ebner Anneal (EP 00440)						
Navi-Guard Roll Oil 135			5,960			
Volatile Organic Compounds	NY998-00-0	75		3.3E-03	19	9.7E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		3.3E-03	19	9.7E-03
Bonderite S-FN 860			5,960			
Volatile Organic Compounds	NY998-00-0	100		1.1E-04	0.66	3.3E-04
Diethylene glycol	25322-68-3	60		6.7E-05	0.40	2.0E-04

Table 11
U-ANNE1
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Emission Rate Potential[(c)] (lb/hr)	Projected Actual Annual Emissions[(d)] (lb/yr)	(tpy)
Polyethylene glycol	Trade Secret #7	60		6.7E-05	0.40	2.0E-04
Azole derivative	00111-46-6	5		5.6E-06	3.3E-02	1.7E-05
Bonderite S-FN 870			**5,960**			
VOC	NY998-00-0	100		1.1E-04	0.66	3.3E-04
Petroleum distillates	Trade Secret #1	100		1.1E-04	0.66	3.3E-04
2-Butoxyethanol	00111-76-2	5		5.6E-06	3.3E-02	1.7E-05
Wallover Premium 40			**5,960**			
VOC	NY998-00-0	100		8.2E-05	0.49	2.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100		8.2E-05	0.49	2.4E-04
1154 Bright Anneal (EP 00367/00362)						
Navi-Guard Roll Oil 135			**1,568**			
Volatile Organic Compounds	NY998-00-0	75		1.1E-02	17	8.4E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		1.1E-02	17	8.4E-03
Bonderite S-FN 860			**1,568**			
Volatile Organic Compounds	NY998-00-0	100		3.7E-04	0.57	2.9E-04
Diethylene glycol	25322-68-3	60		2.2E-04	0.34	1.7E-04
Polyethylene glycol	Trade Secret #7	60		2.2E-04	0.34	1.7E-04
Azole derivative	00111-46-6	5		1.8E-05	2.9E-02	1.4E-05
Bonderite S-FN 870			**1,568**			
VOC	NY998-00-0	100		3.7E-04	0.57	2.9E-04
Petroleum distillates	Trade Secret #1	100		3.7E-04	0.57	2.9E-04
2-Butoxyethanol	00111-76-2	5		1.8E-05	2.9E-02	1.4E-05
Wallover Premium 40			**1,568**			

Table 11
U-ANNE1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Emission Rate Potential[c] (lb/hr)	Projected Actual Annual Emissions[d] (lb/yr)	Projected Actual Annual Emissions[d] (tpy)
VOC	NY998-00-0	100		3.1E-04	0.49	2.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100		3.1E-04	0.49	2.4E-04
464 Tray Style/Coil Anneal (EP 00189/00190)						
Navi-Guard Roll Oil 135			**7,259**			
Volatile Organic Compounds	NY998-00-0	75		1.1E-02	17	8.4E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		1.1E-02	17	8.4E-03
Bonderite S-FN 860			**7,259**			
Volatile Organic Compounds	NY998-00-0	100		3.7E-04	0.57	2.9E-04
Diethylene glycol	25322-68-3	60		2.2E-04	0.34	1.7E-04
Polyethylene glycol	Trade Secret #7	60		2.2E-04	0.34	1.7E-04
Azole derivative	00111-46-6	5		1.8E-05	2.9E-02	1.4E-05
Bonderite S-FN 870			**7,259**			
VOC	NY998-00-0	100		3.7E-04	0.57	2.9E-04
Petroleum distillates	Trade Secret #1	100		3.7E-04	0.57	2.9E-04
2-Butoxyethanol	00111-76-2	5		1.8E-05	2.9E-02	1.4E-05
Wallover Premium 40			**7,259**			
VOC	NY998-00-0	100		3.1E-04	0.49	2.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100		3.1E-04	0.49	2.4E-04
1738 Strand Anneal (EP 00027)						
Navi-Guard Roll Oil 135			**5,304**			
Volatile Organic Compounds	NY998-00-0	75		1.6E-02	84	4.2E-02
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	75		1.6E-02	84	4.2E-02

Table 11
U-ANNE1
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Emission Rate Potential[c] (lb/hr)	Projected Actual Annual Emissions[d] (lb/yr)	(tpy)
Bonderite S-FN 860			**5,304**			
Volatile Organic Compounds	NY998-00-0	100		2.0E-03	10	5.2E-03
Diethylene glycol	00111-46-6	5		1.4E-03	7.6	3.8E-03
Polyethylene glycol	25322-68-3	60		1.7E-03	9.2	4.6E-03
Azole derivative	Trade Secret #7	60		1.7E-03	9.2	4.6E-03
Bonderite S-FN 870			**5,304**			
VOC	NY998-00-0	100		2.4E-03	13	6.4E-03
Petroleum distillates	Trade Secret #1	100		2.4E-03	13	6.4E-03
2-Butoxyethanol	00111-76-2	5		1.9E-03	10	5.0E-03
Wallover Premium 40			**5,304**			
VOC	NY998-00-0	100		9.2E-05	0.49	2.4E-04
Petroleum distillates (mineral oil)	08042-47-5	100		9.2E-05	0.49	2.4E-04
Total						
VOC	NY998-00-0				187	9.3E-02
Diethylene glycol	00111-46-6				8.1	4.1E-03
2-Butoxyethanol	00111-76-2				10	5.1E-03
Petroleum distillates (mineral oil)	08042-47-5				2.4	1.2E-03
Polyethylene glycol	25322-68-3				11	5.3E-03
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9				156	7.8E-02
Petroleum distillates	Trade Secret #1				15	7.6E-03
Azole derivative	Trade Secret #7				10	5.2E-03

Notes:
(a) From manufacturer's Safety Data Sheets.

Table 11
U-ANNE1
Summary of Actual Commissioning Plan Emissions

Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Emission Rate Potential[(c)] (lb/hr)	Projected Actual Annual Emissions[(d)] (lb/yr)	(tpy)

(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(c) The hourly emissions of volatile organic compounds from the residual metalworking fluid were based on the estimated fraction of fluid that remains on the metal, the constituent weight percent of the fluid, the maximum amount of fluid used in a single year between 2019 and 2021, the operating time in 2021, and the fraction of metal fed to the annealing units.

(d) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

Table 12
Pickling Line
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)]	Density[(a)] (lb/gal)	Maximum Hourly Application Rate[(b)] (gal/hr)	Commissioning Plan Projected Annual Usage[(c)] (gal/yr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Projected Actual Annual Emissions[(f)] (lb/yr)	(tpy)
1740 Heavy Gauge Cleaning - Entry (Wet Scrubber, EP 00028)									
PCK Process - Sulfuric acid			**15.3**	**1.59**	**6,792**				
Particulate Matter[(g)]	NY075-00-0	8				25	0.19	622	0.31
PM_{10}	NY075-00-5	8				25	0.19	622	0.31
$PM_{2.5}$	NY075-02-5	8				25	0.19	622	0.31
Sulfuric acid	07664-93-9	8				25	0.19	622	0.31

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) The Maximum Hourly Application Rate was provided by Revere.

(c) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(d) Emissions from the Pickling Process are controlled by a wet scrubber. The control efficiency of the scrubber is based on the control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potential (lb/hr) = Maximum Hourly Application Rate (gal/hr) x Density (lb/gal) x Weight Percent (%) x Loss Factor of 10 (%).

The majority of the sulfuric acid used in the pickling line remains as a liquid and is sent to on-site waste treatment. To be conservative, it was assumed that 10% of the sulfuric acid is emitted to the exhaust stack.

(f) Projected Actual emissions (lb/yr) = Commissioning Plan Projected Annual Usage (gal/yr) x Density (lb/gal) x Weight Percent (%) x 1-Control Efficiency (%) x 10 (%).

The majority of the sulfuric acid used in the pickling line remains as a liquid and is sent to on-site waste treatment. It was estimated that 10% of the sulfuric acid is emitted to the exhaust stack.

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(g) All particulate matter is assumed to be $PM_{2.5}$.

Table 13
Anneal Cleaning
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Density[a] (lb/gal)	Maximum Hourly Application Rate[b] (gal/hr)	Commissioning Plan Projected Annual Usage[c] (gal/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Projected Actual Annual Emissions[g] (lb/yr)	Projected Actual Annual Emissions[g] (tpy)
Line 1738 Strand Anneal Cleaning (Wet Scrubber, EP 00027)										
Aquaease PL714			**8.345**	**0.795**	**2,875**					
Particulate Matter[h]	NY075-00-0	1.5				85	0.10	1.5E-02	54	2.7E-02
PM_{10}[h]	NY075-00-5	1.5				85	0.10	1.5E-02	54	2.7E-02
$PM_{2.5}$[h]	NY075-02-5	1.5				85	0.10	1.5E-02	54	2.7E-02
Sodium metasilicate	06834-92-0	0.15				85	1.0E-02	1.5E-03	5.4	2.7E-03
Sodium phosphate, tribasic	10101-89-0	6.0E-02				85	4.0E-03	6.0E-04	2.2	1.1E-03
Bonderite S-FN 860			**8.345**	**0.795**	**1,342**					
Particulate Matter[h]	NY075-00-0	1.0E-02				85	6.6E-04	1.0E-04	0.17	8.4E-05
PM_{10}[h]	NY075-00-5	1.0E-02				85	6.6E-04	1.0E-04	0.17	8.4E-05
$PM_{2.5}$[h]	NY075-02-5	1.0E-02				85	6.6E-04	1.0E-04	0.17	8.4E-05
Polyethylene glycol	25322-68-3	6.0E-03				85	4.0E-04	6.0E-05	0.10	5.0E-05
Azole derivative	Trade Secret #7	6.0E-03				85	4.0E-04	6.0E-05	0.10	5.0E-05
Diethylene glycol	00111-46-6	5.0E-04				85	3.3E-05	5.0E-06	8.4E-03	4.2E-06
Line 1740 Heavy Gauge Cleaning (Wet Scrubber, EP 00028)										
Aquaease PL714			**8.345**	**0.795**	**3,654**					
Particulate Matter[h]	NY075-00-0	1.5				85	0.10	1.5E-02	69	3.4E-02
PM_{10}[h]	NY075-00-5	1.5				85	0.10	1.5E-02	69	3.4E-02
$PM_{2.5}$[h]	NY075-02-5	1.5				85	0.10	1.5E-02	69	3.4E-02
Sodium metasilicate	06834-92-0	0.15				85	1.0E-02	1.5E-03	6.9	3.4E-03
Sodium phosphate, tribasic	10101-89-0	6.0E-02				85	4.0E-03	6.0E-04	2.7	1.4E-03
Bonderite S-FN 860			**8.345**	**0.795**	**758**					
Particulate Matter[h]	NY075-00-0	1.3E-02				85	8.3E-04	1.2E-04	0.12	5.9E-05
PM_{10}[h]	NY075-00-5	1.3E-02				85	8.3E-04	1.2E-04	0.12	5.9E-05
$PM_{2.5}$[h]	NY075-02-5	1.3E-02				85	8.3E-04	1.2E-04	0.12	5.9E-05
Polyethylene glycol	25322-68-3	7.5E-03				85	5.0E-04	7.5E-05	7.1E-02	3.6E-05
Azole derivative	Trade Secret #7	7.5E-03				85	5.0E-04	7.5E-05	7.1E-02	3.6E-05
Diethylene glycol	00111-46-6	6.3E-04				85	4.1E-05	6.2E-06	5.9E-03	3.0E-06
Hydrogen Peroxide			**9.3464**	**0.795**	**2,552**					
Particulate Matter[h]	NY075-00-0	0.5				85	3.7E-02	5.6E-03	18	8.9E-03

Table 13
Anneal Cleaning
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[a] (%)	Density[a] (lb/gal)	Maximum Hourly Application Rate[b] (gal/hr)	Commissioning Plan Projected Annual Usage[c] (gal/yr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Projected Actual Annual Emissions[g] (lb/yr)	(tpy)
PM_{10}[h]	NY075-00-5	0.5				85	3.7E-02	5.6E-03	18	8.9E-03
$PM_{2.5}$[h]	NY075-02-5	0.5				85	3.7E-02	5.6E-03	18	8.9E-03
Hydrogen peroxide	07722-84-1	0.5				85	3.7E-02	5.6E-03	18	8.9E-03
Total										
Particulate Matter	NY075-00-0								141	7.0E-02
PM10	NY075-00-5								141	7.0E-02
PM2.5	NY075-02-5								141	7.0E-02
Diethylene glycol	00111-46-6								1.4E-02	7.2E-06
Sodium metasilicate	06834-92-0								12	6.1E-03
Hydrogen peroxide	07722-84-1								18	8.9E-03
Sodium phosphate, tribasic	10101-89-0								4.9	2.5E-03
Polyethylene glycol	25322-68-3								0.17	8.6E-05
Azole derivative	Trade Secret #7								0.17	8.6E-05

Notes:
(a) From manufacturer's Safety Data Sheets.
(b) The Maximum Hourly Application Rate was provided by Revere.

(c) The Commissioning Plan Projected Annual Usage is based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.
(d) Emissions from the Pickling Process are controlled by a wet scrubber. The control efficiency of the scrubber is based on the control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.
(e) Emission Rate Potential (lb/hr) = Weight Percent (%) x Density (lb/gal) x Maximum Hourly Application Rate (gal/hr).
(f) Post-Control Emission Rate (lb/hr) = Emission Rate Potential (lb/hr) x 1-Control Efficiency (%).
(g) Projected Actual emissions (lb/yr) = Weight Percent (%) x Density (lb/gal) x Commissioning Plan Projected Annual Usage (gal/yr) x (1-Control Efficiency) (%).
Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).
(h) All Particulate Matter is assumed to be $PM_{2.5}$.

Table 14
U-GALV1 Molten Metal Tank
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a] (%)	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Projected Actual Annual Emissions[g] (lb/yr)	(tpy)
Molten Zinc/Tin Bath (Baghouse, EP 00601)			185						
Molten Metal									
Particulate Matter[h]	NY075-00-0	100		2.1	99	2.1	2.1E-02	3.8	1.9E-03
PM_{10}[h]	NY075-00-5	100		2.1	99	2.1	2.1E-02	3.8	1.9E-03
$PM_{2.5}$[h]	NY075-02-5	100		2.1	99	2.1	2.1E-02	3.8	1.9E-03
Zinc	07440-66-6	50		2.1	99	1.0	1.0E-02	1.9	9.6E-04
Tin	07440-31-5	50		2.1	99	1.0	1.0E-02	1.9	9.6E-04
Zaclon AB Flux									
Particulate Matter[h]	NY075-00-0	100		2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05
PM_{10}[h]	NY075-00-5	100		2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05
$PM_{2.5}$[h]	NY075-02-5	100		2.09E-02	99	2.1E-02	2.1E-04	3.9E-02	1.9E-05
Zinc chloride	07646-85-7	70		2.09E-02	99	1.5E-02	1.5E-04	2.7E-02	1.4E-05
Ammonium chloride	12125-02-9	30		2.09E-02	99	6.3E-03	6.3E-05	1.2E-02	5.8E-06
Total									
Particulate Matter[h]	NY075-00-0					2.1	2.1E-02	3.9	1.9E-03
PM_{10}[h]	NY075-00-5					2.1	2.1E-02	3.9	1.9E-03
$PM_{2.5}$[h]	NY075-02-5					2.1	2.1E-02	3.9	1.9E-03
Tin	07440-31-5					1.0	1.0E-02	1.9	9.6E-04
Zinc	07440-66-6					1.0	1.0E-02	1.9	9.6E-04
Zinc chloride	07646-85-7					1.5E-02	1.5E-04	2.7E-02	1.4E-05
Ammonium chloride	12125-02-9					6.3E-03	6.3E-05	1.2E-02	5.8E-06

Notes:
(a) From manufacturer's Safety Data Sheets.
(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

Table 14
U-GALV1 Molten Metal Tank
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)] (%)	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Post-Control Emission Rate[(f)] (lb/hr)	Projected Actual Annual Emissions[(g)] (lb/yr)	(tpy)

(c) The emission factor of 2.09 lb/hr was taken from *Emissions From Hot-Dip Galvanizing Processes: Final Report; EPA - 905/4-76-002* (March 1976). The emission factor includes the full standard deviation to be conservative and is representative of emissions from both the flux and molten metal. In order to separate emissions from the molten metal and the flux, the emission factor was multiplied by 99% for the molten metal and 1% for the flux. This was based on the relative mass of flux added compared to the amount of molten metal in the bath.

(d) The control efficiency of the baghouse is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potential (lb/hr) = Emission Factor (lb/hr) x Composition (%).

(f) Post-Control Emission Rate (lb/hr) = Emission Factor (lb/hr) x 1-Control Efficiency (%) x Composition (%).

(g) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Rate Potential (lb/hr) x (1-Control Efficiency (%)/100).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(h) All particulate matter is assumed to be $PM_{2.5}$.

Table 15
U-GALV1 Acid Tank
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[a]	Comissioning Plan Projected Operating Hours[b] (hr/yr)	Emission Factor[c] (lb/hr)	Control Efficiency[d] (%)	Emission Rate Potential[e] (lb/hr)	Post-Control Emission Rate[f] (lb/hr)	Projected Actual Annual Emissions[g] (lb/yr)	Projected Actual Annual Emissions[g] (tpy)
HCl and Flux Bath (Scrubber, EP 00600)			185						
Muriatic Acid									
Particulate Matter[i]	NY075-00-0	37		9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03
PM_{10}[i]	NY075-00-5	37		9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03
$PM_{2.5}$[i]	NY075-02-5	37		9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03
HAPs	NY100-00-0			9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03
Hydrogen chloride	07647-01-0	37		9.1E-02	85	9.1E-02	1.4E-02	2.5	1.3E-03
Zalcon W									
Particulate Matter[i]	NY075-00-0	73		2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04
PM_{10}[i]	NY075-00-5	73		2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04
$PM_{2.5}$[i]	NY075-02-5	73		2.7E-02	85	2.7E-02	4.1E-03	0.76	3.8E-04
Zinc chloride	07646-85-7	40		9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04
Ammonium chloride	12125-02-9	30		9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04
Barium chloride	10361-37-2	2.5		9.1E-03	85	9.1E-03	1.4E-03	0.25	1.3E-04
Total									
Particulate Matter	NY075-00-0					0.12	1.8E-02	3.3	1.6E-03
PM_{10}	NY075-00-5					0.12	1.8E-02	3.3	1.6E-03
$PM_{2.5}$	NY075-02-5					0.12	1.8E-02	3.3	1.6E-03
Zinc chloride	07646-85-7					9.1E-03	1.4E-03	0.25	1.3E-04
Barium chloride	10361-37-2					9.1E-03	1.4E-03	0.25	1.3E-04
Ammonium chloride	12125-02-9					9.1E-03	1.4E-03	0.25	1.3E-04
HAPs	NY100-00-0					9.1E-02	1.4E-02	2.5	1.3E-03
Hydrogen chloride	07647-01-0					9.1E-02	1.4E-02	2.5	1.3E-03

Notes:

(a) From manufacturer's Safety Data Sheets.

Table 15
U-GALV1 Acid Tank
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Composition[(a)]	Comissioning Plan Projected Operating Hours[(b)] (hr/yr)	Emission Factor[(c)] (lb/hr)	Control Efficiency[(d)] (%)	Emission Rate Potential[(e)] (lb/hr)	Post-Control Emission Rate[(f)] (lb/hr)	Projected Actual Annual Emissions[(g)] (lb/yr)	(tpy)

(b) The Commissioning Plan Projected Operating Hours are based on the increases estimated by Revere to occur as a result of the EP 00040 furnace Commissioning Plan.

(c) The hydrogen chloride emission factor was calculated using the equations provided in EPA's Guidance Document *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Steel Pickling - HCl Process - Background Information for Proposed Standards* (June, 1997) Appendix E.

The guidance document does not provide methods to estimate the emissions of the other chloride constituents. A literature search revealed that the other chloride constituents are expected to have significantly lower vapor pressures than hydrogen chloride. Therefore, the emission factors for these constituents were conservatively assumed to be 10% of the emission factor for hydrogen chloride.

(d) The control efficiency of the wet scrubber is based on control efficiencies provided in USEPA's AP-42 Appendix B.2 Table B.2-3.

(e) Emission Rate Potential (lb/hr) = Emission Factor (lb/hr).

(f) Post-Control Emission Rate (lb/hr) = Emission Rate Potential (lb/hr) x 1-Control Efficiency (%).

(g) Projected Actual Annual Emissions (lb/yr) = Commissioning Plan Projected Operating Hours (hr/yr) x Emission Factor (lb/hr) x (1-Control Efficiency (%)/100).

Projected Actual Annual Emissions (tpy) = Projected Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(h) All particulate matter is assumed to be $PM_{2.5}$.

Table 16
U-SOLV1 Non-Exempt Parts Washer
Summary of Actual Commissioning Plan Emissions
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Weight Percent[(a)] (%)	Density[(a)] (lb/gal)	Volume[(b)] (gal)	Surface Area[(b)] (ft^2)	Actual Annual Usage[(b)] (gal/yr)	Emission Rate Potential[(c)] (lb/hr)	Actual Annual Emissions[(d)] (lb/yr)	Actual Annual Emissions[(d)] (tpy)
Evaporation Calculation Method			**6.8**	**550**	**34**	**870**			
VOC	NY998-00-0	3.1					5.0E-02	181	9.1E-02
Distillates, petroleum, hydrotreated light[(f)]	64742-47-8	3.1					5.0E-02	181	9.1E-02

Notes:

(a) From manufacturer's Safety Data Sheets.

(b) Information provided by Revere for 2021 and reflects annual usage minus the amount of solvent disposed of as liquid waste. No increase in solvent use is anticipated as a result of the commissioning plan.

(c) The Emission Rate Potential was estimated using the evaporation model provided in *Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, Volume II: Chapter 16* (August 2007) Section 3.7.

(d) Actual Annual Emissions (lb/yr) = Actual Annual Usage (gal/yr) x Density (lb/gal) Weight Percent (%)

Actual Annual Emissions (tpy) = Actual Annual Emissions (lb/yr) ÷ 2,000 (lb/ton).

(e) The manufacturer's SDS indicates that the solvent is entirely comprised of distillates, petroleum, hydrotreated light, but also guarentees that the VOC content is less than 25 g/L. Emissions were estimated assuming 25 g/L of VOC and that all of the VOC consists of distillates, petroleum, hydrotreated light.

TABLE 17
COMMISSIONING PLAN ANNUAL OPERATING HOURS

Table 17
Hours Used to Calculate Modeling Emission Rates for Commissioning Plan
Revere Copper Products, Inc
Rome, NY

Emission Sources	Commissioning Plan Operating Hours												Total Hours
	January (hr/yr)	February (hr/yr)	March (hr/yr)	April (hr/yr)	May (hr/yr)	June (hr/yr)	Month 1 (hr/yr)	Month 2 (hr/yr)	Month 3 (hr/yr)	Month 4 (hr/yr)	Month 5 (hr/yr)	Month 6 (hr/yr)	(hr/yr)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse	255	375	354	417	410	247	247	247	417	417	417	417	4,220
U-CAST1 (EP00040) - Casting Furnaces To Baghouse	342	324	329	316	198	354	354	354	354	354	354	354	3,987
U-CAST1 (EP00602) - Central Vacuum	12	14	102	47	126	10	10	10	126	126	126	126	835
U-ROLL1 (EP00036) - Bliss Mill	112	104	96	144	112	56	56	56	144	144	144	144	1,312
U-ROLL1 (EP00030) - Hot Mill	200	216	248	216	168	168	175	194	248	248	248	248	2,577
U-ROLL1 (EP00029) - First Run Down Mill	440	272	480	344	200	352	358	373	480	480	480	480	4,739
U-ROLL1 (EP00026) - Reversing Mill	472	424	552	440	304	376	376	376	552	552	552	552	5,528
U-ROLL1 (EP00025) - Z-Mill	128	96	48	0	0	0	0	0	128	128	128	128	784
U-OVER1 (EP00031) - Overhauler	384	360	472	376	280	352	357	369	472	472	472	472	4,838
U-ANNE1 (EP00362) - Bright Anneal Exit	56	184	96	104	128	88	88	88	184	184	184	184	1,568
U-ANNE1 (EP00367) - Bright Anneal Entry	56	184	96	104	128	88	88	88	184	184	184	184	1,568
U-ANNE1 (EP00369) - Lee Wilson Anneal	272	168	272	264	104	332	332	332	332	332	332	332	3,404
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry	672	624	712	672	496	336	419	480	712	712	712	712	7,259
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit	672	624	712	672	496	336	419	480	712	712	712	712	7,259
U-ANNE1 (EP00027) - Strand Anneal	472	400	536	360	240	384	384	384	536	536	536	536	5,304
U-ANNE1 (EP00440) - Ebner Anneal	720	624	736	776	0	0	0	0	776	776	776	776	5,960
1740 Heavy Gauge Cleaning (EP 00028)	576	576	664	592	432	432	432	432	664	664	664	664	6,792

APPENDIX H-1
COMMISSIONING MODELING REPORT

RAMBOLL

ENVIRONMENT
& HEALTH

REVERE COPPER PRODUCTS, INC.
MODELING REPORT – COMMISSIONING PLAN

Project name	**Revere Copper Products, Inc. – Commissioning Plan**
Project no.	**1087689\1940103004**
Recipient	**NYSDEC – Impact Assessment and Meteorology Group**
Document type	**Modeling Report**
Version	**1**
Date	**July 21, 2023**
Prepared by	**Steven Miraglia**
Checked by	**Cris Hine**
Approved by	**Matthew Traister, P.E.**

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1. Project Discussion

Revere Copper Products, Inc. (Revere) is renewing and modifying the Air State Facility (ASF) Permit (ID 6-3013-00091/00039) for its manufacturing facility located at 1 Revere Park in Rome, New York. A site location map is provided in **Figure 1**.

An air dispersion modeling protocol (see **Exhibit 1**) was submitted to the New York State Department of Environmental Conservation (NYSDEC) on December 1, 2022 in order to satisfy NYSDEC's requirement for submitting a protocol prior to performing refined air dispersion modeling. NYSDEC provided comments on the protocol to Revere on January 9, 2023, which were incorporated into the modeling report submitted to NYSDEC with the ASF Permit renewal application on February 8, 2023.

In accordance with the Order on Consent (R6-20230614-21) and Schedule of Compliance, Revere is required to submit a complete ASF Permit renewal application containing the requested information identified in the Department's Notice of Incomplete Application no later than July 10, 2023; an extension to July 21, 2023 was requested by Revere and granted by NYSDEC.

Also, in accordance with the Schedule of Compliance, should Revere propose to commission or otherwise initiate the new furnace prior to receipt of the Permit Modification, Revere is to include for Department review and approval a temporary commissioning and/or operation plan, which includes sufficient detail to confirm the facility will be in compliance with applicable regulations during operation of the furnace.

Revere is submitting a revised ASF Permit application and including the Commissioning Plan as an attachment to the application (**Attachment H**). Air dispersion modeling was performed for both the ASF Permit application and the Commissioning Plan as these represent two different scenarios of operating the facility. This report focuses on the Commissioning Plan and a separate modeling report has been prepared that focuses on the ASF Permit application.

Air dispersion modeling was performed using the United States Environmental Protection Agency (USEPA) AERMOD (Version 22112) model.

1.1 Facility Modifications

Revere has removed casting furnace 2057 (Emission Unit U-CAST1, Emission Source 01257) and began the installation of a similar induction furnace (Emission Source 02728) that will provide an estimated 23.3% increase in output casting. The new furnace will vent to an existing cyclone and baghouse (00C40/00B40) and Emission Point (EP) 00040. Increases in emissions resulting from the furnace replacement project have been estimated, including emissions from the increased furnace capacity as well as emissions from downstream operations that will potentially increase as a result of increased furnace throughput.

The following additional facility changes that have been made were identified in the February 8, 2023 renewal application:

- The facility no longer produces or uses brass
- The facility has switched from residual (No. 6) to distillate (No. 2) fuel oil for the backup fuel combusted by the main boilers (Emission Unit U-COMB1)
- Machine #1187 has been removed from the facility

- Emission unit U-GRANC and Emission Point 00180 have been removed from the facility
- U-PTNRM, BH500, and Emission Point 00500 are no longer in use
- A non-exempt solvent cleaning bath has been identified (New Emission Unit U-SOLV1, Process SOL, Emission Source 02600) that is subject to Subpart 226-1 (Solvent Cleaning Processes)
- Estimated facility-wide potential emissions of SO_2 dropped below 100 tons per year (tpy) due to the shift from No. 6 to No. 2 fuel oil. Revere requested that the facility-wide cap on SO_2 emissions and the fuel oil usage cap be removed from the permit.

1.2 Differences Between the Commissioning Plan and the February 8, 2023 Renewal Application

The Commissioning Plan incorporates the following key differences from the February 8, 2023 application:

- Since some of Revere's process emission rates were based on source testing conducted in 2001 and 2008 and that testing did not include particle size distribution (PSD) analysis, Revere initiated source testing (for engineering purposes) in May 2023 to develop updated emission rates for five emission sources:
    - 1723 Reversing Mill (U-ROLL1, Emission Point (EP) 00026, Source 01723)
    - 1721 First Run Down Mill (U-ROLL1, EP 00029, Source 01721, Control 00C29)
    - Cast Shop 1799 Holding Furnace and 2443 Melting Furnace (U-CAST1, EP 00039, Source 01799 and 02443, Cyclone 00C39, and Baghouse 00C39)
    - Cast Shop 2056 Melting Furnace (U-CAST1, EP 00040, Source 02056, Cyclone 00C40, and Baghouse 00B40)
    - 1715 Overhauler (U-OVER1, EP 00031, Source 01715, Control 00C31).

  For each of the above emission sources, samples were collected by Alliance Technical Group, LLC (Alliance) on May 30 through June 2, 2023 to establish updated emission rates for total filterable particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and condensable PM. In addition, a sample collected from the overhauler exhaust was analyzed for copper. A summary of the stack test results is provided in **Exhibit 2**. The updated emission and exhaust flow rates have been incorporated into the emission calculations, Part 212 evaluation, and air dispersion modeling.

- Testing was not able to be performed on the Central Vacuum System (U-CAST1, EP 00602, Source CSVAC, Cyclone CSC01, and Baghouse CSB01) during the May 2023 test program. Revere previously assumed the PM concentration in the Central Vacuum System exhaust was equivalent to the grain standard, *i.e.*, 0.05 grains per dry standard cubic foot (gr/dscf), which is overly conservative given the air pollution control devices in use (*i.e.*, cyclone and baghouse). For our calculations, we have assumed that the performance of the vacuum exhaust cyclone and filter housing system would perform similarly to the exhaust of the cyclone and filter housing operating on the cast furnace exhausts. To be conservative, we used the higher of two available cast furnace exhaust outlet concentrations from the May 2023 test program and applied it to the vacuum system exhaust. The performance of the vacuum cyclone and filter housing is reasonably expected to be similar since the design features of the two systems are also similar.

- NYSDEC provided updated meteorological data on July 3, 2023 and these data have been used in the updated modeling. This is discussed further in Section 7 of this report.

- Revere has clarified the EPs associated with the 464 Tray Style Coil Annealing Furnace (U-ANNE1, Source 00464) and 1154 Annealing Furnace (U-ANNE1, Source 01154). In each of these processes, a natural gas-fired DX boiler provides DX gas consisting of natural gas combustion byproducts and heat to the annealing furnace; the DX gas becomes the atmosphere in the furnace during the annealing process. A separate small natural gas-fired combustion unit provides heat to the furnace during the annealing process. Copper from a rolling mill moves through the annealing furnace. Both the furnace entrance and exit have a chamber that captures fugitive emissions and vents them to the outside. There also is an emergency relief vent that engages if the DX gas pressure builds up in the annealing chamber; this rarely occurs.

  Each of these annealing furnaces has four EPs: one exempt EP for venting combustion gases from a small, exempt tube furnace that provides heat to the furnace; one EP for the furnace entry chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when entering the annealing furnace; one EP for the furnace exit chamber, which captures fugitive emissions that might evolve from the residual metal working fluids present on the copper when exiting the annealing furnace; and the exempt emergency relief vent. The DX furnace vent is directed to the annealing chamber and does not directly vent outside. The entrance and exit chamber EPs are understood to be the EPs venting process emissions from these operations. Therefore, the following process EPs for these two annealing furnaces should be included:

  - Emission Source 00464 – Tray Style/Coil Anneal: EPs 00189 (entrance chamber exhaust) and 00190 (exit chamber exhaust); both of these EPs are in the current ASF Permit as well as the renewal application.
  - Emission Source 01154 – 1154 Annealing Furnace: EPs 00367 (entry chamber exhaust) and 00362 (exit chamber exhaust). EP 00367 is in the current ASF Permit, but EP 00362 is a new EP.

  These stacks and their parameters have been added to the revised ASF Permit application and used in the updated modeling.

- Emissions from the combustion of natural gas by the DX boilers were double counted in the February 8, 2008 renewal application with the DX combustion gas that becomes the annealing furnace atmosphere. This double counting has been corrected.

- The coolants and additives used in the rolling mills (U-ROLL1) were updated based on additional bath composition information provided by Revere. In addition, Revere rolling mill process engineers have indicated the bacteria completely consume Kathon 886, an antimicrobial agent added to the 1723 Reversing Mill (U-ROLL1, EP 00026, Source 01723) and 1176 Bliss Mill (U-ROLL1, EP 00036, Source 01723) within 24 to 48 hours of its addition to the recirculating cooling water bath. As a result, emissions associated with constituents in Kathon 886 have been removed from the updated emission inventory.

  When excessive biological growth (bacteria) is present in the water-soluble coolant systems, the pH of the solution is lowered from the acidic excretions of the bacteria. This biological growth is controlled by additions of antimicrobial agents to the coolant systems. Revere currently uses two different antimicrobials to stop the biological growth in the coolant systems: Grotan and Kathon. The Kathon additive is used as an initial dose at the start of a new coolant change. While the system residual of the Kathon additive is not testable, it is known to be consumed based on the rapid increase in pH (less excretion from bacteria). Revere relies on the biological results reported by the in-house laboratory to gauge the need for additional antimicrobials.

- The distance to property line has been added for non-exempt emission points in **Tables 2 and 3** of this report.

- The Part 212 air toxics evaluation presented in **Attachment D** of the permit application, as well as **Table 1** of this report, has been updated to incorporate the changes in emission rates, cooling water composition, and stack flow rates discussed above. Note that emission rates of constituents associated with particulate emissions, such as those from the casting and rolling mills, have been updated based on the May 2023 source testing results.

- For modeling of toxics, the emission rates used for modeling for comparison to the short-term guideline concentrations (SGCs) are the same as those used in the modeling for the revised ASF Permit application. Emission rates used for modeling for comparison to the annual guideline concentrations (AGCs) were lowered to factor in the proposed actual annual operating hours of the facility in the Commissioning plan. These emission rates are discussed in more detail in Section 4.

- PM_{10} and $PM_{2.5}$ modeling results for the revised ASF Permit application, as shown in **Attachment E**, demonstrate compliance with their respective NAAQS. As the emission rates in the Commissioning Plan are lower than those in the permit application, separate PM_{10} and $PM_{2.5}$ modeling was not performed for the Commissioning Plan as the more conservative values in the permit application already demonstrate compliance with the NAAQS.

2. Site Location and Description

The facility is located at 1 Revere Park in Rome, NY within Oneida County. A site location map is provided in **Figure 1**. The site is bounded by mixed residential and commercial development to the north, east, and south and by a public park and a permanently closed elementary school to the west.

The primary manufacturing operations at the Revere facility consist of induction furnaces used for copper casting operations, annealing units, rolling mills, and a copper galvanizing line. Emissions from these processes, except for the galvanizing line, require air dispersion modeling to demonstrate compliance with Part 212.

3. Stack Parameters and Buildings

Stack parameters for the EPs included in the refined modeling analysis are provided in **Table 2** (English Units) and **Table 3** (Metric Units). A site layout map showing the building locations and the facility fenceline is provided in **Figure 2**. Figures identifying the stack locations and building heights of the buildings at the site are provided in **Figure 3** through **Figure 9**.

4. Emission Rates

An air toxics evaluation was performed in accordance with NYSDEC's DAR-1 *Guidelines for the Evaluation and Control of Contaminants Under 6 NYCRR Part 212*, dated February 12, 2021. A summary of the Part 212 evaluation is provided in **Table 1**. This table provides a list of process emissions at the facility (excluding combustion units and exempt/trivial activities) and identifies emissions that require modeling. A more detailed Part 212 evaluation is provided in **Attachment D** of the ASF Permit application.

A summary of the emission rates used in the modeling analysis is provided in **Tables 4** and **5**. Emission rates were calculated based on historical emission factors and stack testing results. **Table 5** includes the 1-hour emission rates for the air toxics that were modeled, and **Table 6** includes the annual emission rates for the modeled air toxics. The 1-hour toxics emission rates were modeled using post-control hourly emission rates. The annual toxics emission rates also were modeled using post-control hourly emission rates; however, the emission rates were lowered to factor in the proposed actual annual operating hours discussed the Commissioning Plan. The proposed actual annual operating hours are provided in **Table 6**. The hours for January through June were tracked by Revere during the first half of 2023. The hours for Month 1 and Month 2 of the Commissioning Plan were provided by Revere and reflect the expected annual operating hours including the commissioning of the new casting furnace and the associated increase of downstream operating hours. The remaining four months (Months 3 to 6) were based on the maximum monthly hours from the first eight months for each process unit. Hourly emission rates were multiplied by the Commissioning Plan operating hours and then divided by 8,760 hours to calculate annualized emission rates that are representative of the proposed actual hours of operation.

5. Urban / Rural Classification

In accordance with Section 2.3 of NYSDEC's DAR-10 air dispersion modeling guidance document: "Only facilities located in the New York City metro area may have sufficiently high population density and urban heat island effects to justify the use of urban dispersion coefficients." The site is not located in the New York City metro area; therefore, rural dispersion coefficients were used in the analysis.

6. Good Engineering Practice Stack Height Analysis

USEPA provides specific guidance for calculating Good Engineering Practice (GEP) stack height and for evaluating whether building downwash will occur (USEPA, 2003). GEP stack height is defined by USEPA as the height of the structure plus 1.5 times the lesser of the structure height or projected width. If the stack height for a source is less than the height identified using GEP guidelines, based on the dimensions of nearby buildings, then the potential for building downwash to occur exists and is to be considered in the modeling analysis.

The stacks to be modeled in this analysis are less than GEP stack height. Therefore, 36 directional building heights and widths data were estimated using the USEPA Building Profile Input Program, PRIME version 04274 (BPIP-PRIME) and incorporated into the AERMOD model.

7. Meteorological Data

The closest National Weather Service (NWS) station to the facility that has the appropriate available data for AERMOD is located in Rome, New York. The Rome NWS station is located approximately 3 kilometers to the Northeast of the facility. Therefore, the Rome, New York NWS station was utilized for the surface data for this analysis. Upper-air data from Albany, New York was also used. NYSDEC provided the necessary pre-processed data for use in the analysis. Data for years 2018-2022 were used.

8. Receptor Locations

In accordance with Section 2.4 of DAR-10[1], the modeling analysis utilized a set of nested Cartesian grids of receptors with a spacing of 70, 100, 250, and 500 meters extending to a distance of 1, 2, 5, and 10 kilometers, respectively, from the facility. The facility has restricted access with a fence and outer building walls that encloses the majority of the property, with the exception of the eastern parking lot; therefore, fence line receptors were included at a spacing of 25 meters. On-site receptors inside the fence line were excluded. Maximum impacts occurred within the 70-meter grid; therefore, no additional grids were added to the model.

Discrete receptors were added to sensitive locations including schools, hospitals, nursing homes, and daycares located within a 10-kilometer radius from the facility. **Figure 10** provides a map showing the locations of the sensitive receptors included in the modeling and **Table 7** provides the name and coordinates of each receptor.

Additional receptor grids were added to the Environmental Justice areas within a 10-kilometer radius from the facility and are identified in **Figure 11**. A receptor grid at 50-meter spacing was added to each area, in addition to the nested Cartesian grids. Note that 50-meter spacing in addition to the regular nested Cartesian grids resulted in an overabundance of receptors, but in absence of NYSDEC recommended spacing for Environmental Justice areas, this 50-meter spacing was used.

Disadvantaged Communities within a 10-kilometer radius from the facility were also identified and are included in **Figure 12**. No receptors were added to these areas as the above receptor grids provide adequate characterization of the impacts surrounding the facility.

The current version of AERMAP was used to calculate the receptor elevations and appropriate hill height values. Ten-meter resolution National Elevation Dataset (NED) data were used in the analysis.

9. Lakes Environmental Software – Multi-Chem Use

As shown in **Table 1**, more than 20 contaminants were required to be included in the air toxics modeling. Due to the large number of contaminants, the multi-chemical (multi-chem) utility of the AERMOD View program by Lakes Environmental Software™ was used as an initial screening level model for the air toxics. The purpose of the utility is to streamline the modeling of multiple contaminants by avoiding having to set up separate project files for each contaminant in the analysis.

For each emission source in the analysis, multi-chem creates an AERMOD input file using a normalized emission rate of 1.0 gram per second. The input files are run with AERMOD and produce post files containing the normalized predicted concentrations for each averaging period at each receptor. For example, if the model is run for the 1-hour averaging period, then the post file will contain the normalized 1-hour predicted concentrations for each hour in the meteorological dataset at each receptor. Next, multi-chem takes the source-specific contaminant emission rates, multiplies by the normalized predicted concentrations in the respective post files, and cumulatively adds the values paired in time and location. The results of the calculations are summarized in contaminant-specific plot files. At the bottom of the plot files is a summary of the source IDs and emission rates used to generate the plot files.

[1] NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis, Issued Date September 1, 2020.

Initial results using the multi-chem utility were provided to NYSDEC in advance of the final modeling report to afford NYSDEC the opportunity to identify any toxics that should be modeled outside of the multi-chem utility. NYSDEC provided the following list of constituents to be run outside of the multi-chem utility:

- 2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol [04719-04-4]
- Copper Oxide [01317-38-0]
- Copper [07440-50-8]
- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- [57635-48-0]
- Fatty acids, C18-unsaturated phosphates [Trade Secret #5]
- Trade Secret [Trade Secret #8]

Additionally, NYSDEC required that emissions of copper oxide and copper be combined and modeled together for comparison to the SGC and AGC for copper. Copper oxide and copper were run together outside of the multi-chem utility, and the other four contaminants were also run separately without using the multi-chem utility.

10. Modeling Results

The results of the air toxics modeling using the multi-chem utility are provided in **Table 8** and the results for the specific contaminants run outside of the multi-chem utility are provided in **Table 9**.

The results of the air toxics modeling indicate that the maximum predicted concentrations of two of the modeled air contaminants exceed the AGC values provided by the NYSDEC Air Toxics Section (ATS). None of the modeled air contaminants exceed the SGCs in the NYSDEC DAR-1 AGC/SGC tables. Note that a third contaminant that required modeling for the Permit sgcoperating scenario (Fatty acids, C18-unsaturated phosphates, CAS# Trade Secret #5) did not require modeling in the Commissioning Plan operating scenario since actual annual emissions dropped to less than 100 pounds per year due to the reduced annual operating hours.

The two contaminants that exceed their respective AGCs are as follows:

- Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]- (CAS# 57635-48-0)
- Trade Secret (CAS# Trade Secret #8).

These contaminants are emitted from the First Run Down Mill. None of these contaminants are listed in NYSDEC's DAR-1 AGC/SGC tables; therefore, the ATS provided interim AGC values based on toxicological reviews. The information regarding the toxicities of these contaminants that the ATS was able to find was extremely limited, which resulted in NYSDEC assigning very conservative interim AGC values to these contaminants.

A Toxic – Best Achievable Control Technology (T-BACT) analysis has been included in Attachment F of the air permit application. In this analysis, it is presented that the following factors impact the assessment of T-BACT for the First Run Down Mill:

- Revere has instituted effective process controls to the extent practical
- Revere has conducted initial evaluations of coolant alternatives, and each has challenges that would need to be vetted with further evaluation before they could be trialed at the facility

- The First Run Down Mill is equipped with a mist eliminator to minimize emissions
- The three target constituents have low volatility and, therefore, estimated emissions may be overly conservative (on the high side)
- There is a lack of specific sampling and analytical methods for the target constituents
- The interim AGCs assigned by NYSDEC have built-in safety factors of 10x and 100x due to a lack of available toxicological information and, thus, are overly conservative
- Predicted impacts of the three target constituents are less than NYSDEC's published *de mimimis* AGC of 0.1 micrograms per cubic meter ($\mu g/m^3$)
- It is doubtful that an air pollution control manufacturer will provide a removal efficiency guarantee for the target compounds given the lack of information on these chemicals and the inability to quantify their physical state (e.g., aerosol, solid) or their present concentration/mass
- The estimated cost of removing approximately 665 combined pounds per year of the three target contaminants (540 pounds for the Commissioning Plan operating scenario) is $1.3 to $1.8 million per ton of contaminant removed.

For these reasons, this evaluation concludes that the 1721 First Run Down Mill has T-BACT for emissions of the three specified contaminants, since no other alternatives could be demonstrated as feasible. Considered alternatives were either not technically feasible or not economically feasible.

Electronic copies of the AERMOD input and output files for PM_{10}, $PM_{2.5}$, and the air toxics that were run outside of multi-chem, contaminant-specific plot files for the contaminants run within multi-chem, BPIP input and output files, AERMAP input and output files, and meteorological data files were submitted to the NYSDEC File Transfer Service (FTS) site.

FIGURES

PROJECT: 1940103004 | DATED: 10/21/2022 \\ramashfile01\RAM_Projects\Revere-Copper.1087689\1940103004.Revere-SFP-Renewal\Docs\Reports\ASF\Modeling\FigureOne_SiteLocation.mxd

0 500 1,000 Feet

SITE LOCATION MAP

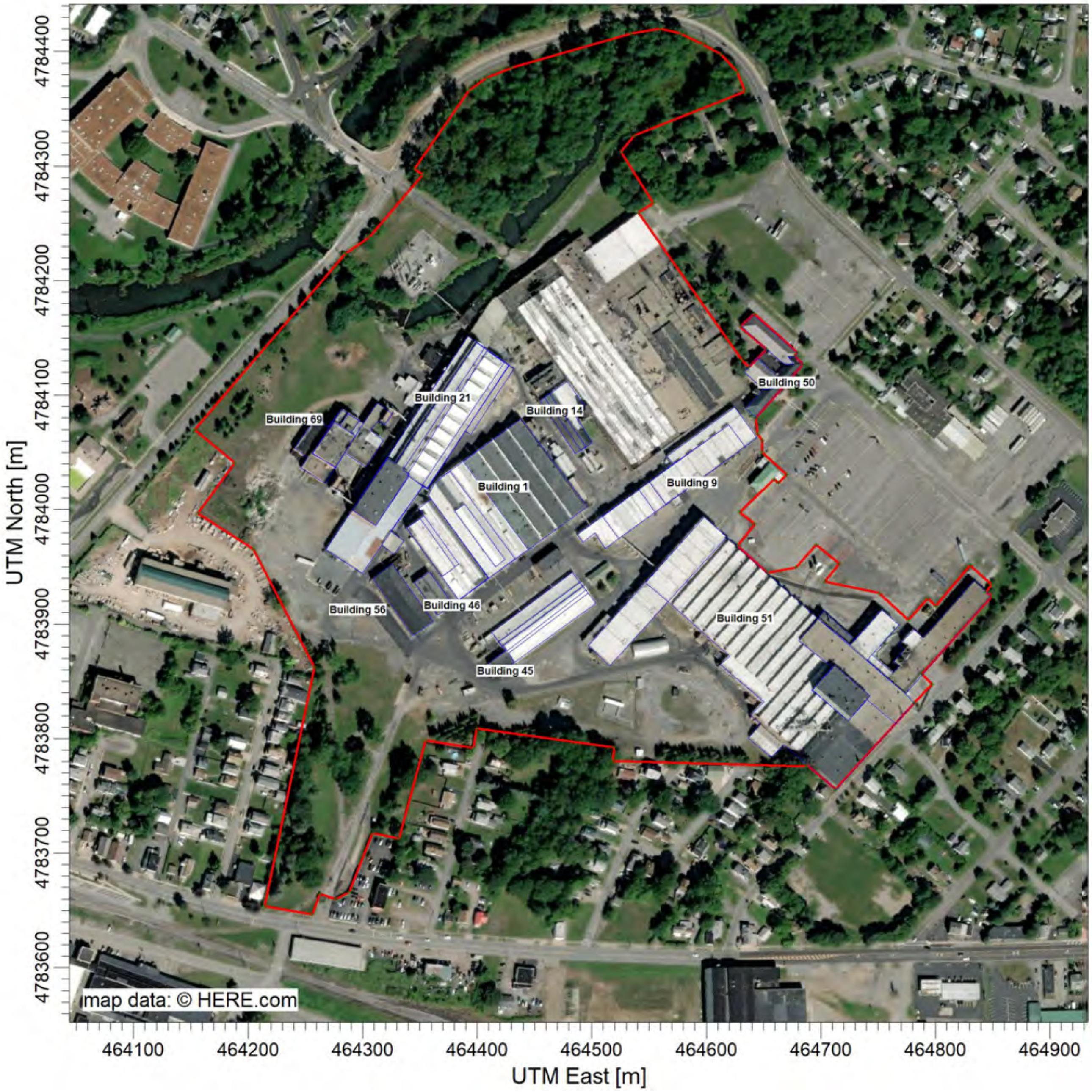
Revere Copper Products, Inc.
1 Revere Park
Rome, NY 13440

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY

PROJECT TITLE:

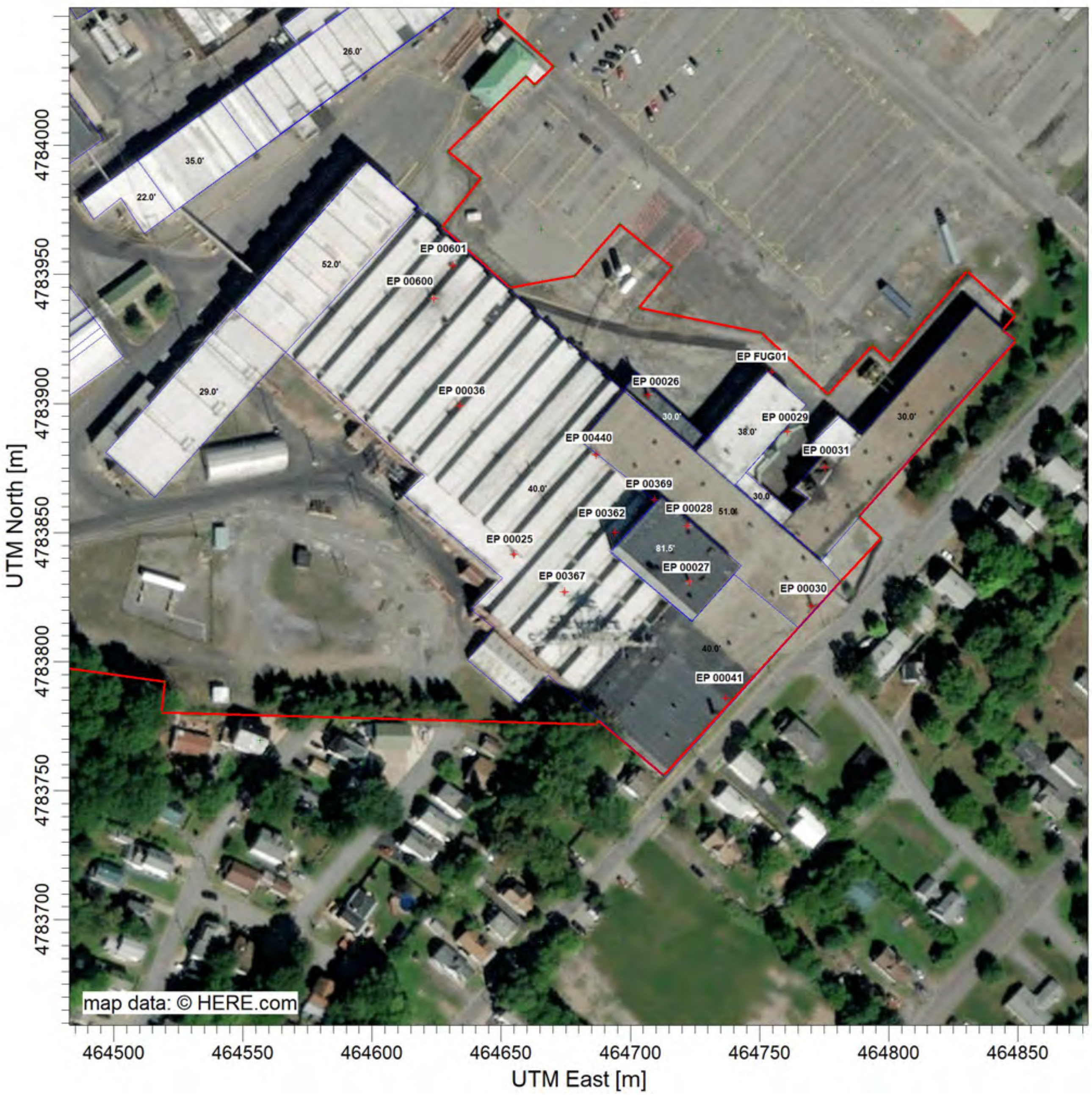
Figure 2 - Site Layout Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The red line represents the facility fenceline.	**23**	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:5,592 0 — 0.2 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 3 - Building 51 Stack Locations and Building Heights



COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:2,480 — 0 to 0.05 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

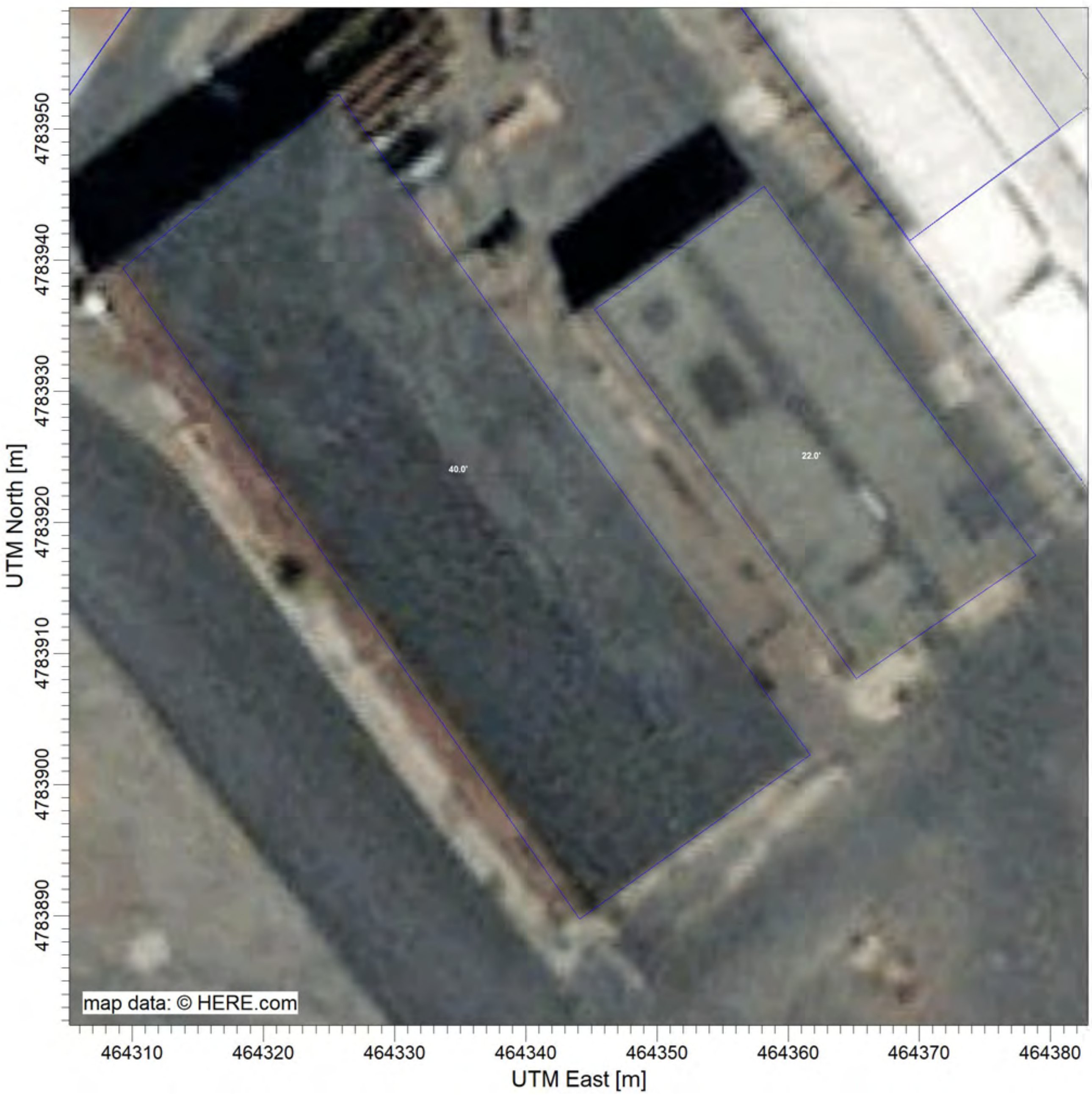
PROJECT TITLE:

Figure 4 - Building 45 Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:795 0 — 0.02 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 5 - Building 46 and 56 Building Heights



COMMENTS:

SOURCES:

23

COMPANY NAME:

Revere Copper Products, Inc.

RECEPTORS:

10568

MODELER:

Steven Miraglia

SCALE: 1:488

0 0.01 km

DATE:

7/16/2023

PROJECT NO.:

1940103004

PROJECT TITLE:

Figure 6 - Building 1 Stack Locations and Building Heights

COMMENTS:	SOURCES: **23**	COMPANY NAME: **Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:1,100 0 — 0.04 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 7 - Building 14 Stack Locations and Building Heights

COMMENTS:	SOURCES: **23**	COMPANY NAME: **Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:415 0 ▬ 0.01 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 8 - Building 21 and 69 Stack Locations and Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:1,792 0 — 0.05 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

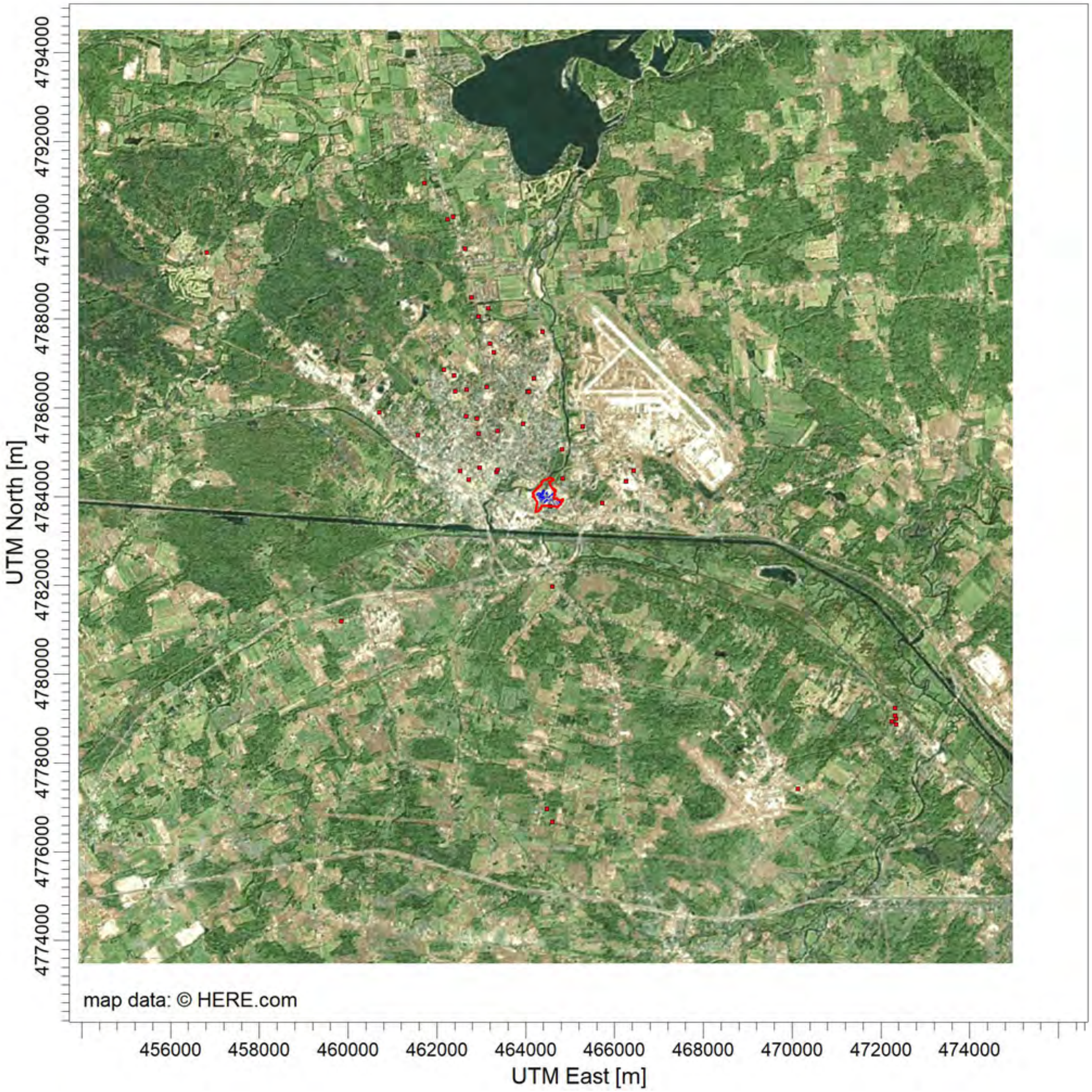
PROJECT TITLE:

Figure 9 - Building 50 Building Heights

COMMENTS:	SOURCES:	COMPANY NAME:	
	23	**Revere Copper Products, Inc.**	
	RECEPTORS:	MODELER:	
	10568	**Steven Miraglia**	RAMBOLL
		SCALE: 1:574 0 ___ 0.02 km	
		DATE:	PROJECT NO.:
		7/16/2023	**1940103004**

PROJECT TITLE:

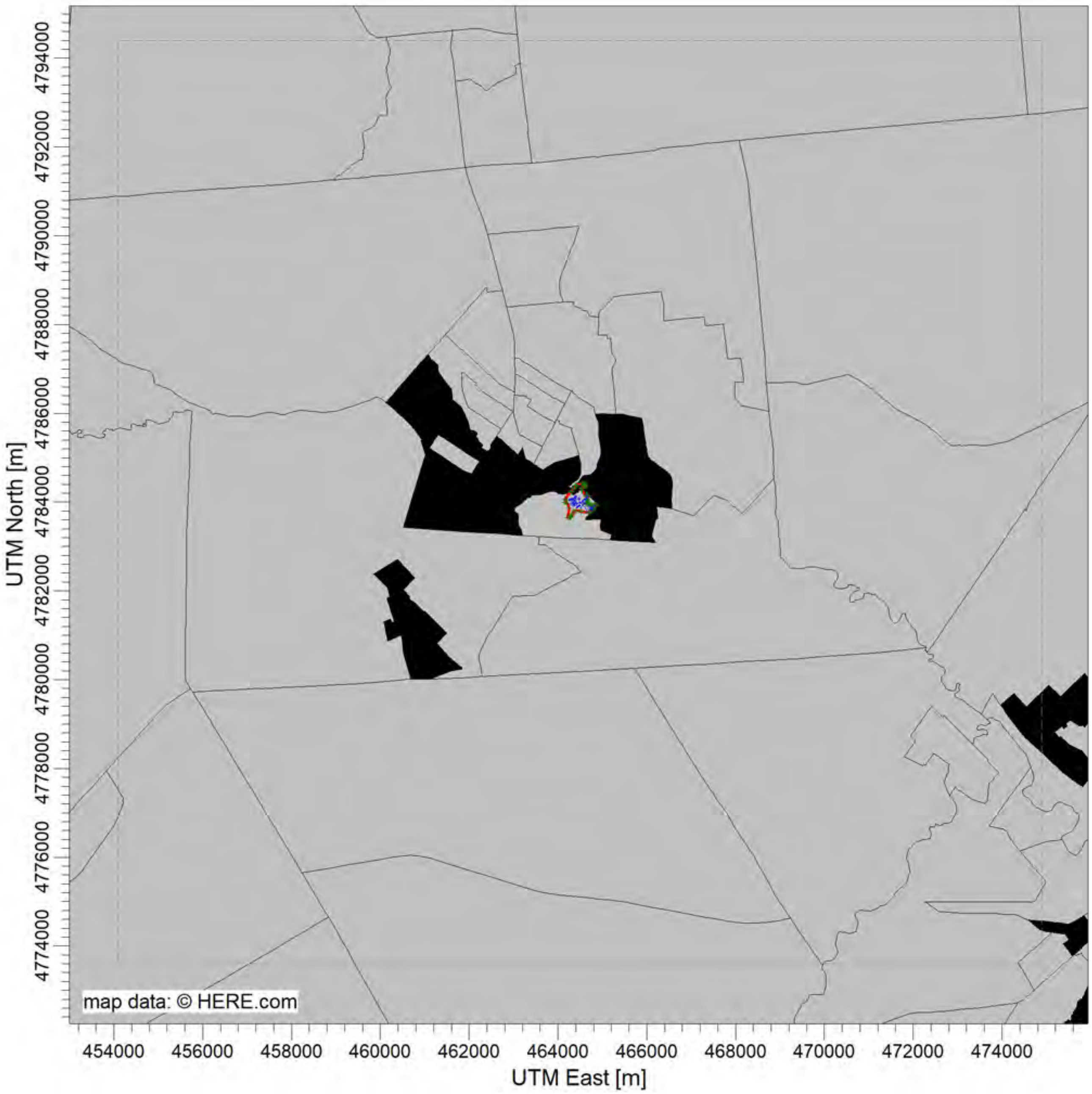
Figure 10 - Sensitive Receptor Locations



COMMENTS:	SOURCES:	COMPANY NAME:	
	20	**Revere Copper Products, Inc.**	
	RECEPTORS: 49	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,242 (0 — 5 km)	
		DATE: **2/1/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

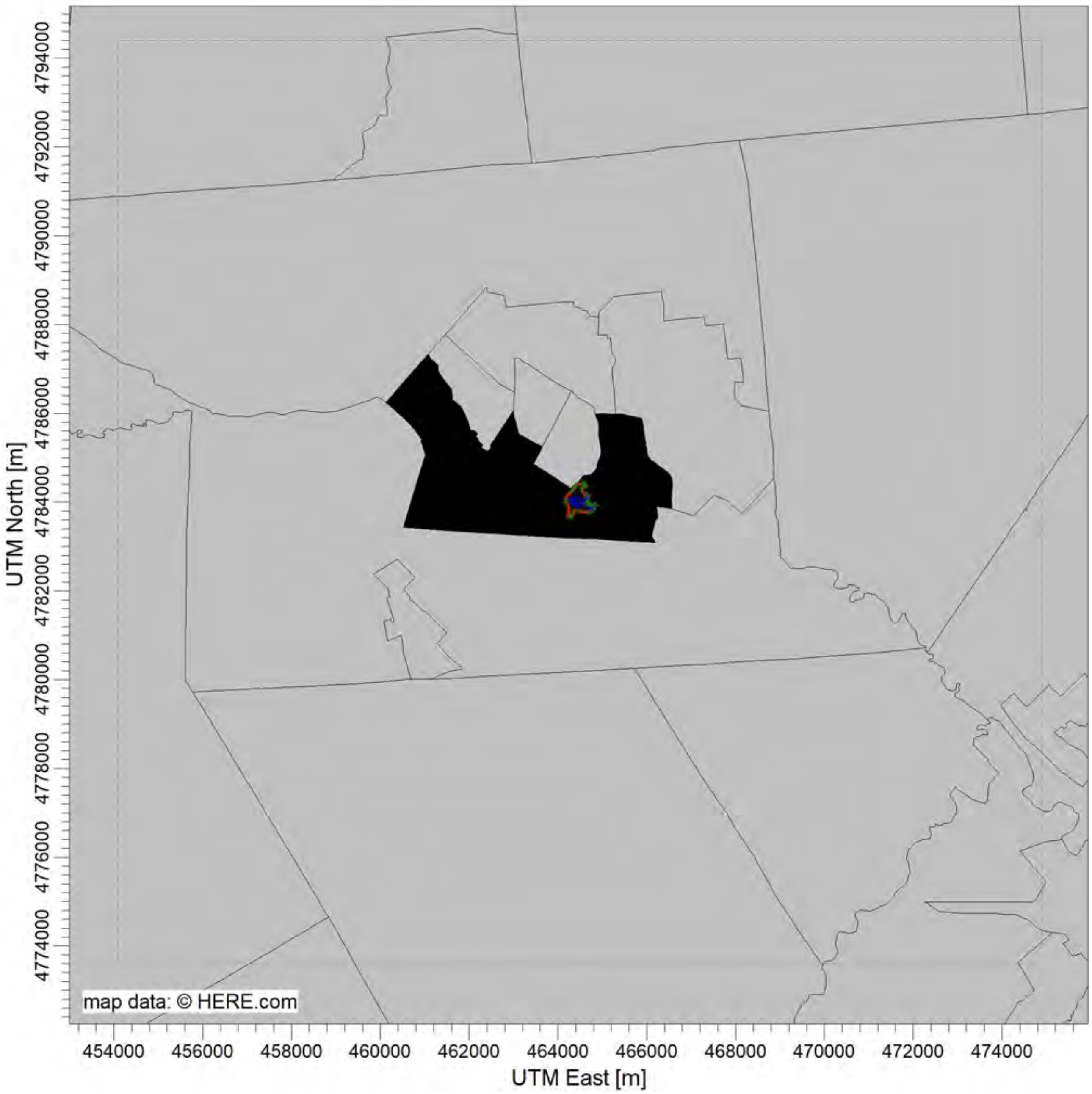
Figure 11 - Environmental Justice Area Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The black shaded areas represent the Environmental Justice Areas. The dashed box represents the model extents, out to 10 km from the facility.	**23**	**Revere Copper Products, Inc.**	
	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,225 0 5 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

PROJECT TITLE:

Figure 12 - Disadvantaged Communities Map



COMMENTS:	SOURCES:	COMPANY NAME:	
The black shaded areas represent the Disadvantaged Communities.	**23**	**Revere Copper Products, Inc.**	
The dashed box represents the model extents, out to 10 km from the facility.	RECEPTORS: **10568**	MODELER: **Steven Miraglia**	RAMBOLL
		SCALE: 1:144,225 0 5 km	
		DATE: **7/16/2023**	PROJECT NO.: **1940103004**

TABLES

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	90	100	NO
Hexylene glycol	00107-41-5	N	N	48	100	NO
Diethylene glycol	00111-46-6	N	N	8.1	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-5	N	N	2.6E-02	100	NO
Alkanolamine	00141-43-5	N	N	141	100	**YES**
Barium oxide	01304-28-5	N	N	0.35	100	NO
Cadmium oxide	01306-19-0	Y	Y	6.4E-02	1	NO
Iron oxide	01309-37-1	N	N	853	100	**YES**
Magnesium oxide	01309-48-4	N	N	2.2	100	NO
Nickel oxide	01313-99-1	Y	N	0.20	10	NO
Zinc oxide	01314-13-2	N	N	7.9	100	NO
Lead oxide	01314-41-6	Y	Y	3.1	5	NO
Copper oxide	01317-38-0	N	N	2,870	100	**YES**
Chromium oxide	01333-82-0	Y	N	8.8E-02	250	NO
Aluminum oxide	01344-28-1	N	N	26	100	NO
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	9.0	100	NO
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	179	100	**YES**
Sodium metasilicate	06834-92-0	N	N	12	100	NO
Silver	07440-22-4	N	N	1.2E-02	100	NO
Tin	07440-31-5	N	N	1.9	100	NO
Copper	07440-50-8	N	N	1,795	100	**YES**
Zinc	07440-66-6	N	N	1.9	100	NO
Zinc chloride	07646-85-7	N	N	0.28	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Sulfuric acid	07664-93-9	N	N	622	100	**YES**
Hydrogen peroxide	07722-84-1	N	N	18	100	NO
Phosphorus	07723-14-0	N	N	1.9E-03	100	NO
Graphite	07782-42-5	N	N	3,759	100	**YES**
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.4	100	NO

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	90	100	NO
Nonylphenol, ethoxylated	09016-45-9	N	N	139	100	**YES**
Sodium phosphate, tribasic	10101-89-0	N	N	4.9	100	NO
Barium chloride	10361-37-2	N	N	0.25	100	NO
Ammonium chloride	12125-02-9	N	N	0.26	100	NO
Tellurium	13494-80-9	N	N	2.9E-03	100	NO
Silver oxide	20667-12-3	N	N	9.1E-02	100	NO
Mercury oxide	21908-53-2	Y	Y	8.3E-04	5	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.13	0.1	NO[c]
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	N	N	150	100	**YES**
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	90	100	NO
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	**YES**
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	815	100	**YES**
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.69	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	809	100	**YES**
Sulfonic acids, petroleum, sodium salts	68608-26-4	N	N	229	100	**YES**
Petroleum distillates	Trade Secret #1	N	N	15	100	NO
Base oil	Trade Secret #3	N	N	139	100	**YES**
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	4,462	100	**YES**
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	N	N	90	100	NO
Proprietary emulsifier	Trade Secret #6	N	N	252	100	**YES**
Azole derivative	Trade Secret #7	N	N	11	100	NO
Trade Secret	Trade Secret #8	N	N	300	100	**YES**

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[(b)] (lb/yr)	Modeling Required (Yes/No)

(c) The NYSDEC Air Toxics Section has reviewed this chemical and indicated that little or no toxicological information was found for it. It was NYSDEC's recommendation that, as this contaminant is approximately equal to the second most stringent MEL that is acceptable for use of 0.1 lb/yr, modeling is not required due to the lack of evidence of this contaminant being considered to be highly toxic.

Table 2
Summary of Stack Parameters[a] (English Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (ft)	Base Elevation (ft)	Stack Height (ft)	Stack Diameter (inches)	Stack Diameter (ft)	Exit Temperature (°F)	Exit Velocity (ft/sec)	Exit Flowrate (acfm)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	142	453	100	36	3.0	80	57	24,000	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	191	453	92	19	1.6	80	58	7,000	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	180	453	45	9.0	0.75	100	19	500	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	253	453	45	9.0	0.75	100	19	500	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	244	453	55	7.0	0.58	100	0.001	0.016	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	190	453	65	3.0	0.25	150	59	174	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	531	453	35	9.0	0.75	100	19	500	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	591	453	42	9.0	0.75	100	19	500	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	384	455	50	48	4.0	200	48	36,499	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	313	455	50	48	4.0	200	50	37,621	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	420	455	18	6.0	0.50	80	119	1,400	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	9.84	453	60	51	4.3	510	43	37,000	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	80.4	453	35	48	4.0	70	51	38,827	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	226	453	44	42	3.5	150	53	30,600	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	102	453	57	36	3.0	70	56	23,554	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	76.8	453	60	72	6.0	70	36	61,334	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	4.49	453	80	30	2.5	115	68	20,000	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	161	453	45	18	1.5	70	5.8	620	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	30.7	453	14	196	16	70	0.001	13	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	482	453	150	84	7.0	200	7.3	16,800	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	505	453	60	50	4.2	390	9.4	7,700	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	73.5	453	44	24	2.0	70	74	14,000	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	25.4	453	45	22	1.8	70	63	10,000	Capped

Notes:
(a) Stack parameters are based on information provided by Revere.

Table 3

Summary of Stack Parameters[a] (Metric Units)

Revere Copper Products, Inc

Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exit Temperature (°C)	Exit Velocity (m/sec)	Exit Flowrate (m^3/sec)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	43.2	138	30	0.91	27	17	11	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	58.3	138	28	0.48	27	18	3.3	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	54.9	138	14	0.23	38	5.7	0.24	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	77.0	138	14	0.23	38	5.7	0.24	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	74.3	138	17	0.18	38	3.0E-04	7.6E-06	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	58.0	138	20	0.08	66	18	8.2E-02	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	162	138	11	0.23	38	5.7	0.24	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	180	138	13	0.23	38	5.7	0.24	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	117	139	15	1.2	93	15	17	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	95.5	139	15	1.2	93	15	18	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	128	139	5.5	0.15	27	36	0.66	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	3.00	138	18	1.3	266	13	17	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	24.5	138	11	1.2	21	16	18	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	69.0	138	13	1.1	66	16	14	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	31.1	138	17	0.91	21	17	11	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	23.4	138	18	1.8	21	11	29	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	1.37	138	24	0.76	46	21	9.4	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	49.1	138	14	0.46	21	1.8	0.29	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	9.35	138	14	196	21	3.0E-04	6.0E-03	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	147	138	46	2.1	93	2.2	7.9	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	154	138	18	1.3	199	2.9	3.6	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	22.4	138	13	0.61	21	23	6.6	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	7.75	138	14	0.56	21	19	4.7	Capped

Notes:

(a) Stack parameters are based on information provided by Revere.

Table 4
Modeled Toxics Emission Rates (Commissioning Plan 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	3.00E-02	3.77E-03
Copper oxide	01317-38-0	1.01E-01	1.27E-02
Graphite	07782-42-5	1.32E-01	1.66E-02
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.82E-01	2.29E-02
Copper oxide	01317-38-0	6.11E-01	7.70E-02
Graphite	07782-42-5	8.00E-01	1.01E-01
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.27E-03	4.12E-04
Copper oxide	01317-38-0	1.10E-02	1.39E-03
Graphite	07782-42-5	1.44E-02	1.81E-03
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	5.37E-05	6.76E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.42E-03	1.79E-04
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	4.42E-04	5.57E-05
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	5.40E-02	6.80E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	5.40E-02	6.80E-03
Nonylphenol, ethoxylated	09016-45-9	5.40E-02	6.80E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	5.40E-02	6.80E-03
Base oil	Trade Secret #3	5.40E-02	6.80E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	3.17E-02	3.99E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.90E-02	2.39E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5.70E-01	7.18E-02
Trade Secret	Trade Secret #8	6.33E-02	7.98E-03
U-ROLL1 (EP00026) - Reversing Mill			
2-Aminoethanol	00141-43-5	7.97E-04	1.00E-04
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	2.09E-02	2.63E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	1.47E-01	1.86E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.33E-01	1.05E-01
U-OVER1 (EP00031) - Overhauler			
Copper	07440-50-8	3.71E-01	4.67E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	2.55E-01	3.21E-02
Proprietary emulsifier	Trade Secret #6	5.20E-03	6.55E-04

Table 4
Modeled Toxics Emission Rates (Commissioning Plan 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.66E-03	1.22E-03
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.07E-03	1.35E-04
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	5.52E-03	6.96E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.07E-03	1.35E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.66E-03	1.22E-03
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.59E-02	2.00E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	3.27E-03	4.12E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.46E-01	1.84E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use.

Table 5
Modeled Toxics Emission Rates (Commissioning Plan - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.44E-02	1.82E-03
Copper oxide	01317-38-0	4.86E-02	6.12E-03
Graphite	07782-42-5	6.36E-02	8.01E-03
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	8.26E-02	1.04E-02
Copper oxide	01317-38-0	2.78E-01	3.50E-02
Graphite	07782-42-5	3.64E-01	4.59E-02
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.12E-04	3.93E-05
Copper oxide	01317-38-0	1.05E-03	1.32E-04
Graphite	07782-42-5	1.37E-03	1.73E-04
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	8.04E-06	1.01E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	2.13E-04	2.69E-05
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	6.62E-05	8.34E-06
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	1.59E-02	2.00E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.59E-02	2.00E-03
Nonylphenol, ethoxylated	09016-45-9	1.59E-02	2.00E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.59E-02	2.00E-03
Base oil	Trade Secret #3	1.59E-02	2.00E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	1.71E-02	2.16E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.03E-02	1.30E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	3.08E-01	3.89E-02
Trade Secret	Trade Secret #8	3.43E-02	4.32E-03
U-ROLL1 (EP00026) - Reversing Mill			
2-Aminoethanol	00141-43-5	5.03E-04	6.34E-05
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	1.32E-02	1.66E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	9.30E-02	1.17E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	7.45E-02	9.39E-03
U-OVER1 (EP00031) - Overhauler			
Copper	07440-50-8	2.05E-01	2.58E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	1.41E-01	1.77E-02
Proprietary emulsifier	Trade Secret #6	2.87E-03	3.62E-04

Table 5
Modeled Toxics Emission Rates (Commissioning Plan - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.73E-03	2.18E-04
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.92E-04	2.42E-05
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	2.15E-03	2.70E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.90E-04	1.12E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.01E-03	1.01E-03
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.61E-03	1.21E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	2.22E-03	2.80E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.13E-01	1.42E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use. Additionally, the modeled emission rates incorporate the limited annual operating hours as proposed in the Commissioning Plan.

Table 6
Hours Used to Calculate Annual Modeling Emission Rates for Commissioning Plan
Revere Copper Products, Inc
Rome, NY

Sources					Commissioning Plan Operating Hours								Total Hours
	January (hr/yr)	February (hr/yr)	March (hr/yr)	April (hr/yr)	May (hr/yr)	June (hr/yr)	Month 1 (hr/yr)	Month 2 (hr/yr)	Month 3 (hr/yr)	Month 4 (hr/yr)	Month 5 (hr/yr)	Month 6 (hr/yr)	(hr/yr)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse	255	375	354	417	410	247	247	247	417	417	417	417	4220
U-CAST1 (EP00040) - Casting Furnaces To Baghouse	342	324	329	316	198	354	354	354	354	354	354	354	3987
U-CAST1 (EP00602) - Central Vacuum	12	14	102	47	126	10	10	10	126	126	126	126	835
U-ROLL1 (EP00036) - Bliss Mill	112	104	96	144	112	56	56	56	144	144	144	144	1312
U-ROLL1 (EP00030) - Hot Mill	200	216	248	216	168	168	175	194	248	248	248	248	2577
U-ROLL1 (EP00029) - First Run Down Mill	440	272	480	344	200	352	358	373	480	480	480	480	4739
U-ROLL1 (EP00026) - Reversing Mill	472	424	552	440	304	376	376	376	552	552	552	552	5528
U-ROLL1 (EP00025) - Z-Mill	128	96	48	0	0	0	0	0	128	128	128	128	784
U-OVER1 (EP00031) - Overhauler	384	360	472	376	280	352	357	369	472	472	472	472	4838
U-ANNE1 (EP00362) - Bright Anneal Exit	56	184	96	104	128	88	88	88	184	184	184	184	1568
U-ANNE1 (EP00367) - Bright Anneal Entry	56	184	96	104	128	88	88	88	184	184	184	184	1568
U-ANNE1 (EP00369) - Lee Wilson Anneal	272	168	272	264	104	332	332	332	332	332	332	332	3404
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Ent	672	624	712	672	496	336	419	480	712	712	712	712	7259
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exi	672	624	712	672	496	336	419	480	712	712	712	712	7259
U-ANNE1 (EP00027) - Strand Anneal	472	400	536	360	240	384	384	384	536	536	536	536	5304
U-ANNE1 (EP00440) - Ebner Anneal	720	624	736	776	0	0	0	0	776	776	776	776	5960
1740 Heavy Gauge Cleaning (EP 00028)	576	576	664	592	432	432	432	432	664	664	664	664	6792

Table 7
Sensitive Receptors[a]
Revere Copper Products, Inc
Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Schools		
Bellamy Elementary	465,720	4,783,850
Boces Consortium Continuing Ed	462,528	4,784,566
Central New York Academy Of Dance	460,703	4,785,892
Gansevoort Elementary School	461,577	4,785,376
George R Staley Elementary School[b]	464,091	4,784,259
Griffiss Child Development Center	466,431	4,784,586
John E Joy Elementary School	462,632	4,789,581
Kings Kids Christian Pre Sch	462,782	4,788,475
Louis V Denti Elementary School	462,396	4,786,724
Lyndon Strough Middle School	462,419	4,786,361
Mohawk Valley Community Action	456,820	4,789,491
New York State School for the Deaf	462,903	4,785,755
Nursery School of First Presbyterian Church	462,965	4,784,642
Oriskany High School	472,341	4,778,864
Ridge Mills Elementary School	464,380	4,787,712
Rome Catholic School	463,198	4,787,436
Rome Early Childhood Program	465,282	4,785,572
Rome Free Academy	466,258	4,784,343
Rome Refugee Services English School	463,345	4,784,544
Hospitals		
Rome Memorial Hospital: Prenatal Care	462,726	4,784,371
Rome Health General Hospital	464,043	4,786,362
Rome Memorial Hospital: Outpatient	462,936	4,788,048
Rome Memorial Hospital Diagnostic	464,184	4,786,658
Nursing Homes		
Rome Health Residential Health Care Facility	464,082	4,786,357
Colonial Park Rehabilitation & Nursing Center	464,827	4,785,055
The Grand Rehabilitation and Nursing at Rome	463,374	4,785,477
Betsy Ross Nursing Facility	462,159	4,786,848
Bethany Gardens	463,285	4,787,249
Nascentia Health	463,165	4,788,233
Terrace at Woodland	462,247	4,790,234
Eastern Star Home	472,341	4,778,994
Pounder Hall Inc	472,253	4,778,932
New Burton Homestead	463,373	4,784,596
Central Ny Ddso-Rome	459,846	4,781,187
Daycares		
Eastern Star Day Care Center Inc	472,319	4,779,065
Jesus Brethren Christian Schools	462,667	4,786,400
Peek-A-Boo Place Daycare	464,609	4,776,669
Little Folks Daycare	462,655	4,785,803
Home Grown Tots Daycare	462,945	4,785,413

Table 7
Sensitive Receptors[a]
Revere Copper Products, Inc
Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Loving Hands Daycare	463,128	4,786,461
Cottage Hill Daycare	462,363	4,790,293
Something New Daycare	461,726	4,791,057
Little Brook Daycare LLC	464,832	4,784,404
Here We Grow Again Creative Learning Center	464,557	4,783,770
Griffiss Child Development Center	466,431	4,784,586
Rebecca France's Family WeeCare	464,484	4,776,959
Ava Dorfman Adult Day Care Center	463,946	4,785,636
Wild Things Child Care	464,605	4,781,966
Children's Dyslexia Center of Central New York	472,319	4,779,229
Mid York Child Care	470,136	4,777,410

Notes:

(a) Sensitive receptors were identified using Google Maps to identify the schools, hospitals, nursing homes, and daycares located within a 10 kilometer radius from the facility, and Google Earth for receptor coordinates.

(b) Note that this school is permanently closed due to flooding conditions. No receptor was added to the modeling for this location.

Table 8
Comissioning Plan Air Toxics Modeling Results - Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC/AGC[a] ($\mu g/m^3$)	Percent of SGC/AGC (%)
Alkanolamine	00141-43-5	1-Hour	0.981	1,500	<1
		Annual	0.00810	18	<1
Iron oxide	01309-37-1	1-Hour	1.73	---	---
		Annual	0.0451	12	<1
Copper oxide[b]	01317-38-0	1-Hour	5.83	100	6
		Annual	0.152	0.48	32
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol[c]	04719-04-4	1-Hour	0.981	30	3
		Annual	0.0347	0.06	58
Copper	07440-50-8	1-Hour	18.1	100	18
		Annual	0.330	0.48	69
Sulfuric acid	07664-93-9	1-Hour	4.44	120	4
		Annual	0.365	1.0	36
Graphite	07782-42-5	1-Hour	7.64	---	---
		Annual	0.199	4.8	4
Nonylphenol, ethoxylated[c]	09016-45-9	1-Hour	0.981	93	1
		Annual	0.00782	20	<1
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-[c]	57635-48-0	1-Hour	0.812	---	---
		Annual	0.0232	0.01	232

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Table 8
Comissioning Plan Air Toxics Modeling Results - Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC / AGC[a] ($\mu g/m^3$)	Percent of SGC / AGC (%)
Distillates, petroleum, hydrotreated light	64742-47-8	1-Hour	26.4	---	---
		Annual	1.00	900	<1
Hydrotreated heavy naphthenic petroleum oil[c]	64742-52-5	1-Hour	4.31	380	1
		Annual	0.226	12	2
Distillates (petroleum), solvent-dewaxed light paraffinic[c]	64742-56-9	1-Hour	52.5	380	14
		Annual	0.291	12	2
Sulfonic acid, petroleum, sodium salts[c]	68608-26-4	1-Hour	1.11	---	---
		Annual	0.0190	0.10	19
Base oil[c]	Trade Secret #3	1-Hour	0.981	380	<1
		Annual	0.00782	12	<1
Highly refined, low viscosity mineral oils/hydrocarbons[c]	Trade Secret #4	1-Hour	22.3	380	6
		Annual	0.645	12	5
Proprietary emulsifier[c]	Trade Secret #6	1-Hour	0.254	---	---
		Annual	0.00464	0.10	5
Trade Secret[c]	Trade Secret #8	1-Hour	1.62	---	---
		Annual	0.0464	0.001	4645

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Table 8
Comissioning Plan Air Toxics Modeling Results - Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC / AGC[a] ($\mu g/m^3$)	Percent of SGC / AGC (%)

Notes:

(a) Annual and short-term guideline concentrations (AGCs and SGCs, respectively) are based on NYSDEC's DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212 issued February 12, 2021 unless otherwise noted.

(b) Copper oxide is not listed in DAR-1. For a different permit application, Ramboll proposed using the SGC/AGC for copper as interim values, which was approved for use by NYSDEC via email from Steve DeSantis on 1/31/2018.

(c) NYSDEC has provided interim AGCs and SGCs for these contaminants based on toxicological reviews.

Table 9
Comissioning Plan Air Toxics Modeling Results - Outside of Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration (µg/m³)	SGC/AGC[a] (µg/m³)	Percent of SGC/AGC (%)
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol[c]	04719-04-4	1-Hour	0.981	30	3
		Annual	0.0347	0.06	58
Copper and Copper oxide, combined[b]	07440-50-8/01317-38-0	1-Hour	18.1	100	18
		Annual	0.468	0.48	98
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-[c]	57635-48-0	1-Hour	0.812	---	---
		Annual	0.0230	0.01	230
Trade Secret[c]	Trade Secret #8	1-Hour	1.62	---	---
		Annual	0.0459	0.001	4591

Notes:

(a) Annual and short-term guideline concentrations (AGCs and SGCs, respectively) are based on NYSDEC's DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212 issued February 12, 2021 unless otherwise noted.
(b) As requested by NYSDEC on July 20, 2023, emissions of copper and copper oxide are modeled together and compared to the SGC/AGC for copper.
(c) NYSDEC has provided interim AGCs and SGCs for these contaminants based on toxicological reviews.

Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[(b)] (lb/yr)	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	90	100	NO
Hexylene glycol	00107-41-5	N	N	48	100	NO
Diethylene glycol	00111-46-6	N	N	8.1	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-5	N	N	2.6E-02	100	NO
Alkanolamine	00141-43-5	N	N	141	100	**YES**
Barium oxide	01304-28-5	N	N	0.35	100	NO
Cadmium oxide	01306-19-0	Y	Y	6.4E-02	1	NO
Iron oxide	01309-37-1	N	N	853	100	**YES**
Magnesium oxide	01309-48-4	N	N	2.2	100	NO
Nickel oxide	01313-99-1	Y	N	0.20	10	NO
Zinc oxide	01314-13-2	N	N	7.9	100	NO
Lead oxide	01314-41-6	Y	Y	3.1	5	NO
Copper oxide	01317-38-0	N	N	2,870	100	**YES**
Chromium oxide	01333-82-0	Y	N	8.8E-02	250	NO
Aluminum oxide	01344-28-1	N	N	26	100	NO
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	9.0	100	NO
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	179	100	**YES**
Sodium metasilicate	06834-92-0	N	N	12	100	NO
Silver	07440-22-4	N	N	1.2E-02	100	NO
Tin	07440-31-5	N	N	1.9	100	NO
Copper	07440-50-8	N	N	1,795	100	**YES**
Zinc	07440-66-6	N	N	1.9	100	NO
Zinc chloride	07646-85-7	N	N	0.28	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Hydrogen chloride	07647-01-0	N	N	2.5	100	NO
Sulfuric acid	07664-93-9	N	N	622	100	**YES**
Hydrogen peroxide	07722-84-1	N	N	18	100	NO
Phosphorus	07723-14-0	N	N	1.9E-03	100	NO
Graphite	07782-42-5	N	N	3,759	100	**YES**
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.4	100	NO

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Table 1
Summary of Part 212 Evaluation
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[a] (Y/N)	PB Trigger[a] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[b] (lb/yr)	Modeling Required (Yes/No)
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	90	100	NO
Nonylphenol, ethoxylated	09016-45-9	N	N	139	100	**YES**
Sodium phosphate, tribasic	10101-89-0	N	N	4.9	100	NO
Barium chloride	10361-37-2	N	N	0.25	100	NO
Ammonium chloride	12125-02-9	N	N	0.26	100	NO
Tellurium	13494-80-9	N	N	2.9E-03	100	NO
Silver oxide	20667-12-3	N	N	9.1E-02	100	NO
Mercury oxide	21908-53-2	Y	Y	8.3E-04	5	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.13	0.1	NO[c]
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	N	N	150	100	**YES**
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	90	100	NO
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	**YES**
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	815	100	**YES**
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.69	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	809	100	**YES**
Sulfonic acids, petroleum, sodium salts	68608-26-4	N	N	229	100	**YES**
Petroleum distillates	Trade Secret #1	N	N	15	100	NO
Base oil	Trade Secret #3	N	N	139	100	**YES**
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	4,462	100	**YES**
Fatty acids, C18-unsaturated phosphates	Trade Secret #5	N	N	90	100	NO
Proprietary emulsifier	Trade Secret #6	N	N	252	100	**YES**
Azole derivative	Trade Secret #7	N	N	11	100	NO
Trade Secret	Trade Secret #8	N	N	300	100	**YES**

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Actual Emissions (lb/yr)	Mass Emission Limit[(b)] (lb/yr)	Modeling Required (Yes/No)

(c) The NYSDEC Air Toxics Section has reviewed this chemical and indicated that little or no toxicological information was found for it. It was NYSDEC's recommendation that, as this contaminant is approximately equal to the second most stringent MEL that is acceptable for use of 0.1 lb/yr, modeling is not required due to the lack of evidence of this contaminant being considered to be highly toxic.

Table 2

Summary of Stack Parameters[(a)] (English Units)

Revere Copper Products, Inc

Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (ft)	Base Elevation (ft)	Stack Height (ft)	Stack Diameter (inches)	Stack Diameter (ft)	Exit Temperature (°F)	Exit Velocity (ft/sec)	Exit Flowrate (acfm)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	142	453	100	36	3.0	80	57	24,000	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	191	453	92	19	1.6	80	58	7,000	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	180	453	45	9.0	0.75	100	19	500	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	253	453	45	9.0	0.75	100	19	500	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	244	453	55	7.0	0.58	100	0.001	0.016	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	190	453	65	3.0	0.25	150	59	174	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	531	453	35	9.0	0.75	100	19	500	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	591	453	42	9.0	0.75	100	19	500	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	384	455	50	48	4.0	200	48	36,499	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	313	455	50	48	4.0	200	50	37,621	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	420	455	18	6.0	0.50	80	119	1,400	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	9.84	453	60	51	4.3	510	43	37,000	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	80.4	453	35	48	4.0	70	51	38,827	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	226	453	44	42	3.5	150	53	30,600	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	102	453	57	36	3.0	70	56	23,554	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	76.8	453	60	72	6.0	70	36	61,334	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	4.49	453	80	30	2.5	115	68	20,000	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	161	453	45	18	1.5	70	5.8	620	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	30.7	453	14	196	16	70	0.001	13	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	482	453	150	84	7.0	200	7.3	16,800	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	505	453	60	50	4.2	390	9.4	7,700	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	73.5	453	44	24	2.0	70	74	14,000	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	25.4	453	45	22	1.8	70	63	10,000	Capped

Notes:

(a) Stack parameters are based on information provided by Revere.

Table 3
Summary of Stack Parameters[(a)] (Metric Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Distance to Property Line (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exit Temperature (°C)	Exit Velocity (m/sec)	Exit Flowrate (m^3/sec)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	464,723	4,783,831	43.2	138	30	0.91	27	17	11	Vertical
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	464,722	4,783,853	58.3	138	28	0.48	27	18	3.3	Vertical
U-ANNE1	00367	51	1154 Bright Anneal Entry Exhaust	464,674	4,783,827	54.9	138	14	0.23	38	5.7	0.24	Capped
U-ANNE1	00362	51	1154 Bright Anneal Exit Exhaust	464,694	4,783,850	77.0	138	14	0.23	38	5.7	0.24	Vertical
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	464,709	4,783,863	74.3	138	17	0.18	38	3.0E-04	7.6E-06	Capped
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	464,687	4,783,880	58.0	138	20	0.08	66	18	8.2E-02	Vertical
U-ANNE1	00189	1	464 Tray Style/Coil Anneal Entry Exhaust	464,468	4,784,007	162	138	11	0.23	38	5.7	0.24	Vertical
U-ANNE1	00190	1	464 Tray Style/Coil Anneal Exit Exhaust	464,452	4,784,028	180	138	13	0.23	38	5.7	0.24	Vertical
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	464,315	4,784,074	117	139	15	1.2	93	15	17	Vertical
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	464,282	4,784,024	95.5	139	15	1.2	93	15	18	Vertical
U-CAST1	00602	21	Central Vacuum Exhaust	464,338	4,784,083	128	139	5.5	0.15	27	36	0.66	Vertical
U-FURN1	00041	51	Walking Beam Furnace Exhaust	464,737	4,783,786	3.00	138	18	1.3	266	13	17	Vertical
U-OVER1	00031	51	1715 Overhauler Exhaust	464,775	4,783,875	24.5	138	11	1.2	21	16	18	Vertical
U-ROLL1	00025	51	1724 Z-Mill Exhaust	464,655	4,783,842	69.0	138	13	1.1	66	16	14	Capped
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	464,707	4,783,903	31.1	138	17	0.91	21	17	11	Vertical
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	464,761	4,783,889	23.4	138	18	1.8	21	11	29	Vertical
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	464,770	4,783,822	1.37	138	24	0.76	46	21	9.4	Vertical
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	464,634	4,783,899	49.1	138	14	0.46	21	1.8	0.29	Capped
U-SOLV1	FUG01	51	Solvent Degreaser Exhaust	464,755	4,783,912	9.35	138	14	196	21	3.0E-04	6.0E-03	Horizontal
U-COMB1	00004	14	Boilers 1 & 2	464,492	4,784,078	147	138	46	2.1	93	2.2	7.9	Vertical
U-COMB1	00003	14	Boiler 3	464,490	4,784,069	154	138	18	1.3	199	2.9	3.6	Capped
U-GALV1	00600	51	02587 Acid Tank	464,624	4,783,941	22.4	138	13	0.61	21	23	6.6	Capped
U-GALV1	00601	51	02587 Molten Metal Tank	464,631	4,783,954	7.75	138	14	0.56	21	19	4.7	Capped

Notes:
(a) Stack parameters are based on information provided by Revere.

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Table 4
Modeled Toxics Emission Rates (Commissioning Plan 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	3.00E-02	3.77E-03
Copper oxide	01317-38-0	1.01E-01	1.27E-02
Graphite	07782-42-5	1.32E-01	1.66E-02
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.82E-01	2.29E-02
Copper oxide	01317-38-0	6.11E-01	7.70E-02
Graphite	07782-42-5	8.00E-01	1.01E-01
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.27E-03	4.12E-04
Copper oxide	01317-38-0	1.10E-02	1.39E-03
Graphite	07782-42-5	1.44E-02	1.81E-03
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	5.37E-05	6.76E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.42E-03	1.79E-04
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	4.42E-04	5.57E-05
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	5.40E-02	6.80E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	5.40E-02	6.80E-03
Nonylphenol, ethoxylated	09016-45-9	5.40E-02	6.80E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	5.40E-02	6.80E-03
Base oil	Trade Secret #3	5.40E-02	6.80E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	3.17E-02	3.99E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.90E-02	2.39E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	5.70E-01	7.18E-02
Trade Secret	Trade Secret #8	6.33E-02	7.98E-03
U-ROLL1 (EP00026) - Reversing Mill			
2-Aminoethanol	00141-43-5	7.97E-04	1.00E-04
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	2.09E-02	2.63E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	1.47E-01	1.86E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.33E-01	1.05E-01
U-OVER1 (EP00031) - Overhauler			
Copper	07440-50-8	3.71E-01	4.67E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	2.55E-01	3.21E-02
Proprietary emulsifier	Trade Secret #6	5.20E-03	6.55E-04

Table 4
Modeled Toxics Emission Rates (Commissioning Plan 1-Hour)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.66E-03	1.22E-03
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.07E-03	1.35E-04
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	5.52E-03	6.96E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.07E-03	1.35E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.66E-03	1.22E-03
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.59E-02	2.00E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	3.27E-03	4.12E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.46E-01	1.84E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use.

Table 5
Modeled Toxics Emission Rates (Commissioning Plan - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	1.44E-02	1.82E-03
Copper oxide	01317-38-0	4.86E-02	6.12E-03
Graphite	07782-42-5	6.36E-02	8.01E-03
U-CAST1 (EP00040) - Casting Furnaces To Baghouse			
Iron oxide	01309-37-1	8.26E-02	1.04E-02
Copper oxide	01317-38-0	2.78E-01	3.50E-02
Graphite	07782-42-5	3.64E-01	4.59E-02
U-CAST1 (EP00602) - Central Vacuum			
Iron oxide	01309-37-1	3.12E-04	3.93E-05
Copper oxide	01317-38-0	1.05E-03	1.32E-04
Graphite	07782-42-5	1.37E-03	1.73E-04
U-ROLL1 (EP00036) - Bliss Mill			
2-Aminoethanol	00141-43-5	8.04E-06	1.01E-06
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	2.13E-04	2.69E-05
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	6.62E-05	8.34E-06
U-ROLL1 (EP00030) - Hot Mill			
Alkanolamine	00141-43-5	1.59E-02	2.00E-03
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	1.59E-02	2.00E-03
Nonylphenol, ethoxylated	09016-45-9	1.59E-02	2.00E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.59E-02	2.00E-03
Base oil	Trade Secret #3	1.59E-02	2.00E-03
U-ROLL1 (EP00029) - First Run Down Mill			
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-	57635-48-0	1.71E-02	2.16E-03
Sulfonic acid, petroleum, sodium salts	68608-26-4	1.03E-02	1.30E-03
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	3.08E-01	3.89E-02
Trade Secret	Trade Secret #8	3.43E-02	4.32E-03
U-ROLL1 (EP00026) - Reversing Mill			
2-Aminoethanol	00141-43-5	5.03E-04	6.34E-05
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	04719-04-4	1.32E-02	1.66E-03
Hydrotreated heavy naphthenic petroleum distillate	64742-52-5	9.30E-02	1.17E-02
U-ROLL1 (EP00025) - Z-Mill			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	7.45E-02	9.39E-03
U-OVER1 (EP00031) - Overhauler			
Copper	07440-50-8	2.05E-01	2.58E-02
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	1.41E-01	1.77E-02
Proprietary emulsifier	Trade Secret #6	2.87E-03	3.62E-04

Table 5
Modeled Toxics Emission Rates (Commissioning Plan - Annual)
Revere Copper Products, Inc
Rome, NY

Sources and Pollutants	CAS Number	Modeled Emission Rate[(a)] (lb/hr)	Modeled Emission Rate[(a)] (g/s)
U-ANNE1 (EP00362) - Bright Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.73E-03	2.18E-04
U-ANNE1 (EP00367) - Bright Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	1.92E-04	2.42E-05
U-ANNE1 (EP00369) - Lee Wilson Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	2.15E-03	2.70E-04
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Entry			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.90E-04	1.12E-04
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exit			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	8.01E-03	1.01E-03
U-ANNE1 (EP00027) - Strand Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	9.61E-03	1.21E-03
U-ANNE1 (EP00440) - Ebner Anneal			
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	2.22E-03	2.80E-04
1740 Heavy Gauge Cleaning (EP 00028)			
Sulfuric acid	07664-93-9	1.13E-01	1.42E-02
U-SOLV1 - Parts Washer (Fugitive)			
Distillates, petroleum, hydrotreated light	64742-47-8	4.95E-02	6.24E-03

Notes:
(a) The modeled emission rates reflect post-control emission rates where a control device is in use. Additionally, the modeled emission rates incorporate the limited annual operating hours as proposed in the Commissioning Plan.

Table 6
Hours Used to Calculate Annual Modeling Emission Rates for Commissioning Plan
Revere Copper Products, Inc
Rome, NY

Sources	Commissioning Plan Operating Hours												Total Hours
	January (hr/yr)	February (hr/yr)	March (hr/yr)	April (hr/yr)	May (hr/yr)	June (hr/yr)	Month 1 (hr/yr)	Month 2 (hr/yr)	Month 3 (hr/yr)	Month 4 (hr/yr)	Month 5 (hr/yr)	Month 6 (hr/yr)	(hr/yr)
U-CAST1 (EP00039) - Casting Furnaces To Baghouse	255	375	354	417	410	247	247	247	417	417	417	417	4220
U-CAST1 (EP00040) - Casting Furnaces To Baghouse	342	324	329	316	198	354	354	354	354	354	354	354	3987
U-CAST1 (EP00602) - Central Vacuum	12	14	102	47	126	10	10	10	126	126	126	126	835
U-ROLL1 (EP00036) - Bliss Mill	112	104	96	144	112	56	56	56	144	144	144	144	1312
U-ROLL1 (EP00030) - Hot Mill	200	216	248	216	168	168	175	194	248	248	248	248	2577
U-ROLL1 (EP00029) - First Run Down Mill	440	272	480	344	200	352	358	373	480	480	480	480	4739
U-ROLL1 (EP00026) - Reversing Mill	472	424	552	440	304	376	376	376	552	552	552	552	5528
U-ROLL1 (EP00025) - Z-Mill	128	96	48	0	0	0	0	0	128	128	128	128	784
U-OVER1 (EP00031) - Overhauler	384	360	472	376	280	352	357	369	472	472	472	472	4838
U-ANNE1 (EP00362) - Bright Anneal Exit	56	184	96	104	128	88	88	88	184	184	184	184	1568
U-ANNE1 (EP00367) - Bright Anneal Entry	56	184	96	104	128	88	88	88	184	184	184	184	1568
U-ANNE1 (EP00369) - Lee Wilson Anneal	272	168	272	264	104	332	332	332	332	332	332	332	3404
U-ANNE1 (EP 00189) - 464 Tray Style/Coil Anneal Ent	672	624	712	672	496	336	419	480	712	712	712	712	7259
U-ANNE1 (EP 00190) - 464 Tray Style/Coil Anneal Exi	672	624	712	672	496	336	419	480	712	712	712	712	7259
U-ANNE1 (EP00027) - Strand Anneal	472	400	536	360	240	384	384	384	536	536	536	536	5304
U-ANNE1 (EP00440) - Ebner Anneal	720	624	736	776	0	0	0	0	776	776	776	776	5960
1740 Heavy Gauge Cleaning (EP 00028)	576	576	664	592	432	432	432	432	664	664	664	664	6792

Table 7
Sensitive Receptors[a]
Revere Copper Products, Inc
Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Schools		
Bellamy Elementary	465,720	4,783,850
Boces Consortium Continuing Ed	462,528	4,784,566
Central New York Academy Of Dance	460,703	4,785,892
Gansevoort Elementary School	461,577	4,785,376
George R Staley Elementary School[b]	464,091	4,784,259
Griffiss Child Development Center	466,431	4,784,586
John E Joy Elementary School	462,632	4,789,581
Kings Kids Christian Pre Sch	462,782	4,788,475
Louis V Denti Elementary School	462,396	4,786,724
Lyndon Strough Middle School	462,419	4,786,361
Mohawk Valley Community Action	456,820	4,789,491
New York State School for the Deaf	462,903	4,785,755
Nursery School of First Presbyterian Church	462,965	4,784,642
Oriskany High School	472,341	4,778,864
Ridge Mills Elementary School	464,380	4,787,712
Rome Catholic School	463,198	4,787,436
Rome Early Childhood Program	465,282	4,785,572
Rome Free Academy	466,258	4,784,343
Rome Refugee Services English School	463,345	4,784,544
Hospitals		
Rome Memorial Hospital: Prenatal Care	462,726	4,784,371
Rome Health General Hospital	464,043	4,786,362
Rome Memorial Hospital: Outpatient	462,936	4,788,048
Rome Memorial Hospital Diagnostic	464,184	4,786,658
Nursing Homes		
Rome Health Residential Health Care Facility	464,082	4,786,357
Colonial Park Rehabilitation & Nursing Center	464,827	4,785,055
The Grand Rehabilitation and Nursing at Rome	463,374	4,785,477
Betsy Ross Nursing Facility	462,159	4,786,848
Bethany Gardens	463,285	4,787,249
Nascentia Health	463,165	4,788,233
Terrace at Woodland	462,247	4,790,234
Eastern Star Home	472,341	4,778,994
Pounder Hall Inc	472,253	4,778,932
New Burton Homestead	463,373	4,784,596
Central Ny Ddso-Rome	459,846	4,781,187
Daycares		
Eastern Star Day Care Center Inc	472,319	4,779,065
Jesus Brethren Christian Schools	462,667	4,786,400
Peek-A-Boo Place Daycare	464,609	4,776,669
Little Folks Daycare	462,655	4,785,803
Home Grown Tots Daycare	462,945	4,785,413

Table 7

Sensitive Receptors[a]

Revere Copper Products, Inc

Rome, NY

Location Name	Receptor Location X-Coordinate (meters)	Receptor Location Y-Coordinate (meters)
Loving Hands Daycare	463,128	4,786,461
Cottage Hill Daycare	462,363	4,790,293
Something New Daycare	461,726	4,791,057
Little Brook Daycare LLC	464,832	4,784,404
Here We Grow Again Creative Learning Center	464,557	4,783,770
Griffiss Child Development Center	466,431	4,784,586
Rebecca France's Family WeeCare	464,484	4,776,959
Ava Dorfman Adult Day Care Center	463,946	4,785,636
Wild Things Child Care	464,605	4,781,966
Children's Dyslexia Center of Central New York	472,319	4,779,229
Mid York Child Care	470,136	4,777,410

Notes:

(a) Sensitive receptors were identified using Google Maps to identify the schools, hospitals, nursing homes, and daycares located within a 10 kilometer radius from the facility, and Google Earth for receptor coordinates.

(b) Note that this school is permanently closed due to flooding conditions. No receptor was added to the modeling for this location.

Table 9
Comissioning Plan Air Toxics Modeling Results - Outside of Multi-Chem
Revere Copper Products, Inc
Rome, NY

Pollutants	CAS Number	Averaging Period	Predicted Concentration ($\mu g/m^3$)	SGC/AGC[a] ($\mu g/m^3$)	Percent of SGC/AGC (%)
2,2',2"-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol[c]	04719-04-4	1-Hour	0.981	30	3
		Annual	0.0347	0.06	58
Copper and Copper oxide, combined[b]	07440-50-8/01317-38-0	1-Hour	18.1	100	18
		Annual	0.468	0.48	98
Poly(oxy-1,2-ethanediyl), α-(carboxymethyl)-ω-[(9Z)-9-octadecen-1-yloxy]-[c]	57635-48-0	1-Hour	0.812	---	---
		Annual	0.0230	0.01	230
Trade Secret[c]	Trade Secret #8	1-Hour	1.62	---	---
		Annual	0.0459	0.001	4591

Notes:

(a) Annual and short-term guideline concentrations (AGCs and SGCs, respectively) are based on NYSDEC's DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under Part 212 issued February 12, 2021 unless otherwise noted.
(b) As requested by NYSDEC on July 20, 2023, emissions of copper and copper oxide are modeled together and compared to the SGC/AGC for copper.
(c) NYSDEC has provided interim AGCs and SGCs for these contaminants based on toxicological reviews.

EXHIBITS

RAMBOLL

ENVIRONMENT
& HEALTH

REVERE COPPER PRODUCTS, INC.
MODELING PROTOCOL

Project name	**Revere Copper Products, Inc. – Air State Facility Permit Renewal**
Project no.	**1087689\1940103004**
Recipient	**NYSDEC Air Dispersion Modeling Group**
Document type	**Modeling Protocol**
Version	**1**
Date	**December 1, 2022**
Prepared by	**Steven Miraglia**
Checked by	**Helena Kubarycz**
Approved by	**Cris Hine**

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1. Project Discussion

Revere Copper Products, Inc. (Revere) is renewing and modifying the Air State Facility (ASF) Permit, ID 6-3013-00091/00039, for their manufacturing facility located at 1 Revere Park in Rome, New York. As a part of the renewal/modification process, the facility is required to perform air dispersion modeling to demonstrate compliance with the air toxics requirements in Title 6 of the New York Code of Rules and Regulations (6 NYCRR) Part 212. A summary of the Part 212 evaluation is provided in **Table 1**.

Air dispersion modeling will be performed using the United States Environmental Protection Agency (USEPA) AERMOD (Version 21112) model. This protocol was developed to satisfy the New York State Department of Environmental Conservation's (NYSDEC's) requirement for submittal of a modeling protocol prior to performing refined air dispersion modeling.

2. Site Location and Description

The facility is located at 1 Revere Park in Rome, NY within Oneida county. A site location map is provided in **Figure 1**. The site is bounded by mixed residential and commercial development to the north, east, and south and by a public park and elementary school to the east.

The primary manufacturing operations at the Revere facility consist of induction furnaces used for copper casting operations, annealing units, rolling mills, and a copper galvanizing line. Emissions from these processes, except for the galvanizing line, require air dispersion modeling to demonstrate compliance with Part 212. The emissions of criteria pollutants are capped to below the major source thresholds; therefore, no modeling of criteria pollutants will be performed.

3. Stack Parameters and Buildings

Stack parameters for the emission points that are expected to be included in the refined modeling analysis are provided in **Table 2** (English Units) and **Table 3** (Metric Units). Note that some of the stack parameters are currently being collected or confirmed by Revere; the modeling report will include complete stack parameter tables. Additionally, the building heights and locations of each stack are also being confirmed by Revere; the modeling report will include a site layout map with the building heights and stack locations.

4. Emission Rates

Emission rates that will require modeling are in the process of being finalized and will be included in the modeling report.

5. Urban/Rural Classification

In accordance with Section 2.3 of NYSDEC's DAR-10 air dispersion modeling guidance document: "Only facilities located in the New York City metro area may have sufficiently high population density and urban heat island effects to justify the use of urban dispersion coefficients." The site is not located in the New York City metro area; therefore, rural dispersion coefficients will be used in the analysis.

6. Good Engineering Practice Stack Height Analysis

USEPA provides specific guidance for calculating Good Engineering Practice (GEP) stack height and for evaluating whether building downwash will occur (USEPA, 2003). GEP stack height is defined by USEPA as the height of the structure plus 1.5 times the lesser of the structure height or projected width. If the stack height for a source is less than the height identified using GEP guidelines, based on the dimensions of nearby buildings, then the potential for building downwash to occur exists and is to be considered in the modeling analysis.

The stacks to be modeled in this analysis will be less than GEP stack height. Therefore, 36 directional building heights and widths data will be estimated using the USEPA Building Profile Input Program, PRIME version (BPIP-PRIME) and incorporated into the AERMOD model.

7. Meteorological Data

The closest National Weather Service (NWS) station to the facility that has the appropriate available data for AERMOD is located in Rome, New York. The Rome NWS station is located approximately 3 kilometers to the Northeast of the facility. Therefore, the Rome, New York NWS station will be utilized for the surface data for this analysis. Upper-air data from Albany, New York will also be used. NYSDEC will provide the necessary pre-processed data for use in the analysis. Data for years 2017-2021 will be used.

8. Receptor Locations

The modeling analysis utilized a set of nested Cartesian grids of receptors with a spacing of 70, 100, and 250 meters extending to a distance of 1, 2, and 5 kilometers, respectively, from the facility. The facility has restricted access with a fence that encloses the entire property; therefore, fence line receptors will be included at a spacing of 25 meters. On-site receptors inside the fence line will be excluded. If maximum impacts occur beyond 1 km from the facility, an additional grid will be placed around the maximum impacts with grid points 70 meters apart.

The current version of AERMAP will be used to calculate the receptor elevations and appropriate hill height values. Ten-meter resolution National Elevation Dataset (NED) data will be used in the analysis.

9. Lakes Environmental Software – Multi-Chem Use

As shown in **Table 1**, it is anticipated that more than 20 different contaminants will need to be included in the modeling. Due to the large number of contaminants, the analysis will be performed using the multi-chemical (multi-chem) utility of the AERMOD View program by Lakes Environmental Software^{TM}. The purpose of the utility is to streamline the modeling of multiple contaminants by avoiding having to set up separate project files for each contaminant in the analysis.

For each emission source in the analysis, multi-chem creates an AERMOD input file using a normalized emission rate of 1.0 gram per second. The input files are run with AERMOD and produce post files containing the normalized predicted concentrations for each averaging period at each receptor. For example, if the model is run for the 1-hour averaging period, then the post file will contain the normalized 1-hour predicted concentrations for each hour in the meteorological dataset at each receptor. Next, multi-chem takes the source-specific contaminant emission rates, multiplies by the normalized predicted concentrations in the respective post files, and cumulatively adds the values paired in time and location. The results of the calculations are summarized in contaminant-specific plot files. At the bottom of the plot files will be a summary of the source IDs and emission rates used to generate the plot files.

If the maximum impacts of any of the modeled contaminants are 90% or higher of the respective short-term or annual guideline concentration (SGCs and AGCs, respectively) then those contaminants will be run in AERMOD outside of the multi-chem utility.

10. Modeling Results

A modeling report will be submitted to NYSDEC as part of the facility's ASF permit renewal/modification application. The modeling analysis will provide a comparison of the maximum predicted concentrations to the SGC and AGC values provided in the DAR-1 guidance.

Electronic copies of AERMOD input and output files, BPIP input and output files, AERMAP input and output files, and meteorological data files will be submitted to the modeling group in NYSDEC's Central Office.

TABLES

Table 1
Summary of Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Emissions (lb/yr)	Mass Emission Limit[(b)]	Modeling Required (Yes/No)
Propane-1,2-diol	00057-55-6	N	N	605	100	YES
Hexylene glycol	00107-41-5	N	N	216	100	YES
Diethylene glycol	00111-46-6	N	N	7.8	100	NO
2-Butoxyethanol	00111-76-2	N	N	10	100	NO
2-Amino-2-methyl-1-propanol	00124-68-1	N	N	2.3E-02	100	NO
Alkanolamine	00141-43-5	N	N	331	100	YES
Barium oxide	01304-28-5	N	N	33	100	NO
Iron oxide	01309-37-1	N	N	659	100	YES
Magnesium oxide	01309-48-4	N	N	329	100	YES
Nickel oxide	01313-99-1	**Y**	N	33	10	**YES**
Zinc oxide	01314-13-2	N	N	1,647	100	YES
Lead oxide	01314-41-6	**Y**	**Y**	66	5	**YES**
Copper oxide	01317-38-0	N	N	4,941	100	YES
Aluminum oxide	01344-28-1	N	N	659	100	YES
1,2-Benzisothiazol-3(2H)-one	02634-33-5	N	N	12	100	NO
2-Methyl-4-isothiazolin-3-one	02682-20-4	N	N	216	100	YES
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	04719-04-4	N	N	3,588	100	YES
Sodium metasilicate	06834-92-0	N	N	48	100	NO
Silicon	07440-21-3	N	N	165	100	YES
Silver	07440-22-4	N	N	2.7	100	NO
Tin	07440-31-5	N	N	5.7	100	NO
Copper	07440-50-8	N	N	2,650	100	YES
Zinc	07440-66-6	N	N	1.7	100	NO
Zinc chloride	07646-85-7	N	N	3.9	100	NO
Hydrogen chloride	07647-01-0	N	N	39	100	NO
Sulfuric acid	07664-93-9	N	N	4,548	100	YES
Hydrogen peroxide	07722-84-1	N	N	97	100	NO
Phosphorus	07723-14-0	N	N	1.1	100	NO
Graphite	07782-42-5	N	N	13,175	100	YES
Magnesium chloride	07786-30-3	N	N	431	100	YES
Petroleum distillates (mineral oil)	08042-47-5	N	N	2.0	100	NO
(Z)-9-Octadecen-1-ol ethoxylated	09004-98-2	N	N	605	100	YES
Nonylphenol, ethoxylated	09016-45-9	N	N	202	100	YES
Sodium phosphate, tribasic	10101-89-0	N	N	19	100	NO
Barium chloride	10361-37-2	N	N	3.9	100	NO
Magnesium dinitrate	10377-60-3	N	N	906	100	YES
Ammonium chloride	12125-02-9	N	N	3.9	100	NO
Tellurium	13494-80-9	N	N	1.3	100	NO
Polyethylene glycol	25322-68-3	N	N	11	100	NO
Fatty alcohol alkoxylate	37335-03-8	N	N	0.11	100	NO
Amines, tallow alkyl, ethoxylated	61791-26-2	N	N	605	100	YES
Distillates, petroleum, hydrotreated light	64742-47-8	N	N	181	100	YES
Hydrotreated heavy naphthenic petroleum oil	64742-52-5	N	N	3,668	100	YES
Hydrotreated light naphthenic petroleum oil	64742-53-6	N	N	0.60	100	NO
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	N	N	973	100	YES
Sulfonic acid, petroleum, sodium salts	68608-26-4	N	N	806	100	YES
Petroleum distillates	Trade Secret #1	N	N	17	100	NO
Petroleum distillates (mineral oil)	Trade Secret #2	N	N	297	100	YES
Base oil	Trade Secret #3	N	N	202	100	YES
Highly refined, low viscosity mineral oils/hydrocarbons	Trade Secret #4	N	N	9,675	100	YES
Alkyl ether carboxylic acid	Trade Secret #5	N	N	605	100	YES
Proprietary emulsifier	Trade Secret #6	N	N	295	100	YES
Azole derivative	Trade Secret #7	N	N	11	100	NO

Table 1
Summary of Part 212 Proposed Environmental Ratings and High Toxicity Air Contaminant (HTAC) Status
Revere Copper Products, Inc
Rome, NY

Contaminants	CAS Number	HTAC[(a)] (Y/N)	PB Trigger[(a)] (Y/N)	Facility-Wide Annual Emissions (lb/yr)	Mass Emission Limit[(b)]	Modeling Required (Yes/No)

Notes:
(a) HTAC and PB Trigger status as provided in 6 NYCRR Part 212-2.2 Table 2.
(b) Mass Emission Limit (MEL) is based on 6 NYCRR Part 212-2.2 Table 2. For non-HTACs a limit of 100 lb/yr is listed.

Table 2
Summary of Stack Parameters (English Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Base Elevation (ft)	Stack Height (ft)	Stack Diameter (inches)	Stack Diameter (ft)	Exit Temperature (°F)	Exit Velocity (ft/sec)	Exit Flowrate (acfm)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	(a)	(a)	445	82	36	3.0	(a)	(a)	(a)	(a)
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	(a)	(a)	445	88	19	1.6	(a)	(a)	(a)	(a)
U-ANNE1	00367	51	1154 Bright Anneal Exhaust	(a)	(a)	445	30	12	1.0	(a)	(a)	(a)	(a)
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	(a)	(a)	445	30	7	0.6	(a)	(a)	(a)	(a)
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	(a)	(a)	445	30	3	0.3	(a)	(a)	(a)	(a)
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	(a)	(a)	445	50	48	4.0	200	60	45,000	(a)
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	(a)	(a)	445	50	48	4.0	200	60	45,000	(a)
U-CAST1	00602	21	Central Vacuum Exhaust	(a)	(a)	445	18	6	0.5	(a)	(a)	(a)	(a)
U-OVER1	00031	51	1715 Overhauler Exhaust	(a)	(a)	445	44	48	4.0	70	40	30,000	(a)
U-ROLL1	00025	51	1724 Z-Mill Exhaust	(a)	(a)	445	44	42	3.5	150	53	30,600	(a)
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	(a)	(a)	445	30	36	3.0	70	53	22,500	(a)
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	(a)	(a)	445	60	72	6.0	70	8	13,000	(a)
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	(a)	(a)	445	80	30	2.5	115	68	20,000	(a)
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	(a)	(a)	445	45	18	1.5	70	6	620	(a)
U-SOLV1	Fugitive	51	Solvent Degreaser Exhaust	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Notes:
(a) Stack parameters and locations are currently being collected by Revere.

Table 3
Summary of Stack Parameters (Metric Units)
Revere Copper Products, Inc
Rome, NY

Emission Unit	Emission Point	Building	Description	Stack Location X-Coordinate (meters)	Stack Location Y-Coordinate (meters)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exit Temperature (°C)	Exit Velocity (m/sec)	Exit Flowrate (m^3/sec)	Stack Orientation
U-ANNE1	00027	51	1738 Strand Anneal Wet Scrubber Exhaust	(a)	(a)	136	25	0.91	(a)	(a)	(a)	(a)
U-ANNE1	00028	51	1740 Heavy Gauge Wet Scrubber Exhaust	(a)	(a)	136	27	0.48	(a)	(a)	(a)	(a)
U-ANNE1	00367	51	1154 Bright Anneal Exhaust	(a)	(a)	136	9	0.30	(a)	(a)	(a)	(a)
U-ANNE1	00369	51	1729-1734 Lee Wilson Exhaust	(a)	(a)	136	9	0.18	(a)	(a)	(a)	(a)
U-ANNE1	00440	51	2383-2386 Ebner Exhaust	(a)	(a)	136	9	0.08	(a)	(a)	(a)	(a)
U-CAST1	00039	21	1799 & 2443 Baghouse Exhaust	(a)	(a)	136	15	1.22	93	18	21	(a)
U-CAST1	00040	21	2056 & 2057 Baghouse Exhaust	(a)	(a)	136	15	1.22	93	18	21	(a)
U-CAST1	00602	21	Central Vacuum Exhaust	(a)	(a)	136	5	0.15	(a)	(a)	(a)	(a)
U-OVER1	00031	51	1715 Overhauler Exhaust	(a)	(a)	136	13	1.22	21	12	14	(a)
U-ROLL1	00025	51	1724 Z-Mill Exhaust	(a)	(a)	136	13	1.07	66	16	14	(a)
U-ROLL1	00026	51	1723 Reversing Mill Exhaust	(a)	(a)	136	9	0.91	21	16	11	(a)
U-ROLL1	00029	51	1721 First Run Down Mill Exhaust	(a)	(a)	136	18	1.83	21	2	6	(a)
U-ROLL1	00030	51	1706 Hot Mill Mist Eliminator Exhaust	(a)	(a)	136	24	0.76	46	21	9	(a)
U-ROLL1	00036	51	1176 Bliss Mill Mist Eliminator Exhaust	(a)	(a)	136	14	0.46	21	2	0	(a)
U-SOLV1	Fugitive	51	Solvent Degreaser Exhaust	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

Notes:
(a) Stack parameters and locations are currently being collected by Revere.

FIGURES

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PROJECT: 1940103004 | DATED: 10/21/2022

0 500 1,000 Feet

SITE LOCATION MAP

FIGURE 1

Revere Copper Products, Inc.
1 Revere Park
Rome, NY 13440

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC
A RAMBOLL COMPANY

Alliance TECHNICAL GROUP

July 18, 2023

David Ozog
Environmental Manager
Revere Copper Products Inc.
One Revere Park
Rome, NY 13440
315-338-2160 (direct)
DOzog@reverecopper.com

RE: Investigative Testing
Five (5) Process Exhausts
Alliance Project No. 2023-2747

Dear Mr. Ozog,

Alliance Technical Group, LLC (Alliance) conducted investigative testing at the Revere Copper Products facility located in Rome, New York. Testing concluded of determining the emission rates of filterable and condensable particulate matter (PM) for five (5) process exhausts, with additional copper (Cu) testing at the exhaust of the 1515 Overhauler, at the facility.

Please find attached summaries of the testing results along with a copy of the field data collected during the testing. Please contact me at (315) 289-9433 or via email at jeff.gorman@alliancetg.com if you have any questions or need additional information.

Sincerely,
Alliance Technical Group, LLC

Jeffrey Gorman

Jeff Gorman, QSTI
Operations Manager- New York

Enclosure

Laboratory Reports can be found in the full test report in Exhibit 3 of the Renewal Application

Table 1
Summary of Results – 2056 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/1/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	37,889	37,403	37,572	37,621
Stack Conditions dscfm	34,603	34,469	34,238	34,437
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0039	0.0030	0.0030
Emission Rate, lb/hr	0.64	1.2	0.88	0.89
Condensable Particulate Matter Data				
Concentration, grain/dscf	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Emission Rate, lb/hr	0.079	0.16	0.095	0.11

Table 2
Summary of Results – 2443 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/2/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	36,188	36,524	36,786	36,499
Stack Conditions dscfm	33,277	33,054	33,130	33,154
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Emission Rate, lb/hr	0.25	0.22	0.14	0.20
Condensable Particulate Matter Data				
Concentration, grain/dscf	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Emission Rate, lb/hr	0.14	0.12	0.14	0.13

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255 Grant St. SE, Suite 600
Decatur, AL 35601
256.351.0121

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Table 3
Summary of Results – 1715 Overhauler

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/30/23**	**5/31/23**	**5/31/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	39,813	39,971	36,697	38,827
Stack Conditions dscfm	39,075	38,880	35,533	37,829
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0035	0.013	0.0064	0.0075
Emission Rate, lb/hr	1.2	4.2	1.9	2.4
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0017	7.9E-04	0.0016
Emission Rate, lb/hr	0.75	0.55	0.24	0.52
Copper Data				
Concentration, ug/dscm	2,538	--	--	2,538
Emission Rate, lb/hr	0.37	--	--	0.37

Table 4
Summary of Results – 1723 Reversing Mill

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	25,441	23,155	22,064	23,554
Stack Conditions dscfm	24,404	21,982	20,736	22,374
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Emission Rate, lb/hr	0.18	0.18	0.11	0.16
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0011	0.0012	9.0E-04	0.0011
Emission Rate, lb/hr	0.23	0.22	0.16	0.20

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Decatur, AL 35601
256.351.0121

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Table 5
Summary of Results – 1721 First Run Down Mill

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	60,905	61,226	61,870	61,334
Stack Conditions dscfm	57,917	58,539	58,671	58,376
Filterable Particulate Matter Data				
Concentration, grain/dscf	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Emission Rate, lb/hr	0.33	0.27	0.19	0.26
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0018	0.0010	6.5E-04	0.0011
Emission Rate, lb/hr	0.88	0.51	0.33	0.57

Field Data

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Emission Calculations

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min	(θ)	90.0	90.0	90.0	90.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	57.339	57.472	59.538	58.116
Meter Temperature, °F	(Tm)	69.2	78.5	92.1	79.9
Meter Temperature, °R	(Tm)	528.9	538.2	551.8	539.6
Meter Orifice Pressure, in. WC	(ΔH)	1.333	1.350	1.400	1.361
Volume H_2O Collected, mL	(Vlc)	19.1	20.4	24.7	21.4
Nozzle Diameter, in	(Dn)	0.212	0.212	0.212	0.212
Area of Nozzle, ft^2	(An)	0.0002	0.0002	0.0002	0.0002
Filterable PM Mass, mg	(Mn)	3.3	2.8	1.8	2.6
Condensable PM Mass, mg	(M_{CPM})	1.8	1.6	1.8	1.7
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	57.740	56.839	57.459	57.346
Standard Water Volume, ft^3	(Vwstd)	0.901	0.962	1.165	1.009
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
Meter Pressure, in Hg	(Pm)	30.11	30.09	30.10	30.10
Volume at Nozzle, ft^3	(Vn)	62.789	62.805	63.797	63.13
Isokinetic Sampling Rate, (%)	(I)	98.8	97.9	98.8	98.5
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.8	-0.4	0.0	0.1
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.25	0.22	0.14	0.20
Condensable PM Concentration, grain/dscf	(C_{CPM})	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.14	0.12	0.14	0.13
Total PM Concentration, grain/dscf	(C_{TPM})	0.0014	0.0012	9.7E-04	0.0012
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.39	0.34	0.27	0.33

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min		90.0	90.0	90.0	90.0
VELOCITY HEAD, in. WC					
Point 1		0.70	0.58	0.64	0.64
Point 2		0.69	0.66	0.66	0.67
Point 3		0.68	0.69	0.69	0.69
Point 4		0.68	0.72	0.72	0.71
Point 5		0.68	0.78	0.78	0.75
Point 6		0.68	0.84	0.84	0.79
Point 7		0.68	0.78	0.78	0.75
Point 8		0.68	0.70	0.70	0.69
Point 9		0.68	0.54	0.54	0.59
Point 10		0.54	0.54	0.54	0.54
Point 11		0.70	0.70	0.70	0.70
Point 12		0.76	0.70	0.70	0.72
Point 13		0.62	0.62	0.62	0.62
Point 14		0.64	0.64	0.64	0.64
Point 15		0.72	0.72	0.72	0.72
Point 16		0.76	0.76	0.76	0.76
Point 17		0.80	0.80	0.80	0.80
Point 18		0.80	0.80	0.80	0.80
Point 19		0.76	0.76	0.76	0.76
Point 20		0.68	0.68	0.68	0.68
Point 21		0.56	0.56	0.68	0.60
Point 22		0.58	0.58	0.58	0.58
Point 23		0.66	0.68	0.68	0.67
Point 24		0.70	0.68	0.68	0.69
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.826	0.828	0.833	0.829
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Static Pressure, in. WC	(Pg)	0.21	0.21	0.21	0.21
Stack Pressure, in. Hg	(Ps)	30.03	30.01	30.02	30.02
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	107.3	115.3	116.4	113.0
Temperature, °R	(Ts)	567.0	575.0	576.1	572.698
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
O_2 Concentration, %	(O_2)	18.1	18.1	18.1	18.1
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.04	29.04	29.04	29.04
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.87	28.86	28.82	28.85
Velocity, ft/sec	(Vs)	48.0	48.4	48.8	48.4
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	36,188	36,524	36,786	36,499
At Standard Conditions, dscfm	(Qs)	33,277	33,054	33,130	33,154

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Emission Calculations

Location Revere Copper - Rome, NY
Source 2056 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min	(θ)	240.0	240.0	240.0	240.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	184.136	181.174	183.960	183.090
Meter Temperature, °F	(Tm)	96.5	87.1	97.7	93.8
Meter Temperature, °R	(Tm)	556.2	546.8	557.3	553.4
Meter Orifice Pressure, in. WC	(ΔH)	1.794	1.773	1.782	1.783
Volume H_2O Collected, mL	(Vlc)	34.6	46.6	51.5	44.2
Nozzle Diameter, in	(Dn)	0.220	0.220	0.220	0.220
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	24.2	44.0	33.6	33.9
Condensable PM Mass, mg	(M_{CPM})	3.0	5.9	3.6	4.2
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	173.571	172.671	172.014	172.752
Standard Water Volume, ft^3	(Vwstd)	1.632	2.198	2.429	2.086
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
Meter Pressure, in Hg	(Pm)	30.24	30.06	30.06	30.12
Volume at Nozzle, ft^3	(Vn)	190.051	187.363	188.760	188.72
Isokinetic Sampling Rate, (%)	(I)	97.4	97.3	97.6	97.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.6	0.2	0.4	0.4
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0022	0.0039	0.0030	0.0030
Filterable PM Emission Rate, lb/hr	(PMR)	0.64	1.2	0.88	0.89
Condensable PM Concentration, grain/dscf	(C_{CPM})	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.079	0.16	0.095	0.11
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0045	0.0033	0.0034
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.72	1.3	1.0	1.0

Emission Calculations

Location	**Revere Copper - Rome, NY**
Source	**2056 Metling Furnace**
Project No.	**AST-2023-2747**
Parameter	**PM/CPM**

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min		240.0	240.0	240.0	240.0
VELOCITY HEAD, in. WC					
Point 1		0.72	0.70	0.73	0.72
Point 2		0.72	0.70	0.73	0.72
Point 3		0.71	0.69	0.74	0.71
Point 4		0.71	0.70	0.74	0.72
Point 5		0.75	0.69	0.73	0.72
Point 6		0.69	0.67	0.73	0.70
Point 7		0.70	0.69	0.71	0.70
Point 8		0.72	0.65	0.73	0.70
Point 9		0.76	0.70	0.74	0.73
Point 10		0.76	0.70	0.73	0.73
Point 11		0.78	0.75	0.75	0.76
Point 12		0.79	0.77	0.74	0.77
Point 13		0.85	0.78	0.72	0.78
Point 14		0.83	0.78	0.71	0.77
Point 15		0.88	0.82	0.78	0.83
Point 16		0.85	0.80	0.79	0.81
Point 17		0.85	0.83	0.80	0.83
Point 18		0.85	0.85	0.83	0.84
Point 19		0.85	0.85	0.85	0.85
Point 20		0.88	0.85	0.87	0.87
Point 21		0.86	0.85	0.88	0.86
Point 22		0.86	0.84	0.84	0.85
Point 23		0.83	0.85	0.85	0.84
Point 24		0.84	0.86	0.85	0.85
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.879	0.873	0.872	0.875
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Static Pressure, in. WC	(Pg)	0.60	0.55	0.60	0.58
Stack Pressure, in. Hg	(Ps)	30.15	29.97	29.97	30.03
Stack Cross-sectional Area, ft^2	(As)	12.31	12.31	12.31	12.31
Temperature, °F	(Ts)	117.2	106.7	112.4	112.1
Temperature, °R	(Ts)	576.9	566.3	572.0	571.746
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
O_2 Concentration, %	(O_2)	18.7	18.7	18.8	18.7
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.07	29.07	29.07	29.07
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.97	28.93	28.92	28.94
Velocity, ft/sec	(Vs)	51.3	50.7	50.9	51.0
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	37,889	37,403	37,572	37,621
At Standard Conditions, dscfm	(Qs)	34,603	34,469	34,238	34,437

Emission Calculations

Location Revere Copper - Rome, NY
Source 1721 First Run Down Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min	(θ)	80.0	80.0	80.0	80.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	55.620	53.918	55.245	54.928
Meter Temperature, °F	(Tm)	91.7	70.4	82.0	81.4
Meter Temperature, °R	(Tm)	551.4	530.0	541.7	541.0
Meter Orifice Pressure, in. WC	(ΔH)	1.503	1.503	1.541	1.516
Volume H_2O Collected, mL	(Vlc)	7.4	18.1	17.5	14.3
Nozzle Diameter, in	(Dn)	0.247	0.247	0.247	0.247
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.3</u>	<u>1.9</u>	<u>1.3</u>	1.8
Condensable PM Mass, mg	(M_{CPM})	6.2	3.6	2.3	4.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	53.998	54.360	54.508	54.288
Standard Water Volume, ft^3	(Vwstd)	0.349	0.854	0.825	0.676
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
Meter Pressure, in Hg	(Pm)	30.26	30.21	30.21	30.23
Volume at Nozzle, ft^3	(Vn)	56.783	56.853	57.478	57.04
Isokinetic Sampling Rate, (%)	(I)	99.0	98.6	98.7	98.8
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	1.2	0.1	0.2	0.5
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.33	0.27	0.19	0.26
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0018	0.0010	6.5E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.88	0.51	0.33	0.57
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0016	0.0010	0.0017
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.2	0.78	0.51	0.83

Underlined values were below the MDL; MDL used for calculation purposes.

Emission Calculations

Location Revere Copper - Rome, NY
Source 1721 First Run Down Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min		80.0	80.0	80.0	80.0
VELOCITY HEAD, in. WC					
Point 1		0.39	0.47	0.48	0.45
Point 2		0.40	0.47	0.48	0.45
Point 3		0.38	0.49	0.48	0.45
Point 4		0.39	0.45	0.45	0.43
Point 5		0.39	0.43	0.44	0.42
Point 6		0.38	0.39	0.41	0.39
Point 7		0.38	0.36	0.37	0.37
Point 8		0.36	0.36	0.34	0.35
Point 9		0.44	0.35	0.38	0.39
Point 10		0.45	0.38	0.39	0.41
Point 11		0.42	0.39	0.39	0.40
Point 12		0.40	0.40	0.39	0.40
Point 13		0.39	0.38	0.40	0.39
Point 14		0.37	0.38	0.39	0.38
Point 15		0.36	0.36	0.35	0.36
Point 16		0.35	0.34	0.34	0.34
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.625	0.631	0.635	0.630
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Static Pressure, in. WC	(Pg)	-0.20	-0.20	-0.20	-0.20
Stack Pressure, in. Hg	(Ps)	30.14	30.09	30.09	30.10
Stack Cross-sectional Area, ft^2	(As)	28.27	28.27	28.27	28.27
Temperature, °F	(Ts)	95.6	86.7	91.5	91.3
Temperature, °R	(Ts)	555.3	546.4	551.2	550.941
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.77	28.67	28.67	28.70
Velocity, ft/sec	(Vs)	35.9	36.1	36.5	36.2
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	60,905	61,226	61,870	61,334
At Standard Conditions, dscfm	(Qs)	57,917	58,539	58,671	58,376

Emission Calculations

Location Revere Copper - Rome, NY
Source 1723 Reversing Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min	(θ)	60.0	60.0	57.5	59.2
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Meter Correction Factor	(Y)	0.997	0.997	0.997	0.997
Orifice Calibration Value	(ΔH @)	1.568	1.568	1.568	1.568
Meter Volume, ft^3	(Vm)	51.374	47.447	43.281	47.367
Meter Temperature, °F	(Tm)	89.5	94.9	96.9	93.8
Meter Temperature, °R	(Tm)	549.1	554.6	556.6	553.4
Meter Orifice Pressure, in. WC	(ΔH)	2.046	1.683	1.504	1.745
Volume H_2O Collected, mL	(Vlc)	18.5	14.4	13.3	15.4
Nozzle Diameter, in	(Dn)	0.215	0.215	0.215	0.215
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.8</u>	<u>2.8</u>	<u>1.7</u>	2.4
Condensable PM Mass, mg	(M_{CPM})	3.5	3.5	2.4	3.1
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	49.926	45.496	41.238	45.554
Standard Water Volume, ft^3	(Vwstd)	0.872	0.679	0.627	0.726
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
Meter Pressure, in Hg	(Pm)	30.35	30.24	30.16	30.25
Volume at Nozzle, ft^3	(Vn)	52.047	47.924	43.878	47.95
Isokinetic Sampling Rate, (%)	(I)	95.6	96.7	97.0	96.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.8	-0.5	0.1	-0.7
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.18	0.18	0.11	0.16
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0011	0.0012	9.0E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.23	0.22	0.16	0.20
Total PM Concentration, grain/dscf	(C_{TPM})	0.0019	0.0021	0.0015	0.0019
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.41	0.40	0.27	0.36

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

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Emission Calculations

Location Revere Copper - Rome, NY
Source 1723 Reversing Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min		60.0	60.0	57.5	59.2
VELOCITY HEAD, in. WC					
Point 1		1.30	1.10	1.10	1.17
Point 2		1.30	1.10	1.10	1.17
Point 3		1.30	1.10	1.10	1.17
Point 4		1.30	1.10	1.10	1.17
Point 5		1.10	1.10	1.10	1.10
Point 6		1.10	1.10	1.10	1.10
Point 7		1.10	1.10	0.86	1.02
Point 8		1.10	1.10	0.87	1.02
Point 9		1.10	1.10	0.87	1.02
Point 10		0.85	0.79	0.87	0.84
Point 11		0.85	0.79	0.74	0.79
Point 12		0.85	0.80	0.71	0.79
Point 13		1.20	0.80	0.74	0.91
Point 14		1.20	0.81	0.72	0.91
Point 15		1.20	0.80	0.68	0.89
Point 16		1.20	0.80	0.66	0.89
Point 17		1.10	0.80	0.67	0.86
Point 18		1.20	0.80	0.67	0.89
Point 19		1.10	0.80	0.67	0.86
Point 20		1.10	0.80	0.67	0.86
Point 21		1.05	0.78	0.67	0.83
Point 22		1.05	0.80	0.61	0.82
Point 23		1.00	0.80	0.66	0.82
Point 24		1.00	0.80	--	0.90
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	1.052	0.952	0.902	0.969
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Static Pressure, in. WC	(Pg)	0.16	0.16	0.16	0.16
Stack Pressure, in. Hg	(Ps)	30.21	30.13	30.06	30.14
Stack Cross-sectional Area, ft^2	(As)	7.07	7.07	7.07	7.07
Temperature, °F	(Ts)	86.3	91.9	96.0	91.4
Temperature, °R	(Ts)	545.9	551.5	555.7	551.045
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.65	28.68	28.67	28.67
Velocity, ft/sec	(Vs)	60.0	54.6	52.0	55.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	25,441	23,155	22,064	23,554
At Standard Conditions, dscfm	(Qs)	24,404	21,982	20,736	22,374

Emission Calculations

Location Revere Copper - Rome, NY
Source 1715 Overhauler
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min	(θ)	60.0	60.0	60.0	60.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	62.536	64.137	59.104	61.926
Meter Temperature, °F	(Tm)	79.0	84.1	88.7	84.0
Meter Temperature, °R	(Tm)	538.7	543.8	548.4	543.6
Meter Orifice Pressure, in. WC	(ΔH)	3.613	3.612	3.133	3.453
Volume H_2O Collected, mL	(Vlc)	35.5	35.2	36.1	35.6
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	14.0	50.8	23.5	29.4
Condensable PM Mass, mg	(M_{CPM})	8.9	6.7	2.9	6.2
Copper Mass, ug	(M_{Cu})	4,400.0	--	--	4,400.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	61.230	62.190	56.765	60.062
Standard Water Volume, ft^3	(Vwstd)	1.676	1.660	1.702	1.680
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
Meter Pressure, in Hg	(Pm)	30.43	30.42	30.38	30.41
Volume at Nozzle, ft^3	(Vn)	62.592	63.934	58.726	61.75
Isokinetic Sampling Rate, (%)	(I)	96.3	98.3	98.1	97.6
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.6	-0.1	-0.1	-0.6
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0035	0.013	0.0064	0.0075
Filterable PM Emission Rate, lb/hr	(PMR)	1.2	4.2	1.9	2.4
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0022	0.0017	7.9E-04	0.0016
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.75	0.55	0.24	0.52
Total PM Concentration, grain/dscf	(C_{TPM})	0.0058	0.014	0.0072	0.0091
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.9	4.8	2.2	3.0
Copper Concentration, ug/dscm	(C_{Cu})	2,538	--	--	2,538
Copper Emission Rate, lb/hr	(ER_{Cu})	0.37	--	--	0.37

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Emission Calculations

Location Revere Copper - Rome, NY
Source 1715 Overhauler
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min		60.0	60.0	60.0	60.0
VELOCITY HEAD, in. WC					
Point 1		0.94	0.86	1.10	0.97
Point 2		0.96	0.79	1.10	0.95
Point 3		0.68	0.77	1.00	0.82
Point 4		0.83	0.77	1.00	0.87
Point 5		0.86	0.77	1.05	0.89
Point 6		0.78	0.80	1.05	0.88
Point 7		1.00	0.77	1.00	0.92
Point 8		1.00	0.75	0.55	0.77
Point 9		1.00	0.90	0.59	0.83
Point 10		0.95	0.88	0.50	0.78
Point 11		1.00	0.78	0.56	0.78
Point 12		1.05	0.80	0.50	0.78
Point 13		0.50	0.80	1.05	0.78
Point 14		0.56	0.79	1.05	0.80
Point 15		0.50	1.00	1.00	0.83
Point 16		0.48	1.05	1.00	0.84
Point 17		1.00	1.00	1.05	1.02
Point 18		1.10	1.10	0.52	0.91
Point 19		1.10	1.10	0.42	0.87
Point 20		1.00	0.95	0.46	0.80
Point 21		1.05	0.95	0.45	0.82
Point 22		1.00	0.90	0.46	0.79
Point 23		1.05	0.95	0.46	0.82
Point 24		1.05	1.00	0.46	0.84
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.938	0.939	0.860	0.912
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Static Pressure, in. WC	(Pg)	-0.50	-0.60	-0.65	-0.58
Stack Pressure, in. Hg	(Ps)	30.12	30.11	30.10	30.11
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	69.0	72.0	73.6	71.5
Temperature, °R	(Ts)	528.6	531.7	533.3	531.184
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.58	28.56	28.54	28.56
Velocity, ft/sec	(Vs)	52.8	53.0	48.7	51.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	39,813	39,971	36,697	38,827
At Standard Conditions, dscfm	(Qs)	39,075	38,880	35,533	37,829

EXHIBIT H-1
REVERE COMMISSIONING PLAN

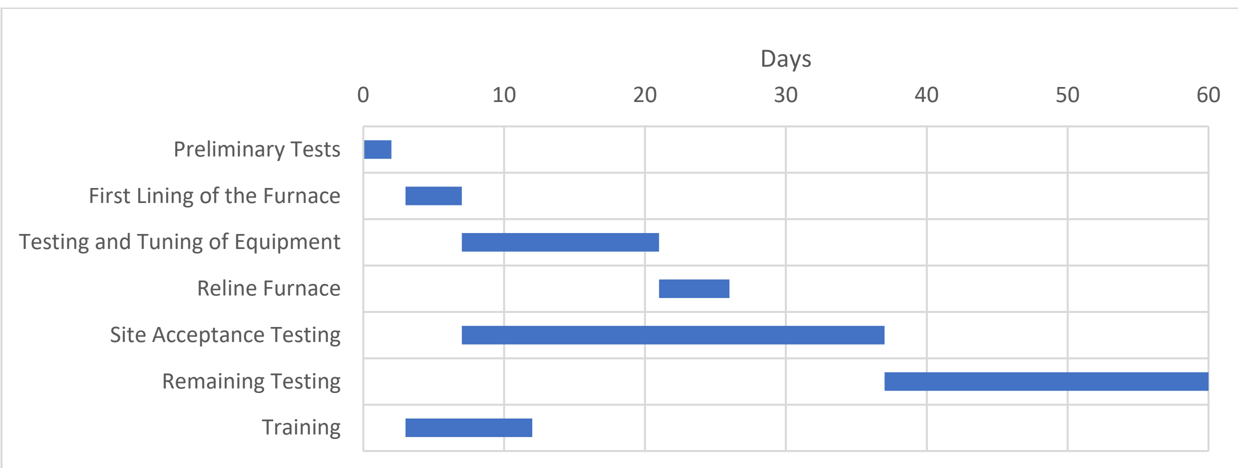
	Coreless Furnace Commissioning Plan	**Last Updated: 6/29/2023**

1 Pre-Commissioning Plan

To prepare for the commissioning of the furnace, the required vendors will need to be contacted to assist with start-up. Our first call will be to our furnace vendor, Inductotherm. They will need to mobilize a team for the commissioning. The installation vendor, EMSCO, will also need to be on-site in case any install related issues arise.

After contacting the necessary vendors to learn of their availability, a commissioning date will be set. Revere will ensure our team has sufficient coverage in terms of safety, maintenance, supervision, production, engineering, training, and process engineering. Revere will also confirm that the final tasks needed for running the furnace are completed. This includes safety precautions such as fence grounding, baghouse damper functionality, bus bar protection, and lock out tag out.

2 Commissioning Timeline



3 Commissioning

Inductotherm will need to be on-site first, for a day or two, to perform preliminary testing and observe equipment functionality. When Inductotherm is completed with testing, our refractory supplier, St. Gobain and their team will lead us on the first lining of the furnace. The lining also involves Gradmatic, who will train us to the functionality of the lining equipment. After the lining is complete, we will sinter the refractory and put the first charge of metal in the furnace. The process will be videotaped to assist with training and documentation. The first few weeks will be filled with training, documentation, quality evaluations, and general tuning of the new equipment. The auto tilt-pour control, refractory scanning tool and leak detection will need to be tested for the first time. The furnace controls and charging system will be tested and adjusted as well. All computer software will be turned on and configured so we can see the status of the various systems, as well as monitor our production variables. During the first few weeks, it is expected that we will pour from the new furnace occasionally.

4 Site Acceptance Test

As part of the commissioning, and while working through the various issues, a complete site acceptance test will be performed. The intent of this test is to ensure every part of the system has been received, installed, and is functioning correctly per the contract. The table below lists all systems and tests we expect to perform in the first few weeks.

System	#	Check Point
General	1	Ensure all items identified on PO are present/delivered.
	2	Review overall machine layout and key components.
	3	Review overall dimensions per print.
	4	Inspect general workmanship (connections, welds, water, etc…)
	5	Review Documentation (data sheets, drawings, certs, manuals)
	6	Review electrical connection type, size, and location per print.
	7	Review hydraulic connections
	8	Review other connections (i.e. water)
	9	The furnace has the ability to melt 33,000 lbs/hour (after the second heat).
Electrical Power	10	Transformers (form, fit, function)
	11	Transformers Soak Test
	12	Power Supply (form, fit, function)
	13	Check electrical connections with Infrared
Furnace	14	Demonstrate front tilt
	15	Demonstrate back tilt
	16	Demonstrate emergency set back
	17	Demonstrate emergency e-stop
	18	Verify load cells function correctly and read the correct weights within specification range.
	19	Demonstrate furnace reaches 7,000 kW
	20	Pressure test and/or demonstrate coil is watertight
	21	Shunts
	22	J-leads
	23	Demonstrate furnace lid actuation
	24	Verify integrity of the duct work connection to the furnace hood
	25	Verify fumes are being collected by the hood and exhaust system. Demonstrate dampers are working correctly during front and back tilt.
	26	Demonstrate various types of scrap load and melt in the furnace as originally described.
Furnace Controls & Software	27	Demonstrate all control functions from all control stations.
	28	Inspect control components for integrity.
	29	Inspect cabinets for hazard and dust integrity
	30	Demonstrate safety interlocks are functioning
	31	Test/Demonstrate Melt Manager Plus software
	32	Demonstrate all programs work as expected (sinter, charge, pour, melt, hold, etc..)

	33	Ensure all interfaces with systems are working correctly (vibratory conveyor, tilt pour control, furnace, temperature reader, scoreboard read-out, etc…)
	34	Verify all data is accessible to Revere (Key metrics)
	35	Verify all alarms are working correctly and test.
	36	Review user interface and ease of navigation
iSense	37	Inspect sensors for integrity and functionality.
	38	Ensure all data is accessible to Revere
	39	Ensure all data is accessible to mobile devices
	40	Demonstrate functions by disconnecting something like a capacitor so it creates a fault, the system finds it, and directs appropriate inspection/work.
	41	Review user interface and ease of navigation
Hydraulics	42	Hydraulic components are leak free
	43	Hydraulic system is leak free
	44	Demonstrate all hydraulic systems meet operational criteria.
	45	Demonstrate all redundant pumps and valves function correctly.
	46	Demonstrate the oil coolers maintain the correct temperature set-points.
	47	Demonstrate all proportional/servo valves are tuned and functioning properly. Verify the hydraulics are responsive and not chattering from entrapped air within the system.
	48	Verify appropriate isolation and lock out valves
Water System	49	Ensure all systems are free of leaks.
	50	Ensure all systems are maintaining temperature set-points.
	51	Demonstrate all emergency city water valves function properly.
	52	Demonstrate all fans and motors work properly
	53	Demonstrate the misting works properly
	54	Ensure both loops work - furnace and power
	55	Demonstrate pump changeover
	56	Demonstrate emergency generator operation
Tilt/Pour Control	57	Demonstrate the functionality of the system
	58	Ensure feedback to the furnace is correct
	59	Ensure probes work correctly
	60	Ensure laser is working correctly
Leak Detection	61	Demonstrate EMMLD and the plug leak detection system are functioning correctly.
Push-out Device	62	Demonstrate the refractory push-out device works in an efficient manner.
Safety	63	Ensure all safety features are functional.
	64	Perform safety risk assessment and test safety features.
	65	Perform noise test to verify the noise levels of the equipment are within the stated requirements.

5 Impact on Downstream Processes

The lots produced during the commissioning will only impact certain production machines in the downstream processes. The lots will be directed to the Bar Mill Value Stream and will impact the operations below.

				Additional runtime for metal processing from coreless furnace comissioning										Total operating hours with coreless furnace commissioning metal ran through production	
				Month 1					Month 2						
Sources and Pollutants	Machine #	June 2023 Operating hours	add'l hr per lot	Wk1 lots 7	Wk2 lots 7	Wk3 lots 7	Wk4 lots 7	Total add'l hours	Wk5 lots 26	Wk6 lots 26	Wk7 lots 26	Wk8 lots 26	Total add'l hours	month 1 hrs	month 2 hrs
U-CAST1 (EP00040) - Casting Furnaces To S. Baghouse		354	1.35	**9.5**	**9.5**	**9.5**	**9.5**	37.8	**35.1**	**35.1**	**35.1**	**35.1**	140.4	354	354
U-ROLL1 (EP00030) - Hot Mill to Mist Eliminator	1706	168	0.25	**1.8**	**1.8**	**1.8**	**1.8**	**7.0**	**6.5**	**6.5**	**6.5**	**6.5**	**26.0**	**175**	**194**
U-ROLL1 (EP00029) - First Run Down Mill to Mist Eliminator	1721	352	0.2	**1.4**	**1.4**	**1.4**	**1.4**	**5.6**	**5.2**	**5.2**	**5.2**	**5.2**	**20.8**	**358**	**373**
U-OVER1 (EP00031) - Overhauler to Wet Scrubber	1715	352	0.17	**1.17**	**1.17**	**1.17**	**1.17**	**4.7**	**4.3**	**4.3**	**4.3**	**4.3**	**17.3**	**357**	**369**
U-ANNE1 (EP 00189/00190) - Tray Style/Coil Anneal (No Control)	464	336	17.5	**20.8**	**20.8**	**20.8**	**20.8**	**83.2**	**36.0**	**36.0**	**36.0**	**36.0**	**144.0**	**419**	**480**
cake heat furnace (natural gas emissions only)	1701	168	0.25	**1.75**	**1.75**	**1.75**	**1.75**	**7.0**	**6.5**	**6.5**	**6.5**	**6.5**	**26.0**	**175**	**194**

EXHIBIT 1
CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT (CLCPA) ANALYSIS

Revere Copper Products Inc. (Rome, New York)

Facility Impact Upon New York State's Climate Leadership and Community Protection Act (CLCPA)

July 2023

Project No.: 0692098

The business of sustainability

ERM

Signature Page

July 2023

Revere Copper Products Inc. (Rome, New York)

Facility Impact Upon New York State's Climate Leadership and Community Protection Act (CLCPA)

Heather Williams
Senior Consultant

Tracey A. Karatas, P.E.
Principal Consultant

Gary Keating
Partner-in-Charge

ERM Consulting & Engineering, Inc.
345 Woodcliff Drive
2nd Floor
Fairport, New York 14450

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ACRONYMS AND ABBREVIATIONS

CO2e	Carbon Dioxide Equivalents
DAC	Disadvantaged Community
ERM	ERM Consulting & Engineering, Inc.
ERP	Emission Rate Potential
GHG	Greenhouse gases
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
lb/yr	Pounds per year
NYSDEC	New York State Department of Environmental Conservation
PTE	Potential-to-Emit
tpy	Tons per year

1. FACILITY AND BUSINESS OVERVIEW

Revere Copper Products, Inc. ("Revere") owns and operates an existing facility located in Rome, New York ("Revere facility" or "Rome facility"). Revere is 100% employee owned and employs 360 people at the Rome facility.

The Rome facility recycles post-consumer copper materials, producing copper coil, sheet, plate, strip and bar products. 99% of the copper feedstock used by Revere is recycled; Revere's products are 100% recyclable. More than 50% of the copper produced by Revere is used in the production of electric vehicle and charging station components, electrical grid upgrades and transmission (e.g., electrical bus bars), and electric cables and data centers. (NOTE: These industries will continue to require a secure domestic source of copper). A significant percentage of Revere's products are also used in the building trades.

Equipment/operations conducted at the facility that are subject to permitting requirements include boilers, induction furnaces, annealing units, metal coating, surface treatment and cleaning, rolling and metal cutting. The facility operations also include emission sources that are exempt from permitting requirements including (but not limited to) diesel and natural gas fired emergency engines, building heaters and tanks.

The Rome facility currently operates under an Air State Facility Permit (NYSDEC Permit ID # 6-3013-00091/00039) that became effective on 24 March 2015 (i.e., "Ren 1/Mod 1" version).

2. PENDING PERMIT APPLICATION

On 8 February 2023, the facility submitted an Air State Facility permit renewal application that included several "modifications" as defined by 6 NYCRR 200.1(aq). These modifications included (but were not limited to) the following changes:

- Replacement of existing 2057 Casting Furnace (Emission Source 01257) with 2728 Casting Furnace (to be permitted as Emission Source 02728). The new 2728 Casting Furnace (an induction furnace) is estimated to provide a 23.3% increase in the casting output over the production rate for 2022.
- Deletion of Permit Conditions 9 and 10 [reflecting facility-wide limitations for sulfur dioxide (SO2) emissions and fuel oil usage, with the underlying requirement of 6 NYCRR 201-7].
- Replacement of the burners in Boilers 1 - 3 (Emission Sources 00BR1, 000BR2 and 00BR3, respectively) to enable use of No. 2 oil rather than No. 6 oil.
- Deletion of requirements for 40 CFR 63 Subpart JJJJJJ, based on the facility's intent to operate Boilers 1 -3 as "gas fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ. (Under this definition, the facility will use No. 2 oil only during a natural gas curtailment or supply interruption).

Other changes described in the permit application include the removal of Billet Furnace 1187 (Emission Source 01187) and the Granco Furnace (Emission Source GRANC).

As part of the effort to replace the existing 2057 Melting Furnace, Revere has also replaced a 94 HP natural gas-fired emergency generator with a new 335 HP natural gas fired emergency generator.

The Department has provided comments regarding the permit application and as a result, Revere is resubmitting a complete and updated permit application. This CLCPA analysis is an attachment to the updated permit application.

3. CLCPA ANALYSIS

3.1 Regulatory Background

In July 2019, Governor Andrew Cuomo signed the Climate Leadership and Community Protection Act (CLCPA), Chapter 106 of the Laws of 2019. When issuing permits, Section 7(2) of the CLCPA requires all state agencies to consider "whether such decisions are inconsistent with, or will interfere with, the attainment of the statewide greenhouse gas (GHG) emission limits established in Article 75 of the environmental conservation law." On 14 December 2022, the NYSDEC issued the final version of NYSDEC Program Policy DAR-21 ("The Climate Leadership and Community Protection Act and Air Permit Applications").

For purposes of the CLCPA, statewide GHG emissions include upstream out-of-state GHG emissions associated with the generation of electricity imported into the State, or the extraction, transmission, and use of fossil fuels imported into the State, and any downstream emissions attributable to the project.

To address section 7(3) of the CLCPA, the NYSDEC is required to "prioritize reductions of GHG emissions and co-pollutants in Disadvantaged Communities". If a facility is located in or potentially impacts a Disadvantaged Community" (DAC), it is understood that the CLCPA analysis should provide calculations for all co-pollutants. "Co-pollutants" are defined to be Hazardous Air Pollutants (HAP) emitted by GHG sources.

Per DAR-21, the CLCPA analysis may be requested for the following types of permit actions received by the Department after the issuance date of DAR-21:

1. New Title V and Air State Facility (ASF) permits;
2. Modifications to Title V and ASF permits;
3. Renewals of Title V and ASF permits; and
4. Air Facility Registrations where the NYSDEC determines an analysis is necessary or appropriate to ensure CLCPA consistency such as projects with significant GHG emissions.

A CLCPA analysis was included in the permit renewal application that was submitted on 8 February 2023. In letters dated 27 February 2023 and 28 March 2023, the NYSDEC provided comments regarding the CLCPA analysis that was included in the application.

This document is intended to replace the CLCPA analysis that was provided in the permit renewal application submitted on 8 February 2023.

3.2 Project Scope

Per DAR-21, "the applicable portions of the project include any new or modified emission sources that have the potential to emit GHG, including increases and decreases in emissions of GHG from existing equipment. In addition, the project scope includes any upstream, downstream, and indirect emissions known to be attributable to the project, including upstream out-of-state emissions from fossil fuel production, transmission, and imported electricity."

Based on the written guidance received from the NYSDEC, this CLCPA analysis has been performed for all sources of GHG emissions at the facility. The affected operations include the following:

- Boilers 1 -3 (Emission Sources 00BR1, 00BR2 and 00BR3), that will operate in the future as "gas fired boilers", firing No. 2 only in the event of a natural gas curtailment or supply interruption.
- Cake Furnace (a.k.a. "Walking Beam Furnace", Emission Source 01701), firing natural gas.

- Two small combustion units exempt from permitting requirements that are used to produce "DX gas", firing natural gas.
- Other facility emission sources firing natural gas, including but not limited to process furnaces, water heaters and building heaters.
- Emergency Engines, firing natural gas.
- Emergency Engines, firing diesel.
- Mobile sources.

3.3 CLCPA Emission Calculations

GHG emissions for stationary combustion sources were calculated on a worst-case Potential-to-Emit (PTE) basis. Pursuant to the definition of "Potential to Emit" in 6 NYCRR 200.1(bl), the PTE calculations for the facility's emission sources that fire/use a fossil fuel were based on the maximum heat input rating (or maximum design flow rate) for each unit and a maximum of 8760 hours of operation per year.

In accordance with DAR-21, ERM calculated the past actual emissions of GHG. The actual GHG emissions were calculated using fuel supply records as well as gas meter readings located within the facility. Per DAR-21, "the past actual emissions are defined as the highest 24-month average GHG emissions during the five years preceding the date the permit application was received unless another period is more representative". Based on the guidance, the 5-year period for consideration included calendar years 2018 - 2022.

Projected actual emissions of GHG were also calculated. In this case, the "future operating scenario" reflected operations after (1) start-up of the new 2728 Casting Furnace, (2) conversion of Boilers 1 - 3 to No. 2 oil and operation as "gas fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ, and (3) replacement of the 94 HP natural gas-fired emergency generator with the new 335 HP natural gas fired emergency generator. **The calculations for the projected actual emissions did not include any current or potential projects to mitigate or reduce GHG emissions**.

In general, the GHG emission calculations considered (1) direct emissions resulting from the combustion of natural gas, No. 6 fuel oil and No. 2 fuel oil, as well as (2) "upstream emissions" associated with the extraction, production, and transmission of natural gas and fuel oils imported into New York State. To calculate the direct emissions of each individual GHG that resulted from the combustion of a fossil fuel, ERM used the emission factors listed in 40 CFR Part 98 Subpart C, Tables C-1 & C-2. To calculate the upstream emissions, ERM used the emission factors provided in the Appendix of the "2022 NYS Statewide GHG Report". This table provides the current upstream emission factors for each individual GHG, as well as an emission factor for total carbon dioxide equivalents (CO2e) based upon 20-year global warming potential (GWP) values for each GHG.

Current as well as projected actual GHG emissions were also estimated for (1) mobile sources that are operated onsite by Revere, as well as (2) other vendor vehicles that routinely travel into and out of the facility. Maps of the primary truck routes used by vendor trucks and vehicles (as well as the calculated round-trip miles for each route) are included in Section 6.0 ("REFERENCE INFORMATION") of this document.

For each type of emission source, emission calculations were completed for carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_20). The total quantity of CO2e was calculated by multiplying the calculated emissions of each individual GHG by its respective 20-year GWP value listed in 6 NYCRR 496.5.

Because the Rome facility is located in a DAC, calculations were also completed for co-pollutants (Hazardous Air Pollutants) associated with stationary sources of GHG emissions. Calculations for all co-pollutants were calculated on a PTE basis, past actual basis and projected emissions basis.

Appendix A-1 provides summaries of all calculated GHGs and co-pollutants from stationary emission sources on a PTE basis. Specifically, Table A-1.1 provides a summary of the calculated PTE values for the facility's "current operating scenario", while Table A-1.2 provides a summary of the calculated PTE values for the facility's "future operating scenario". Detailed calculations for the PTE values shown in these tables are provided in Appendix B.

Appendix A-2 provides a summary of the past actual annual emissions of GHGs and co-pollutants from stationary emission sources. Specifically, Table A-2.1 provides a summary of the past actual emissions of GHGs for calendar years 2018 through 2022. Based upon the total GHG emissions reflected in Table A-2.1, the baseline period of 1/1/2020 – 12/31/2021 was identified to be the 24-month period with the highest amount of GHG emissions. Table A-2.2 provides a summary of the average actual annual emissions of GHG s and co-pollutants for the baseline period. Detailed calculations for past actual annual emissions of GHGs and co-pollutants are provided in Appendix C.

Appendix A-3 provides a summary of the projected actual annual emissions of GHGs and co-pollutants from the facility's stationary emission sources. Detailed calculations for the projected annual emissions are also included in Appendix C.

Appendix A-4 provides a summary of the past actual and projected emissions of GHGs that result from mobile sources. For all mobile sources that are owned and operated by Revere (i.e., "onsite vehicles"), Table A-4 provides a summary of the past actual emissions of GHGs for calendar years 2018 through 2022, as well as the future projected emissions. For vehicles that are operated by vendors and service providers that travel into and out of the facility ("offsite vehicles"), Table A-4 includes the future projected emissions only. Detailed calculations for the past actual and projected annual emissions are provided in Appendix D.

3.4 Summary of GHG Emissions from Stationary Sources at the Facility

3.4.1 Facility PTE for GHG Emissions from Stationary Sources

For each stationary source type at the facility, Appendix A-1 provides a summary of the calculated PTE values for upstream and direct GHG emissions. Table A-1.1 provides the PTE values for the "current operating scenario", while Table A-1.2 provides the PTE values for the "future operating scenario".

Table 3-1 below provides a high-level summary of the GHG emissions information in Tables A-1.1 and A-1.2. CO2e values shown in this table include both upstream and direct emissions.

Table 3-1: Summary of Facility PTE for GHG Emissions from Stationary Sources

	PTE for GHG Under "Current Operating Scenario"		PTE for GHG Under "Future Operating Scenario"	
Description of Stationary Sources	**(tons of CO2e)**	***% of Total***	**(tons of CO2e)**	***% of Total***
Boilers 1 – 3	129,070	*56%*	129,070	*56%*
Cake Furnace	47,350	*21%*	47,350	*21%*
Emission Sources Firing Natural Gas (to Supply DX Gas)	5,480	*2.4%*	5,480	*2.4%*

Description of Stationary Sources	PTE for GHG Under "Current Operating Scenario" (tons of CO2e)	% of Total	PTE for GHG Under "Future Operating Scenario" (tons of CO2e)	% of Total
Other Facility Sources, Firing Natural Gas	47,450	*21%*	47,450	*21%*
Emergency Engines < 600 HP, Firing Diesel	58	*0.025%*	58	*0.025%*
Emergency Engines >600 HP, Firing Diesel	929	*0.40%*	929	*0.40%*
Emergency Engines, Firing Natural Gas	42	*0.018%*	122	*0.053%*
TOTAL PTE FOR GHG FROM STATIONARY SOURCES	**230,370**	***100%***	**230,450**	***100%***

Based on the PTE values for the facility's stationary sources of GHG emissions, the "current operating scenario" could result in potential emissions (including direct and indirect emissions) of approximately 230,370 short tons of CO2e per year (~ 209,000 metric tonnes of CO2e per year), while the "future operating scenario" could result in potential emissions of approximately 230,450 short tons of CO2e per year (~ 209,070 metric tonnes of CO2e per year). Under both operating scenarios, Boilers 1 – 3 and the Cake Furnace account for 77% of the potential emissions of GHGs from the facility's stationary sources. The facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) account for an additional 21% of the potential emissions of GHGs on a CO2e basis.

While Revere has proposed to change the operation of the Boilers 1 – 3 to operate as "gas-fired boilers", it is important to note that the PTE for these three boilers is the same under the "current operating scenario" and the "future operating scenario". The increase of 80 short tons per year of CO2e is due solely to the replacement of the 94 HP natural gas-fired emergency generator with a new 335 HP natural gas fired emergency generator.

3.4.2 Past Actual Emissions and Future Projected Emissions of GHG from Stationary Sources

For each stationary source type at the facility, Appendix A-2 (Table A-2.2) provides a summary of the calculated past average actual emissions for the baseline period (2020 – 2021), while Appendix A-3 (Table A-3) provides a summary of the future projected emissions. Values are provided for both upstream and direct GHG emissions.

Table 3-2 below provides a high-level summary of the GHG emissions information in Tables A-2.2 and A-3. CO2e values shown in this table include both upstream and direct emissions.

Table 3-2: Summary of Facility Past Actual and Future Projected Emissions of GHG from Stationary Sources

Description of Stationary Sources	Past Actual Emissions of GHG for Baseline Period [1] (tons of CO2e)	*% of Total*	Future Projected Emissions of GHG (tons of CO2e)	*% of Total*
Boilers 1 – 3	23,920	*34%*	23,000	*28%*
Cake Furnace [2]	17,320 [2]	*25%* [2]	14,160	*18%*
Emission Sources Firing Natural Gas (to Supply DX Gas)	4,294	*6.2%*	4,291	*5.3%*
Other Facility Sources, Firing Natural Gas	24,110	*35%*	39,400	*49%*
Emergency Engines < 600 HP, Firing Diesel	3.1	*0.004%*	4.0	*0.005%*
Emergency Engines >600 HP, Firing Diesel	26	*0.04%*	23	*0.03%*
Emergency Engines, Firing Natural Gas	0.85	*0.001%*	2.7	*0.003%*
TOTAL EMISSIONS OF GHG FROM STATIONARY SOURCES	**69,680**	***100%***	**80,810**	***100%***

[1] Baseline period = 2020 - 2021.

[2] The data shown in this table suggests that the projected GHG emissions from the Cake Furnace will show a reduction against the baseline period, Based upon a review of the natural gas usage data for calendar years 2018 – 2022, the natural gas usage in 2020 (which is part of the baseline period for the facility) is higher than more recent years and does not correlate with the facility's production levels. Revere has projected that the natural gas usage for the Cake Furnace will show a 23.3% increase in natural gas usage <u>when compared to the usage in 2022</u>.

As shown in Table 3-2 above, the average actual annual emissions of direct and indirect emissions from the facility's stationary sources of GHG were 69,680 short tons of CO2e per year (~ 63,210 metric tonnes of CO2e per year) during the baseline period. During the baseline period, Boilers 1 – 3 and the Cake Furnace accounted for 59% of the actual emissions of GHGs from the facility's stationary sources. The facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) accounted for an additional 35% of the actual emissions of GHGs on a CO2e basis.

The projected actual emissions from the facility's stationary sources under the "future operating scenario" is expected to result in an estimated 80,810 short tons of CO2e per year (~ 73,310 metric tonnes of CO2e per year). With respect to the projected actual emissions, Boilers 1 – 3 and the Cake Furnace account for approximately 46% of the total emissions of GHGs on a CO2e basis, while the facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) account for 49% of the total emissions of GHGs on a CO2e basis. **It is important to emphasize that the calculated values for the projected actual emissions do not include any current or potential projects to mitigate or reduce GHG emissions.**

When compared against the baseline emissions, the proposed changes could result in an increase of approximately 11,130 tons per year of CO2e per year (~10,098 metric tonnes of CO2e per year).

3.5 Summary of GHG Emissions from Mobile Sources at Facility

For each mobile source type at the facility, Appendix A-4 (Table A-4) provides a summary of the calculated past actual emissions for onsite mobile vehicles for calendar years 2018 – 2022, as well as the future projected estimated emissions for both onsite and offsite vehicles. (Please note that past actual values are not available for offsite vehicles). Values are provided for both upstream and direct GHG emissions.

Table 3-3 below provides a high-level summary of the current actual emissions for 2022 as well as the projected actual emissions information shown in Table A-4. CO2e values shown in this table include both upstream and direct emissions.

Table 3-3: Summary of Future Projected Emissions of GHG from Mobile Sources

	2022 Actual Emissions of GHG		Estimated Future Projected Emissions of GHG	
Description of Mobile Sources	**(tons of CO2e)**	***% of Total***	**(tons of CO2e)**	***% of Total***
Onsite Mobile Sources Operated by Revere, Firing Propane	872	*88%*	1,070	*89%*
Onsite Mobile Sources Operated by Revere, Firing Diesel	75	*7.6%*	88	*7%*
Onsite Mobile Sources Operated by Revere, Firing Gasoline	27	*2.7%*	30	*2.5%*
Offsite Mobile Sources Operated by Vendors & Service Providers, Firing Diesel **	13	*1.3%*	16	*1.3%*
Offsite Mobile Sources, Operated by Vendors & Service Providers, Firing Gasoline ***	0.21	*0.02%*	0.23	*0.02%*
TOTAL EMISSIONS OF GHG FROM MOBILE SOURCES	**987**	***100%***	**1,210**	***100%***

*** Values shown for 2022 represent estimates for "current operations".*

As shown in Table 3-3 above, the projected actual emissions from mobile sources under the "future operating scenario" is expected to result in an estimated increase of 220 short tons of CO2e per year (~200 metric tonnes of CO2e per year).

4. IDENTIFICATION OF ALTERNATIVES AND MITIGATION

4.1 Current Projects That Will Reduce GHG Emissions

At the time of this assessment, the following active projects at the facility are expected to reduce emissions of GHG.

4.1.1 Boiler Control System and Change in Boiler Fuels

Boilers 1 – 3 provide process steam to the entire facility. In Fall 2021, Revere initiated a project to replace the programmable logic control (PLC) systems on all three boilers. The PLC systems for Boilers 1 and 2 have already been upgraded; the PLC for Boiler 3 will be upgraded in August 2023.

The new control system will provide tighter process control as well as advanced operational features. The project is expected to improve boiler efficiency, reliability and safety. The new controls (along with a new Balance of Plant system) will reduce natural gas consumption.

Concurrent with the boiler control system upgrade, Revere is eliminating the use of No. 6 oil. In the future, Revere will operate the three boilers as "gas fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ, where the facility will use No. 2 oil only during a natural gas curtailment or supply interruption.

It is important to note that the change from No. 6 oil to No. 2 oil will reduce energy use, as No. 6 oil required constant heating and pumping to maintain viscosity.

Based upon estimates provided by Revere personnel, the activities described above are expected to reduce natural gas consumption associated with boiler operations by 5%, resulting in a 5% decrease in the projected GHG emissions from the boilers. This activity could reduce the projected actual emissions for Boilers 1 – 3 by approximately 1,150 short tons of CO2e per year (~ 1,040 metric tonnes of CO2e per year), reducing the projected emissions of CO2e from the facility by 1.5%.

This project is expected to be completed in the third quarter of 2023. The budget for this project is $440,000, with a current expenditure of $300,000 to date.

4.1.2 Facility Re-lamping

The majority of lighting fixtures at the facility contain 500W or 1000W Metal Halide and Mercury Vapor lamps. In 2015, Revere began a project to replace older lighting fixtures with 150 to 250W LED lamps and fixtures. In the office areas, replacement and retrofitting of tube lighting is also underway. Where appropriate, motion sensors are also being installed to further reduce electrical demand.

This project is expected to reduce the electrical demand of the lighting fixtures by at least 60%. LED fixtures require less maintenance, reducing the labor demand as well as fuel consumption by maintenance equipment (i.e., scissor lift, man lifts). Upon completion, the project will result in an estimated reduction of 1,971.754 MW per year of electricity.

Table 4-1 below provides a summary of the current eGRID data (for year 2021) published by the United States Environmental Protection Agency (USEPA). Data is shown only for electrical generation in the local NPCC Upstate NY eGRID sub-region and the state of New York. These values consider direct emissions only.

Table 4-1: eGRID Emission Factors for Electricity Generation

EGrid Region	USEPA eGRID Emission Factors for Region (based on 2021 Data for Direct Emissions)			
	kg CO2/MWh (output)	kg CH4/MWh (output)	kg N2O/MWh (output)	kg CO2e/MWh (output)
NPCC Upstate NY	105.725	0.007	0.001	**106.153**
New York	206.543	0.012	0.001	**207.931**

[1] Total CO2e calculated using the 20-year global warming potential (GWP) values for each GHG.

Considering the eGRID data for the NPCC Upstate NY sub-region and the estimated reduction of 1,971.754 MW per year of electricity, the relamping project will result in an estimated reduction of 230.2 short tons of ***direct*** CO2e emissions (~ 208.9 metric tonnes of CO2e) that would otherwise be generated by the power generating facility. (Please note that this value does not include the reduction of upstream emissions). The emission reduction was calculated using the methodology shown below.

Reduction in CO2e Generated by Power Generation Facility = (1,971.754 MWh/yr) x (106.153 kg CO2e/MWh) x [2.2 lb/ kg] x [ton/ 2000 lb] = 230.2 short tons of CO2e

At the present time, approximately 52% of the facility has been converted to LED fixtures. Because the replacement of the fixtures will be done on an "as needed" basis, the replacement of the remaining 48% of fixtures is expected to take another three years.

4.2 Committed Projects That Will Reduce GHG Emissions

Emission sources or activities that are not subject to permitting requirements are not subject to Part 212 per §212-1.4(a) ["…process emission sources that are exempt or trivial under sections 201-3.2 and 201-3.3…"]. Air dispersion modeling is not required for the emission sources identified in the following table.

4.2.1 Hot Mill Cake Furnace

The Cake Furnace (Emission Source 01701) is the largest consumer of natural gas by the facility's production equipment. Excluding natural gas used by Boilers 1 – 3, the cake furnace accounted for 23% of the facility's usage of natural gas in 2022. To reduce natural gas usage, the following project has been approved and will be completed.

4.2.1.1 Replacement of Burner Control System on Cake Furnace

Revere will replace the burner control systems (which are 1960's vintage technology) with a new control system that can monitor and automatically adjust the furnace operating conditions. Currently, the pressure control of the heating chambers is not automatic and relies on manual adjustment. A new control system would provide instantaneous control and adjustment of the furnace and temperature, thus reducing natural gas consumption.

Based upon estimates provided by Revere personnel, the replacement of the burner control system could reduce natural gas consumption of the Cake Furnace by 10%. This activity could reduce the projected actual emissions from the Cake Furnace by approximately 1,420 short tons of CO2e per year (~ 1,280 metric tonnes of CO2e per year), reducing the projected emissions of CO2e from the facility by 1.9%.

Based upon a preliminary cost estimate from Fives North American, an upgrade to the burner control system could cost $1,000,000 to $1,500,000.

4.3 Projects Currently Under Evaluation

At the time of this assessment, the following projects are being **evaluated** to determine the cost and potential opportunity for GHG reductions. Once this information is available, Revere will evaluate the project costs and benefits based on the availability of capital funds.

4.3.1 Hot Mill Cake Furnace

4.3.1.1 Installation of Recuperator on Cake Furnace

As described above, Revere will replace the burner control system on the Cake Furnace. In late June 2023, Bloom Engineering began to evaluate the feasibility of retrofitting the Cake Furnace with a recuperator (i.e., a countercurrent heat exchanger used to recover heat). If feasible and cost effective, a recuperator could be used to recover waste heat from the exhaust gas, whereupon it could be used to preheat the air within the furnace, thus reducing the amount of natural gas needed to bring the furnace to operating temperature. Studies have shown that recuperators can reduce fuel usage by 30 to 60%. Based upon these values, the installation of a recuperator on the Cake Furnace could reduce the projected emissions from the Cake Furnace by 4,300 to 8,500 short tons (~ 3,900 – 7,700 metric tonnes of CO2e per year), reducing the projected emissions of CO2e from the facility by 5.6 – 11.2%.

The installation of a recuperator can only be done after the burner control system is upgraded. As of the date of this evaluation, Bloom has not yet collected and analyzed burner data. Consequently, a proposed project scope and budgetary cost estimate are not yet available.

4.3.2 Steam Efficiency Study

Applied Combustion has been requested to conduct a study of Revere's steam generation and delivery systems. The scope of the study will include an analysis of piping, insulation, overall system efficiency, and recommendations for system improvements and re-design. Through this study, Revere hopes to identify opportunities to deenergize or control parts of the system when not needed, therefore reducing the steam demand upon (and therefore natural gas usage by) Boilers 1 – 3.

4.3.3 Facility Energy Assessment

By the end of 2023, Revere will select an appropriate contractor(s) to conduct an energy conservation study of the plant to help identify opportunities to further reduce electricity and natural gas consumption. The results of the assessment will be evaluated for capital project expenditures.

4.3.4 IGS Generator Controls Upgrades

In the third quarter of 2023, Revere plans to initiate a project to evaluate the two small boilers and controls that are used to produce DX gas used in facility operations. The current boilers that are used to produce DX gas are late model and less efficient than current technology. New controls or equipment would reduce fuel consumption.

Revere plans to consider the upgrade/replacement of these gas fired boilers, as well as the potential use of an alternate gas.

If a new inert gas could be used in the process without sacrificing product quality, then the two small boilers could be eliminated. The removal of both gas boilers would reduce the facility emissions by 4,291 short tons (~ 3,893 metric tonnes of CO2e per year), reducing the projected emissions of CO2e from the facility by 5.7%.

If the boiler controls were upgraded, it is expected that the natural gas usage could be reduced by 20%, the emissions from these units could be reduced by 860 short tons (~ 780 metric tonnes of CO2e per year), reducing the projected emissions of CO2e from the facility by 1.1%.

4.3.5 Solar Array Project

Revere has approximately 5 acres of available space that is considered a brownfield. Based upon discussions with the electrical power broker and Forefront Power, this amount of space could potentially be used to generate about 1 megawatt of power via a solar array. The facility could have immediate availability of interconnection to the grid.

A complete assessment of electrical gains, as well as environmental impact will need to be thoroughly researched before embarking on this opportunity.

4.3.6 Improvement/Automation of Natural Gas Metering

In order to obtain better information regarding the facility use of natural gas, Revere plans to complete an assessment of the natural gas meters located throughout the facility. Through this project, Revere will develop a plan to (1) replace old meters and identify locations for additional meters, and (2) tie natural gas use information into a data historian. Revere will aim to have meters replaced and an evaluation of the natural gas usage across the plant completed within one year.

With better process data, the facility will be able to evaluate the natural gas usage of specific pieces of process equipment.

4.3.7 Electric Mobile Equipment

Revere has a complete fleet of propane and petroleum fueled mobile equipment. Revere plans to contact Raymond Corporation to discuss the potential conversion of all (or a portion of) the fleet with an electric powered fleet.

Revere's capital spending budget for mobile equipment now includes replacement with electric vehicles. Given capital constraints, vehicle replacement will occur in a phased approach as equipment is retired.

5. CLCPA CONSISTENCY & EMISSIONS OF CO-POLLUTANTS

5.1 Facility Emissions of GHG Emissions from Stationary Sources

In 6 NYCRR §496.4, the Department set the 2030 and 2050 statewide GHG emission limits at 245.87 and 61.47 million metric tons of CO_2e, respectively.

Based on the calculations for the facility's stationary sources, the "future operating scenario" could result in an increase of 80 tons per year of CO2e per year (~ 73 metric tonnes per year) on a PTE basis, and an actual increase of 11,130 tons of CO2e per year (~10,100 metric tonnes of CO2e per year) above the baseline period. Revere has identified various projects at the facility that are currently underway (or have been recently approved) that will reduce GHG emissions. Revere has also identified other projects that are currently being evaluated to determine the cost and potential opportunity for GHG reductions.

5.2 Facility Emissions of Co-Pollutants from Stationary Sources

In addition to GHGs, this analysis has also considered the co-pollutants (HAPs) that are generated by each source of GHG. Emissions of all co-pollutants were calculated on a PTE basis, past actual basis and projected annual emissions basis.

For each stationary source type at the facility, Appendix A-1 includes a summary of the calculated PTE values for individual co-pollutants. Table A-1.1 includes the PTE values for the current operating scenario, while Table A-1.2 includes the PTE values for the future operating scenario.

Table 5-1 below provides a high-level summary of the PTE values for total co-pollutants (HAPs) shown in Tables A-1.1 and A-1.2.

Table 5-1: Summary of Facility PTE for Emissions of Co-Pollutants (HAPs) from Stationary Sources

Description of Stationary Sources	PTE for Co-Pollutants Under Current Operating Scenario		PTE for Co-Pollutants Under Future Operating Scenario	
	(tons of HAPs)	*% of Total*	(tons of HAPs)	*% of Total*
Boilers 1 – 3	1.1	*56%*	1.1	*56%*
Cake Furnace	0.42	*20%*	0.42	*20%*
Emission Sources Firing Natural Gas (to Supply DX Gas)	0.049	*2.4%*	0.049	*2.4%*
Other Facility Sources, Firing Natural Gas	0.42	*20%*	0.42	*20%*
Emergency Engines < 600 HP, Firing Diesel	0.001	*0.050%*	0.001	*0.050%*
Emergency Engines >600 HP, Firing Diesel	0.007	*0.33%*	0.007	*0.33%*
Emergency Engines, Firing Natural Gas	0.017	*0.81%*	0.048	*2.3%*

Description of Stationary Sources	PTE for Co-Pollutants Under Current Operating Scenario		PTE for Co-Pollutants Under Future Operating Scenario	
	(tons of HAPs)	*% of Total*	(tons of HAPs)	*% of Total*
TOTAL PTE FOR HAPs FROM STATIONARY SOURCES	**2.058**	***100%***	**2.089**	***100%***

Based on the PTE values for the facility's stationary sources of GHG emissions, the "current operating scenario" could result in potential emissions of approximately 2.058 short tons of HAPs per year, while the "future operating scenario" could result in potential emissions of approximately 2.089 short tons of HAPs per year. Under both operating scenarios, Boilers 1 – 3 and the Cake Furnace account for 76% of the potential emissions of HAPs from the facility's stationary sources. The facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) account for an additional 20% of the potential emissions of HAPs on a CO2e basis.

It is important to note that the increase of 0.030 short tons per year of HAPs is due solely to the replacement of the 94 HP natural gas-fired emergency generator with a new 335 HP natural gas fired emergency generator.

For each stationary source type at the facility, Appendix A-2 (Table A-2.2) includes a summary of the calculated past average actual emissions of individual co-pollutants for the baseline period (2020 – 2021), while Appendix A-3 (Table A-3) includes a summary of the future projected emissions for individual co-pollutants.

Table 3-2 below provides a high-level summary of the co-pollutant emissions information in Tables A-2.2 and A-3.

Table 5-2: Summary of Facility Past Actual and Future Projected Emissions of Co-Pollutants (HAPs) from Stationary Sources

Description of Stationary Sources	Past Actual Emissions of Co-Pollutants for Baseline Period [1]		Future Projected Emissions of Co-Pollutants	
	(tons of HAPs)	*% of Total*	(tons of HAPs)	*% of Total*
Boilers 1 – 3	0.21	*34%*	0.20	*28%*
Cake Furnace [2]	0.15 [2]	*25%* [2]	0.13	*17%*
Emission Sources Firing Natural Gas (to Supply DX Gas)	0.038	*6.2%*	0.038	*5.3%*
Other Facility Sources, Firing Natural Gas	0.21	*35%*	0.30	*49%*
Emergency Engines < 600 HP, Firing Diesel	0.0001	*0.009%*	0.0001	*0.010%*
Emergency Engines >600 HP, Firing Diesel	0.0002	*0.031%*	0.0002	*0.023%*
Emergency Engines, Firing Natural Gas	0.0003	*0.054%*	0.0011	*0.15%*

Description of Stationary Sources	Past Actual Emissions of Co-Pollutants for Baseline Period [1]		Future Projected Emissions of Co-Pollutants	
	(tons of HAPs)	*% of Total*	(tons of HAPs)	*% of Total*
TOTAL EMISSIONS OF HAPs FROM STATIONARY SOURCES	**0.62**	***100%***	**0.72**	***100%***

[1] Baseline period = 2020 – 2021.

[2] The data shown in this table suggests that the projected HAP emissions from the Cake Furnace will show a reduction against the baseline period, Based upon a review of the natural gas usage data for calendar years 2018 – 2022, the natural gas usage in 2020 (which is part of the baseline period for the facility) is higher than more recent years and does not correlate with the facility's production levels. Revere has projected that the natural gas usage for the Cake Furnace will show a 23.3% increase in natural gas usage <u>when compared to the usage in 2022</u>.

As shown in Table 5-2 above, the average actual annual emissions of co-pollutants from the facility's stationary sources of GHG was 0.62 short tons of HAPs per year during the baseline period. During the baseline period, Boilers 1 – 3 and the Cake Furnace accounted for 59% of the actual emissions of HAPs from the facility's stationary sources. The facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) accounted for an additional 35% of the actual emissions of HAPs.

The projected actual emissions from the facility's stationary sources under the "future operating scenario" is expected to result in an estimated 0.72 short tons of HAPs per year. With respect to the projected actual emissions, Boilers 1 – 3 and the Cake Furnace account for approximately 46% of the total emissions of HAPs, while the facility's "other combustion sources" (excluding emergency engines and small combustion units used to generate DX gas) account for 49% of the total emissions of HAPs. **It is important to emphasize that the calculated values for the projected actual** emissions do not include any current or potential projects to mitigate or reduce HAP emissions.

Considering the limited amount of HAPs that are projected to be generated (0.72 tons per year) by the GHG emission sources, it does not appear that the Rome facility would cause or contribute to a disproportionate HAP impact on any DAC. **It should be noted that the projects identified by Revere to reduce emissions of GHG will also serve to reduce emissions of HAPs.**

6. REFERENCE INFORMATION

The following reference information is contained in this section:

Reference 1: Combustion Processes – Summary of USEPA AP-42 Emission Factors for Products of Combustion for Combustion Types/Fuels

Reference 2: Summary of USEPA AP-42 Emission Factors for Products of Combustion from Natural Gas-Fired Engines

Reference 3-A: Map of Primary Local Truck Route Within ¼-Mile of Facility Used for Delivery/Pick-up and Return

Reference 3-B: Map of Truck Route Used for Metal Shipment

Reference 3-C: Map of Truck Route Used for Receipt of Scrap Copper

Reference 3-D: Map of Truck Route Used for Delivery of Parts & Materials

Reference 3-E: Map of Truck Route Used for Pick-up of Waste (Waste Management)

Reference 3-F: Map of Truck Route Used for Pick-up of Waste (Dumpsters)

REFERENCE 1

COMBUSTION PROCESSES - SUMMARY OF USEPA AP-42 EMISSION FACTORS FOR PRODUCTS OF COMBUSTION

CAS No.	Air Contaminant	HAP?	HTAC?	*Conservative** AP-42 Emission Factor for Combustion of Natural Gas [1]		*Conservative** AP-42 Emission Factor for Combustion of Propane [2]	*Conservative** AP-42 Emission Factor for Distillate No. 2 Fuel Oil Combustion [3]		*Conservative** AP-42 Emission Factor for Distillate No. 6 Fuel Oil Combustion [4]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines < 600 HP [5]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines > 600 HP [6]		*Conservative** AP-42 Emission Factor for Natural Gas-fired Engines (Type of Engine unknown) [7]	
				(lb/ 10^6 scf)	(lb/MMBtu)	(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)
HAP Pollutants - Polycyclic Organic Matter																
50-32-8	Benzo(a)pyrene	HAP @	HTAC (POM)	< 1.2E-06	1.2E-09	< 1.2E-09					< 1.88E-07	1.20E-09	< 2.57E-07	1.64E-09	5.68E-09	3.61E-11
53-70-3	Dibenzo(a,h)anthracene	HAP @	HTAC (POM)	< 1.2E-06	1.2E-09	< 1.2E-09	1.67E-06	1.21E-08	1.67E-06	1.11E-08	< 5.83E-07	3.71E-09	< 3.46E-07	2.20E-09	---	
56-49-5	3-Methylchloranthrene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09									---	
56-55-3	Benz(a)anthracene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09	4.01E-06	2.91E-08	4.01E-06	2.67E-08	1.68E-06	1.07E-08	6.22E-07	3.96E-09	3.36E-07	2.14E-09
57-97-6	7,12-Dimethylbenz(a)anthracene	HAP @	HTAC (POM)	< 1.6E-05	1.6E-08	< 1.6E-08									---	
83-32-9	Acenaphthene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09	2.11E-05	1.53E-07	2.11E-05	1.41E-07	< 1.42E-06	9.03E-09	4.68E-06	2.98E-08	1.33E-06	8.46E-09
85-01-8	Phenanathrene	HAP @	HTAC (POM)	1.7E-05	1.7E-08	1.7E-08	1.05E-05	7.61E-08	1.05E-05	7.00E-08	2.94E-05	1.87E-07	4.08E-05	2.60E-07	1.04E-05	6.62E-08
86-73-7	Fluorene	HAP @	HTAC (POM)	2.8E-06	2.7E-09	2.7E-09	4.47E-06	3.24E-08	4.47E-06	2.98E-08	2.92E-05	1.86E-07	1.28E-05	8.14E-08	5.67E-06	3.61E-08
91-20-3	Naphthalene	HAP @	HTAC (POM)	6.1E-04	6.0E-07	6.0E-07	1.13E-03	8.19E-06	1.13E-03	7.53E-06	8.48E-05	5.40E-07	1.30E-04	8.27E-07	9.71E-05	6.18E-07
91-57-6	2-Methylnaphthalene	HAP @	HTAC (POM)	2.4E-05	2.4E-08	2.4E-08									3.32E-05	2.11E-07
120-12-7	Anthracene	HAP @	HTAC (POM)	< 2.4E-06	2.4E-09	< 2.4E-09	1.22E-06	8.84E-09	1.22E-06	8.13E-09	1.87E-06	1.19E-08	1.23E-06	7.83E-09	7.18E-07	4.57E-09
129-00-0	Pyrene	HAP @	HTAC (POM)	5.0E-06	4.9E-09	4.9E-09	4.25E-06	3.08E-08	4.25E-06	2.83E-08	4.78E-06	3.04E-08	3.71E-06	2.36E-08	1.36E-06	8.65E-09
191-24-2	Benzo(g,h,i)perylene	HAP @	HTAC (POM)	< 1.2E-06	1.2E-09	< 1.2E-09	2.26E-06	1.64E-08	2.26E-06	1.51E-08	< 4.89E-07	3.11E-09	< 5.56E-07	3.54E-09	4.14E-07	2.63E-09
192-97-2	Benzo(e)pyrene	HAP @	HTAC (POM)												4.15E-07	2.64E-09
193-39-5	Indeno(1,2,3-cd)pyrene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09	2.14E-06	1.55E-08	2.14E-06	1.43E-08	< 3.75E-07	2.39E-09	< 4.14E-07	2.63E-09	9.93E-09	6.32E-11
198-55-0	Perylene	HAP @	HTAC (POM)												4.97E-09	3.16E-11
205-99-2	Benzo(b)fluoranthene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09					< 9.91E-08	6.31E-10	1.11E-06	7.06E-09	1.66E-07	1.06E-09
206-44-0	Fluoranthene	HAP @	HTAC (POM)	< 3.0E-06	2.9E-09	< 2.9E-09	4.84E-06	3.51E-08	4.84E-06	3.23E-08	7.61E-06	4.84E-08	4.03E-06	2.56E-08	1.11E-06	7.06E-09
207-08-9	Benzo(k)fluoranthene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09					< 1.55E-07	9.86E-10	< 2.18E-07	1.39E-09	4.26E-09	2.71E-11
208-96-8	Acenaphthylene	HAP @	HTAC (POM)	---	---		2.53E-07	1.83E-09	2.53E-07	1.69E-09	< 5.06E-06	3.22E-08	9.23E-06	5.87E-08	5.53E-06	3.52E-08
218-01-9	Chrysene	HAP @	HTAC (POM)	< 1.8E-06	1.8E-09	< 1.8E-09	2.38E-06	1.72E-08	2.38E-06	1.59E-08	3.53E-07	2.25E-09	1.53E-06	9.73E-09	6.93E-07	4.41E-09
2050-67-1	Dichlorobiphenyl	HAP @	HTAC (POM)												---	
2051-24-3	Decachlorobiphenyl	HAP @	HTAC (POM)												---	
3268-87-9	Octachlorodibenzo-p-dioxin (OCDD)	HAP @	HTAC (POM)				3.10E-09	2.25E-11	3.10E-09	2.07E-11					---	
---	Benzo(b,k)fluoranthene	HAP @	HTAC (POM)				1.48E-06	1.07E-08	1.48E-06	9.87E-09					---	
---	Hexachlorobiphenyl	HAP @	HTAC (POM)												---	
---	Heptachlorobiphenyl	HAP @	HTAC (POM)												---	
---	Heptachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	Heptachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Hexachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	Hexachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Monochlorobiphenyl	HAP @	HTAC (POM)												---	
---	Octachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	Octachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Pentachlorobiphenyl	HAP @	HTAC (POM)												---	
---	Pentachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	Pentachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Tetrachlorobiphenyl	HAP @	HTAC (POM)												---	
---	2,3,7,8-Tetrachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	Tetrachlorodibenzo-p-dioxins	HAP @	HTAC (POM)												---	
---	2,3,7,8-Tetrachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Tetrachlorodibenzo-p-furans	HAP @	HTAC (POM)												---	
---	Trichlorobiphenyl	HAP @	HTAC (POM)												---	
---	Polycyclic Aromatic Hydrocarbons	HAP @	HTAC (POM)												1.41E-04	8.97E-07
---	**TOTAL POLYCYCLIC ORGANIC MATTER**	**HAP@**	**HTAC (POM)**	< **7.0E-04**	**6.8E-07**	< **6.8E-07**	**1.19E-03**	**8.63E-06**	**1.19E-03**	**7.94E-06**	**1.68E-04**	**1.07E-06**	**2.12E-04**	**1.35E-06**	**2.99E-04**	**1.91E-06**
Other Speciated HAP Pollutants																
50-00-0	Formaldehyde	HAP	HTAC	7.5E-02	7.4E-05	7.4E-05	3.30E-02	2.39E-04	3.30E-02	2.20E-04	1.18E-03	7.51E-06	7.89E-05	5.02E-07	5.52E-02	3.51E-04
51-28-5	Dinitrophenol	HAP	---												---	
56-23-5	Carbon Tetrachloride	HAP	HTAC												6.07E-05	3.86E-07
67-56-1	Methanol	HAP	---												3.06E-03	1.95E-05
67-66-3	Chloroform	HAP	---												4.71E-05	3.00E-07
71-43-2	Benzene	HAP	HTAC	2.1E-03	2.1E-06	2.1E-06	2.14E-04	1.55E-06	2.14E-04	1.43E-06	9.33E-04	5.94E-06	7.76E-04	4.94E-06	1.94E-03	1.23E-05
74-83-9	Bromomethane	HAP	---												---	
74-87-3	Chloromethane	HAP	---												---	
75-00-3	Chloroethane	HAP	---												1.87E-06	1.19E-08
75-01-4	Vinyl Chloride	HAP	HTAC												2.47E-05	1.57E-07
75-07-0	Acetaldehyde	HAP	HTAC								7.67E-04	4.88E-06	2.52E-05	1.60E-07	8.36E-03	5.32E-05
75-09-2	Methylene Chloride	HAP	---												1.47E-04	9.35E-07
75-34-3	1,1-Dichloroethane	HAP	---												3.91E-05	2.49E-07
75-56-9	Propylene oxide	HAP	---												---	
78-87-5	1,2-Dichloropropane	HAP	HTAC												4.46E-05	2.84E-07
79-00-5	1,1,2-Trichloroethane	HAP	HTAC												5.27E-05	3.35E-07
79-01-6	Trichloroethene	HAP	HTAC												---	
79-34-5	1,1,2,2-Tetrachloroethane	HAP	HTAC												6.63E-05	4.22E-07
87-86-5	Pentachlorophenol	HAP	---												---	
88-06-2	2,4,6-Trichlorophenol	HAP	---												---	
91-20-3	Naphthalene	HAP @	**HTAC (POM)**	6.1E-04	6.0E-07	6.0E-07	1.13E-03	8.19E-06	1.13E-03	7.53E-06	8.48E-05	5.40E-07	1.30E-04	8.27E-07	9.71E-05	6.18E-07
92-52-4	Biphenyl	HAP	---												2.12E-04	1.35E-06
95-47-6	o-Xylene	HAP	---												---	
98-86-2	Acetophenone	HAP	---												---	
100-02-7	4-Nitrophenol	HAP	---												---	
100-41-4	Ethylbenzene	HAP	---						6.36E-05	4.61E-07	6.36E-05	4.24E-07					1.08E-04	6.87E-07

REFERENCE 1
COMBUSTION PROCESSES - SUMMARY OF USEPA AP-42 EMISSION FACTORS FOR PRODUCTS OF COMBUSTION

				*Conservative** AP-42 Emission Factor for Combustion of Natural Gas [1]		*Conservative** AP-42 Emission Factor for Combustion of Propane [2]		*Conservative** AP-42 Emission Factor for Distillate No. 2 Fuel Oil Combustion [3]		*Conservative** AP-42 Emission Factor for Distillate No. 6 Fuel Oil Combustion [4]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines < 600 HP [5]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines > 600 HP [6]		*Conservative** AP-42 Emission Factor for Natural Gas-fired Engines (Type of Engine unknown) [7]	
CAS No.	Air Contaminant	HAP?	HTAC?	(lb/ 10^6 scf)	(lb/MMBtu)		(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)
100-42-5	Styrene	HAP	---													5.48E-05	3.49E-07
106-93-4	Ethylene Dibromide	HAP	HTAC													7.34E-05	4.67E-07
106-99-0	1,3-Butadiene	HAP	HTAC									< 3.91E-05	2.49E-07			8.20E-04	5.22E-06
107-02-8	Acrolein	HAP	HTAC									< 9.25E-05	5.89E-07	7.88E-06	5.01E-08	7.78E-03	4.95E-05
107-06-2	1,2-Dichloroethane	HAP	HTAC									---		---		4.22E-05	2.68E-07
108-88-3	Toluene	HAP	---	3.4E-03	3.3E-06		3.3E-06	6.20E-03	4.49E-05	6.20E-03	4.13E-05	4.09E-04	2.60E-06	2.81E-04	1.79E-06	9.63E-04	6.13E-06
108-90-7	Chlorobenzene	HAP	---													4.44E-05	2.82E-07
108-95-2	Phenol	HAP	---													4.21E-05	2.68E-07
110-54-3	Hexane	HAP	---	1.8E+00	1.8E-03		1.8E-03									1.11E-03	7.06E-06
117-81-7	bis(2-ethylhexyl)phthalate	HAP	---													---	
123-38-6	Propanal	HAP	---													---	
127-18-4	Tetrachloroethene	HAP	HTAC													---	
540-84-1	2,2,4-Trimethylpentane	HAP	---													8.46E-04	5.38E-06
542-75-6	1,3-Dichloropropene	HAP	HTAC													4.38E-05	2.79E-07
1330-20-7	Xylenes	HAP	---					1.09E-04	7.90E-07	1.09E-04	7.27E-07	2.85E-04	1.81E-06	1.93E-04	1.23E-06	2.68E-04	1.71E-06
7440-36-0	Antimony	HAP	---							5.25E-03	3.50E-05						
7440-38-2	Arsenic	HAP	HTAC (As cmpds)	2.0E-04	2.0E-07		2.0E-07		4E-06	1.32E-03	8.80E-06					---	
7440-41-7	Beryllium	HAP	HTAC (Be cmpds)	< 1.2E-05	1.2E-08	<	1.2E-08		3E-06	2.78E-05	1.85E-07					---	
7440-43-9	Cadmium	HAP	HTAC (Cd cmpds)	1.1E-03	1.1E-06		1.1E-06		3E-06	3.98E-04	2.65E-06					---	
7440-47-3	Chromium	HAP	HTAC (Cr cmpds)	1.4E-03	1.4E-06		1.4E-06		3E-06	8.45E-04	5.63E-06					---	
---	Chromium VI	HAP (part of Cr)	HTAC (Cr VI cmpds)							2.48E-04	1.65E-06						
7440-48-4	Cobalt	HAP	---	8.4E-05	8.2E-08		8.2E-08			6.02E-03	4.01E-05					---	
7439-92-1	***Lead***	***CRITERIA / HAP***	HTAC (Pb cmpds)	5.E-04	5E-07		4.9E-07		9E-06	1.51E-03	1.01E-05						
7439-96-5	Manganese	HAP	HTAC (Mn cmpds)	3.8E-04	3.7E-07		3.7E-07		6E-06	3.00E-03	2.00E-05					---	
7439-97-6	Mercury	HAP	HTAC (Hg cmpds)	2.6E-04	2.5E-07		2.5E-07		3E-06	1.13E-04	7.53E-07					---	
7440-02-0	Nickel	HAP	HTAC (Ni cmpds)	2.1E-03	2.1E-06		2.1E-06		3E-06	8.45E-02	5.63E-04					---	
7647-01-0	Hydrogen chloride	HAP	---													---	
7782-49-2	Selenium	HAP	---	2.4E-05	2.4E-08		2.4E-08		1.5E-05	6.83E-04	4.55E-06					---	
7782-50-5	Chlorine	HAP	---													---	
	TOTAL HAPs =			**< 1.9E+00**	**1.9E-03**	**<**	**1.9E-03**	**---**	**3.44E-04**	**1.45E-01**	**9.65E-04**	**< 3.87E-03**	**2.46E-05**	**1.57E-03**	**1.00E-05**	**8.18E-02**	**5.20E-04**
	NOTE: "Naphthalene" is included in "POM". To avoid double counting, the value for its contribution to POM has been subtracted out.																
	MAXIMUM VALUE OF INDIVIDUAL HAPs =			**1.8E+00**	**1.8E-03**		**1.8E-03**		**2.39E-04**		**5.63E-04**	**1.18E-03**	**7.51E-06**	**7.76E-04**	**4.94E-06**	**5.52E-02**	**3.51E-04**
	COMPOUND WITH MAXIMUM VALUE =			**(Hexane)**			**(Hexane)**	**(Formaldehyde)**		**(Formaldehyde)**		**(Formaldehyde)**		**(Benzene)**		**(Formaldehyde)**	
Non-HAP Pollutants																	
65-85-0	Benzoic Acid	non-HAP	---													---	
66-25-1	Hexanal	non-HAP	---													---	
67-64-1	Acetone	non-HAP	---													---	
71-55-6	1,1,1-Trichloroethane	non-HAP	---					2.36E-04	1.71E-06	2.36E-04	1.57E-06					---	
74-82-8	Methane	non-HAP	---													---	
74-84-0	Ethane	non-HAP	---	3.1E+00	3.0E-03		3.0E-03									1.05E-01	6.68E-04
74-98-6	Propane	non-HAP	---	1.6E+00	1.6E-03		1.6E-03									4.19E-02	2.67E-04
75-28-5	Isobutane	non-HAP	---													3.75E-03	2.39E-05
75-69-4	Trichlorofluoromethane	non-HAP	---													---	
78-84-2	Isobutyraldehyde	non-HAP	---													---	
78-93-3	Methyl ethyl ketone	non-HAP	---													---	
86-74-8	Carbazole	non-HAP	---													---	
88-75-5	2-Nitrophenol	non-HAP	---													---	
91-58-7	2-Chloronaphthalene	non-HAP	---													---	
95-57-8	2-Chlorophenol	non-HAP	---													---	
95-63-6	1,2,4-Trimethylbenzene	non-HAP	---													1.11E-04	7.06E-07
100-52-7	Benzaldehyde	non-HAP	---													---	
104-87-0	p-Tolualdehyde	non-HAP	---													---	
106-97-8	Butane	non-HAP	---	2.1E+00	2.1E-03		2.1E-03									4.75E-03	3.02E-05
108-67-8	1,3,5-Trimethylbenzene	non-HAP	---													3.38E-05	2.15E-07
108-87-2	Methylcyclohexane	non-HAP	---													1.23E-03	7.83E-06
109-66-0	n-Pentane	non-HAP	---	2.6E+00	2.5E-03		2.5E-03									2.60E-03	1.65E-05
110-82-7	Cyclohexane	non-HAP	---													3.08E-04	1.96E-06
111-84-2	n-Nonane	non-HAP	---													1.10E-04	7.00E-07
111-65-9	n-Octane	non-HAP	---													3.51E-04	2.23E-06
115-07-1	Propylene	non-HAP	---									2.58E-03	1.64E-05	2.79E-03	1.78E-05	---	
287-92-3	Cyclopentane	non-HAP	---													2.27E-04	1.44E-06

REFERENCE 1
COMBUSTION PROCESSES - SUMMARY OF USEPA AP-42 EMISSION FACTORS FOR PRODUCTS OF COMBUSTION

CAS No.	Air Contaminant	HAP?	HTAC?	*Conservative** AP-42 Emission Factor for Combustion of Natural Gas [1]		*Conservative** AP-42 Emission Factor for Combustion of Propane [2]		*Conservative** AP-42 Emission Factor for Distillate No. 2 Fuel Oil Combustion [3]		*Conservative** AP-42 Emission Factor for Distillate No. 6 Fuel Oil Combustion [4]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines < 600 HP [5]		*Conservative** AP-42 Emission Factor for Uncontrolled Diesel Engines > 600 HP [6]		*Conservative** AP-42 Emission Factor for Natural Gas-fired Engines (Type of Engine unknown) [7]	
				(lb/ 10^6 scf)	(lb/MMBtu)		(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ 10^3 Gal)	(lb/MMBtu)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)	(lb/ MMBtu fuel input)	(lb/hp-hr)
526-73-8	1,2,3-Trimethylbenzene	non-HAP	---													3.54E-05	2.25E-07
529-20-4	o-Tolualdehyde	non-HAP	---													---	
540-49-0	1,2-Dibromoethene	non-HAP	---													---	
4170-30-3	Crotonaldehyde	non-HAP	---													---	
7440-39-3	Barium	non-HAP	---	4.4E-03	4.3E-06		4.3E-06			2.57E-03	1.71E-05					---	
7440-50-8	Copper	non-HAP	---	8.5E-04	8.3E-07		8.3E-07		6E-06	1.76E-03	1.17E-05					---	
7439-98-7	Molybdenum	non-HAP	---	1.1E-03	1.1E-06		1.1E-06			7.87E-04	5.25E-06					---	
7440-62-2	Vanadium	non-HAP	HTAC	2.3E-03	2.3E-06		2.3E-06			3.18E-02	2.12E-04					---	
7440-66-6	Zinc	non-HAP	---	2.9E-02	2.8E-05		2.8E-05		4E-06	2.91E-02	1.94E-04					---	
25321-22-6	Dichlorobenzene	non-HAP	---	1.2E-03	1.2E-06		1.2E-06									---	
---	Butyr/Isobutyraldehyde	non-HAP	---													4.37E-04	2.78E-06
---	Fluoride	non-HAP	---							3.73E-02	2.49E-04						
7723-14-0	Phosphorous	non-HAP	---							9.46E-03	6.31E-05						

* Where AP-42 has indicated that the emission factor is less than a specified value, have assumed that the contaminant is emitted at the specified value.

@ Compound qualifies as Polycyclic Organic Matter (POM).
NOTE: Naphthalene is a listed HAP as well as part of "TOTAL POM", and thus appears twice in the table above.

[1] Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.
Where AP-42 provides a value in units of lb/10^6 scf, the value was converted to lb/MMBtu as follows:
(EF, lb/MMBtu) = (EF, lb/10^6 scf) x (scf /1020 Btu) x [10^6 Btu/MMBtu]
NOTE: The footnotes to AP-42 Tables 1.4-3 & 1.4.4 indicate that a value of 1020 Btu/scf should be used to convert the emission factor (in lb/10^6 scf) to lb/MMBtu.

[2] Emission factors for propane are assumed to be the same as natural gas.
NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.

[3] Emission factors for No. 2 fuel oil are taken from AP-42, Section 1.3 ("Fuel Oil Combustion"), Tables 1.3-9 & 1.3-10. [NOTE: The footnote to Table 1.3-9 (which contains all organic compounds) states that the data is from residual oil fired boilers].
Where AP-42 provides a value in units of lb/10^3 gal, the value was converted to lb/MMBtu as follows:
(EF, lb/MMBtu) = (EF, lb/10^3 Gal) / (138 MMBtu/ 10^3 gal)
where, 138 MMBtu/10^3 gal = HHV of No. 2 Fuel Oil (REF: 40 CFR Part 98, Subpart C Table C-1)

[4] Emission factors for No. 6 fuel oil are taken from AP-42, Section 1.3 ("Fuel Oil Combustion"), Tables 1.3-9 & 1.3-11.
Where AP-42 provides a value in units of lb/10^3 gal, the value was converted to lb/MMBtu as follows:
(EF, lb/MMBtu) = (EF, lb/10^3 Gal) / (150 MMBtu/ 10^3 gal)
where, 150 MMBtu/10^3 gal = HHV of No. 6 Fuel Oil (REF: 40 CFR Part 98, Subpart C Table C-1)

[5] Emission factors for uncontrolled diesel engines less than 600 HP are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.
Where AP-42 provides a value in units of lb/MMBtu of fuel input, an estimated value for lb/hp-hr output was conservatievly estimated by assuming a 40% efficiency for the engine. Specifically,
(EF, lb/hp-hr) = (EF, lb/MMBtu fuel input) x [0.002545 MMBtu/ hp] / 0.4

[6] Emission factors for uncontrolled diesel engines greater than 600 HP are taken from AP-42, Section 3.4 ("Large Stationary Diesel and All Stationary Dual-fuel Engines"), Tables 3.4-3 and 3.4-4.
Where AP-42 provides a value in units of lb/MMBtu of fuel input, an estimated value for lb/hp-hr output was conservatievly estimated by assuming a 40% efficiency for the engine. Specifically,
(EF, lb/hp-hr) = (EF, lb/MMBtu fuel input) x [0.002545 MMBtu/ hp] / 0.4

[7] Emission factors for natural gas fired engines taken from AP-42, Section 3.2 ("Natural Gas-fired Reciprocating Engines"), Tables 3.2-1, 3.2-2 & 3.2-3. Values conservatively reflect the highest emission factor for all natural gas-fired engines (2-stroke, 4-stroke, rich/lean burn). Emission factors for the individual types of natural gas fired engines is provided in a separate table.
Where AP-42 provides a value in units of lb/MMBtu of fuel input, an estimated value for lb/hp-hr output was conservatively estimated by assuming a 40% efficiency for the engine. Specifically,
(EF, lb/hp-hr) = (EF, lb/MMBtu fuel input) x [0.002545 MMBtu/ hp] / 0.4

COMBUSTION PROCESSES - SUMMARY OF USEPA AP-42 EMISSION FACTORS FOR PRODUCTS OF COMBUSTION FROM NATURAL GAS-FIRED ENGINES

AP-42 Emission Factor for Natural Gas-fired Engines

CAS No.	HAP Pollutants	HAP?	HTAC?	Emission Factors: 2-Stroke Rich Burn Engines (lb/MMBtu fuel input)[1]	4-Stroke Lean Burn Engines (lb/MMBtu fuel input)[1]	4-Stroke Rich Burn Engines (lb/MMBtu fuel input)[1]	Worst-Case Emission Factor (lb/MMBtu input)[2]
HAP Pollutants - Polycyclic Organic Matter							
50-32-8	Benzo(a)pyrene	HAP @	HTAC (POM)	5.68E-09	---	---	5.68E-09
56-55-3	Benzo(a)anthracene	HAP @	HTAC (POM)	3.36E-07	---	---	3.36E-07
83-32-9	Acenaphthene	HAP @	HTAC (POM)	1.33E-06	1.25E-06	---	1.33E-06
85-01-8	Phenanthrene	HAP @	HTAC (POM)	3.53E-06	1.04E-05	---	1.04E-05
86-73-7	Fluorene	HAP @	HTAC (POM)	1.69E-06	5.67E-06	---	5.67E-06
91-20-3	**Naphthalene**	**HAP**	HTAC (POM)	9.63E-05	7.44E-05	< 9.71E-05	9.71E-05
91-57-6	2-Methylnaphthalene	HAP @	HTAC (POM)	2.14E-05	3.32E-05	---	3.32E-05
120-12-7	Anthracene	HAP @	HTAC (POM)	7.18E-07	---	---	7.18E-07
129-00-0	Pyrene	HAP @	HTAC (POM)	5.84E-07	1.36E-06	---	1.36E-06
191-24-2	Benzo(g,h,i)perylene	HAP @	HTAC (POM)	2.48E-08	4.14E-07	---	4.14E-07
192-97-2	Benzo(e)pyrene	HAP @	HTAC (POM)	2.34E-08	4.15E-07	---	4.15E-07
193-39-5	Indeno(1,2,3-cd)pyrene	HAP @	HTAC (POM)	9.93E-09	---	---	9.93E-09
198-55-0	Perylene	HAP @	HTAC (POM)	4.97E-09	---	---	4.97E-09
205-99-2	Benzo(b)fluoranthene	HAP @	HTAC (POM)	8.51E-09	1.66E-07	---	1.66E-07
206-44-0	Fluoranthene	HAP @	HTAC (POM)	3.61E-07	1.11E-06	---	1.11E-06
207-08-9	Benzo(k)fluoranthene	HAP @	HTAC (POM)	4.26E-09	---	---	4.26E-09
208-96-8	Acenaphthylene	HAP @	HTAC (POM)	3.17E-06	5.53E-06	---	5.53E-06
218-01-9	Chrysene	HAP @	HTAC (POM)	6.72E-07	6.93E-07	---	6.93E-07
	Polycyclic Aromatic Hydrocarbons	HAP @	HTAC (POM)	1.34E-04	2.69E-05	1.41E-04	1.41E-04
---	**TOTAL POLYCYCLIC ORGANIC MATTER**	**HAP @**	**HTAC (POM)**	**2.64E-04**	**1.62E-04**	**2.38E-04**	**2.99E-04**
Other Speciated HAP Pollutants							
50-00-0	Formaldehyde	HAP	HTAC	5.52E-02	5.28E-02	2.05E-02	5.52E-02
56-23-5	Carbon Tetrachloride	HAP	HTAC	6.07E-05	< 3.67E-05	< 1.77E-05	6.07E-05
67-56-1	Methanol	HAP	---	2.48E-03	2.50E-03	3.06E-03	3.06E-03
67-66-3	Chloroform	HAP	---	4.71E-05	< 2.85E-05	< 1.37E-05	4.71E-05
71-43-2	Benzene	HAP	HTAC	1.94E-03	4.40E-04	1.58E-03	1.94E-03
75-00-3	Chloroethane	HAP	---	---	1.87E-06	---	1.87E-06
75-01-4	Vinyl Chloride	HAP	HTAC	2.47E-05	1.49E-05	< 7.18E-06	2.47E-05
75-07-0	Acetaldehyde	HAP	HTAC	7.76E-03	8.36E-03	2.79E-03	8.36E-03
75-09-2	Methylene Chloride	HAP	---	1.47E-04	2.00E-05	4.12E-05	1.47E-04
75-34-3	1,1-Dichloroethane	HAP	---	3.91E-05	< 2.36E-05	< 1.13E-05	3.91E-05
78-87-5	1,2-Dichloropropane	HAP	HTAC	4.46E-05	< 2.69E-05	< 1.30E-05	4.46E-05
79-00-5	1,1,2-Trichloroethane	HAP	HTAC	5.27E-05	< 3.18E-05	< 1.53E-05	5.27E-05
79-34-5	1,1,2,2-Tetrachloroethane	HAP	HTAC	6.63E-05	< 4.00E-05	2.53E-05	6.63E-05
91-20-3	**Naphthalene**	HAP	**HTAC (POM)**	9.63E-05	7.44E-05	< 9.71E-05	9.71E-05
92-52-4	Biphenyl	HAP	---	3.95E-06	2.12E-04	---	2.12E-04
100-41-4	Ethylbenzene	HAP	---	1.08E-04	3.97E-05	< 2.48E-05	1.08E-04
100-42-5	Styrene	HAP	---	5.48E-05	< 2.36E-05	< 1.19E-05	5.48E-05
106-93-4	Ethylene Dibromide	HAP	HTAC	7.34E-05	< 4.43E-05	< 2.13E-05	7.34E-05
106-99-0	1,3-Butadiene	HAP	HTAC	8.20E-04	2.67E-04	6.63E-04	8.20E-04
107-02-8	Acrolein	HAP	HTAC	7.78E-03	5.14E-03	2.63E-03	7.78E-03
107-06-2	1,2-Dichloroethane	HAP	HTAC	4.22E-05	< 2.36E-05	< 1.13E-05	4.22E-05
108-88-3	Toluene	HAP	---	9.63E-04	4.08E-04	5.58E-04	9.63E-04
108-90-7	Chlorobenzene	HAP	---	4.44E-05	< 3.04E-05	< 1.29E-05	4.44E-05
108-95-2	Phenol	HAP	---	4.21E-05	2.40E-05	---	4.21E-05
110-54-3	Hexane	HAP	---	4.45E-04	1.11E-03	---	1.11E-03
540-84-1	2,2,4-Trimethylpentane	HAP	---	8.46E-04	2.50E-04	---	8.46E-04
542-75-6	1,3-Dichloropropene	HAP	HTAC	4.38E-05	< 2.64E-05	< 1.27E-05	4.38E-05
1330-20-7	Xylenes	HAP	---	2.68E-04	1.84E-04	1.95E-04	2.68E-04
	TOTAL HAPs =			**7.97E-02**	< **7.23E-02**	< **3.25E-02**	**8.18E-02**
	NOTE: "Naphthalene" is included in "POM". To avoid double counting, the value for its contribution to POM has been subtracted out.						
	MAXIMUM VALUE OF INDIVIDUAL HAPs =			**5.52E-02**	**5.28E-02**	**2.05E-02**	**5.52E-02**
	COMPOUND WITH MAXIMUM VALUE =			**(Formaldehyde)**	**(Formaldehyde)**	**(Formaldehyde)**	**(Formaldehyde)**
Non-HAP Pollutants							
74-84-0	Ethane	non-HAP		7.09E-02	1.05E-01	7.04E-02	1.05E-01
74-98-6	Propane	non-HAP		2.87E-02	4.19E-02	---	4.19E-02
75-28-5	Isobutane	non-HAP		3.75E-03	---	---	3.75E-03
95-63-6	1,2,4-Trimethylbenzene	non-HAP		1.11E-04	1.43E-05	---	1.11E-04
106-97-8	Butane	non-HAP		4.75E-03	5.41E-04		4.75E-03
108-67-8	1,3,5-Trimethylbenzene	non-HAP		1.80E-05	3.38E-05	---	3.38E-05
108-87-2	Methylcyclohexane	non-HAP		3.38E-04	1.23E-03	---	1.23E-03
109-66-0	n-Pentane	non-HAP		1.53E-03	2.60E-03	---	2.60E-03
110-82-7	Cyclohexane	non-HAP		3.08E-04	---	---	3.08E-04
111-84-2	n-Nonane	non-HAP		3.08E-05	1.10E-04	---	1.10E-04
111-65-9	n-Octane	non-HAP		7.44E-05	3.51E-04	---	3.51E-04
287-92-3	Cyclopentane	non-HAP		9.47E-05	2.27E-04	---	2.27E-04
526-73-8	1,2,3-Trimethylbenzene	non-HAP		3.54E-05	2.30E-05	---	3.54E-05
	Butyr/Isobutyraldehyde			4.37E-04	1.01E-04	4.86E-05	4.37E-04

[1] Values from AP-42, "3.2 Natural Gas-fired Reciprocating Engines", Tables 3.2-1, 3.2-2 & 3.2-3.

[2] Highest emission factor chosen as a worst-case representation for all natural gas-fired engines (2-stroke, 4-stroke, rich/lean burn).

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REFERENCE 3-A: MAP OF PRIMARY LOCAL TRUCK ROUTE WITHIN ¼-MILE OF FACILITY USED FOR DELIVERY /PICK-UP AND RETURN

(¼ mile from Revere Copper Products Inc.. to Intersection of Gansevoort Ave and Seneca Street)

REFERENCE 3-B: MAP OF TRUCK ROUTE USED FOR METAL SHIPMENT

REFERENCE 3-C: MAP OF TRUCK ROUTE USED FOR RECEIPT OF SCRAP COPPER

REFERENCE 3-D: MAP OF TRUCK ROUTE USED FOR DELIVERY OF PARTS & MATERIALS

REFERENCE 3-E: MAP OF TRUCK ROUTE USED FOR PICK-UP OF WASTE (WASTE MANAGEMENT)

REFERENCE 3-F: MAP OF TRUCK ROUTE USED FOR PICK-UP OF WASTE (DUMPSTERS)

APPENDIX A SUMMARIES OF CALCULATED VALUES FOR UPSTREAM AND DIRECT EMISSIONS FROM GHG EMISSION SOURCE CATEGORIES

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT
APPENDIX A-1: SUMMARY OF POTENTIAL GHG EMISSIONS ASSOCIATED WITH FACILITY OPERATIONS

TABLE A-1.1. SUMMARY OF POTENTIAL TO EMIT FOR STATIONARY SOURCES - CURRENT OPERATING SCENARIO

			POTENTIAL TO EMIT FOR GREENHOUSE GASES (TONS/YR)				POTENTIAL TO EMIT FOR CO-POLLUTANTS (TONS/YR) (= HAZARDOUS AIR POLLUTANTS)																																								
GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMISSIONS	CO2	CH4	N2O	TOTAL CO2e [1]	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs
1	Boilers, Firing Natural Gas or No. 6 Oil (Annual Use of Fuel Oil Limited by PC # 9)	Upstream	1.66E+04	4.77E+02	1.9E-01	5.67E+04																																									
		Direct	7.22E+04	1.7E+00	3.3E-01	7.23E+04	2.0E-03	5.5E-02				1.3E-03									1.9E-03		1.1E-04						1.0E-02			1.1E+00			1.8E-04	8.8E-03	2.2E-03	4.7E-05	6.7E-04	1.4E-03	1.0E-02	2.5E-03	5.0E-03	1.9E-04	1.4E-01	1.1E-03	1.1E+00
2	Cake Furnace, Firing Natural Gas	Upstream	6.10E+03	1.75E+02	7.0E-02	2.08E+04																																									
		Direct	2.65E+04	5.0E-01	5.0E-02	2.65E+04	1.5E-04	1.7E-02				4.7E-04									1.4E-04								7.6E-04			4.0E-01					4.4E-05	2.7E-06	2.4E-04	3.1E-04	1.9E-05	1.1E-04	8.5E-05	5.8E-05	4.7E-04	5.3E-06	4.2E-01
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream	7.05E+02	2.02E+01	8.1E-03	2.41E+03																																									
		Direct	3.06E+03	5.8E-02	5.8E-03	3.07E+03	1.8E-05	1.9E-03				5.4E-05									1.6E-05								8.7E-05			4.6E-02					5.1E-06	3.1E-07	2.8E-05	3.6E-05	2.2E-06	1.3E-05	9.8E-06	6.7E-06	5.4E-05	6.2E-07	4.9E-02
4	Other Facility Combustion Sources Firing Natural Gas	Upstream	6.11E+03	1.75E+02	7.0E-02	2.09E+04																																									
		Direct	2.65E+04	5.0E-01	5.0E-02	2.66E+04	1.6E-04	1.7E-02				4.7E-04									1.4E-04								7.6E-04			4.0E-01					4.5E-05	2.7E-06	2.5E-04	3.1E-04	1.9E-05	1.1E-04	8.5E-05	5.8E-05	4.7E-04	5.3E-06	4.2E-01
5	Emergency Engines < 600 HP, Firing Diesel	Upstream	8.59E+00	7.00E-02	1.5E-04	1.45E+01																																									
		Direct	4.35E+01	1.8E-03	3.5E-04	4.37E+01	4.5E-05	3.2E-04				2.5E-04			2.0E-04						2.3E-05					1.0E-05	2.5E-05		1.1E-04						7.6E-05												1.0E-03
6	Emergency Engines >600 HP, Firing Diesel	Upstream	1.37E+02	1.12E+00	2.3E-03	2.31E+02																																									
		Direct	6.93E+02	2.8E-02	5.6E-03	6.97E+02	9.0E-04	3.4E-04				3.3E-03			1.1E-04						5.5E-04						3.4E-05		1.2E-03						8.2E-04												6.7E-03
7	Emergency Engines, Firing Natural Gas	Upstream	5.47E+00	1.57E-01	6.3E-05	1.87E+01																																									
		Direct	2.38E+01	4.5E-04	4.5E-05	2.38E+01	6.1E-05	1.1E-02	1.2E-05	6.2E-04	9.6E-06	3.9E-04	3.8E-07	5.0E-06	1.7E-03	3.0E-05	8.0E-06	9.1E-06	1.1E-05	1.3E-05	2.0E-05	4.3E-05	2.2E-05	1.1E-05	1.5E-05	1.7E-04	1.6E-03	8.6E-06	2.0E-04	9.0E-06	8.6E-06	2.3E-04	1.7E-04	8.9E-06	5.5E-05												1.7E-02
	TOTAL PTE FOR ALL STATIONARY SOURCES OF GHG		1.6E+05	8.5E+02	7.9E-01	2.3E+05	3.3E-03	1.0E-01	1.2E-05	6.2E-04	9.6E-06	6.2E-03	3.8E-07	5.0E-06	2.0E-03	3.0E-05	8.0E-06	9.1E-06	1.1E-05	1.3E-05	2.8E-03	4.3E-05	1.3E-04	1.1E-05	1.5E-05	1.8E-04	1.6E-03	8.6E-06	1.4E-02	9.0E-06	8.6E-06	1.9E+00	1.7E-04	8.9E-06	1.1E-03	8.8E-03	2.3E-03	5.2E-05	1.2E-03	2.1E-03	1.0E-02	2.8E-03	5.2E-03	3.1E-04	1.4E-01	1.2E-03	2.1E+00

TABLE A-1.2. SUMMARY OF POTENTIAL TO EMIT FOR STATIONARY SOURCES - FUTURE OPERATING SCENARIO

			POTENTIAL TO EMIT FOR GREENHOUSE GASES (TONS/YR)				POTENTIAL TO EMIT FOR CO-POLLUTANTS (TONS/YR) (= HAZARDOUS AIR POLLUTANTS)																																								
GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMISSIONS	CO2	CH4	N2O	TOTAL CO2e [1]	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs
1	Boilers, Firing Natural Gas (No. 2 Oil as Back-up) Operated as "Gas-Fired Boilers" Under 40 CFR 63 Subpart JJJJJJ)	Upstream	1.66E+04	4.77E+02	1.9E-01	5.67E+04																																									
		Direct	7.22E+04	1.36E+00	1.4E-01	7.23E+04	4.2E-04	4.5E-02				1.3E-03									3.7E-04								2.1E-03			1.1E+00					1.2E-04	7.3E-06	6.7E-04	8.5E-04	5.1E-05	3.0E-04	2.3E-04	1.6E-04	1.3E-03	1.5E-05	1.1E+00
2	Cake Furnace, Firing Natural Gas	Upstream	6.10E+03	1.75E+02	7.0E-02	2.08E+04																																									
		Direct	2.65E+04	5.0E-01	5.0E-02	2.65E+04	1.5E-04	1.7E-02				4.7E-04									1.4E-04								7.6E-04			4.0E-01					4.4E-05	2.7E-06	2.4E-04	3.1E-04	1.9E-05	1.1E-04	8.5E-05	5.8E-05	4.7E-04	5.3E-06	4.2E-01
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream	7.05E+02	2.02E+01	8.1E-03	2.41E+03																																									
		Direct	3.06E+03	5.8E-02	5.8E-03	3.07E+03	1.8E-05	1.9E-03				5.4E-05									1.6E-05								8.7E-05			4.6E-02					5.1E-06	3.1E-07	2.8E-05	3.6E-05	2.2E-06	1.3E-05	9.8E-06	6.7E-06	5.4E-05	6.2E-07	4.9E-02
4	Other Facility Combustion Sources, Firing Natural Gas	Upstream	6.11E+03	1.75E+02	7.0E-02	2.09E+04																																									
		Direct	2.65E+04	5.0E-01	5.0E-02	2.66E+04	1.6E-04	1.7E-02				4.7E-04									1.4E-04								7.6E-04			4.0E-01					4.5E-05	2.7E-06	2.5E-04	3.1E-04	1.9E-05	1.1E-04	8.5E-05	5.8E-05	4.7E-04	5.3E-06	4.2E-01
5	Emergency Engines < 600 HP, Firing Diesel	Upstream	8.59E+00	7.00E-02	1.5E-04	1.45E+01																																									
		Direct	4.35E+01	1.8E-03	3.5E-04	4.37E+01	4.5E-05	3.2E-04				2.5E-04			2.0E-04						2.3E-05					1.0E-05	2.5E-05		1.1E-04						7.6E-05												1.0E-03
6	Emergency Engines >600 HP, Firing Diesel	Upstream	1.37E+02	1.12E+00	2.3E-03	2.31E+02																																									
		Direct	6.93E+02	2.8E-02	5.6E-03	6.97E+02	9.0E-04	3.4E-04				3.3E-03			1.1E-04						5.5E-04						3.4E-05		1.2E-03						8.2E-04												6.7E-03
7	Emergency Engines, Firing Natural Gas	Upstream	1.58E+01	4.52E-01	1.81E-04	5.38E+01																																									
		Direct	6.85E+01	1.29E-03	1.29E-04	6.86E+01	1.8E-04	3.2E-02	3.6E-05	1.8E-03	2.8E-05	1.1E-03	1.1E-06	1.4E-05	4.9E-03	8.6E-05	2.3E-05	2.6E-05	3.1E-05	3.9E-05	4.8E-02	1.2E-04	6.3E-05	3.2E-05	4.3E-05	4.8E-04	4.6E-03	2.5E-05	5.7E-04	2.6E-05	2.5E-05	6.5E-04	5.0E-04	2.6E-05	1.6E-04												4.8E-02
	TOTAL PTE FOR ALL STATIONARY SOURCES OF GHG		1.6E+05	8.5E+02	5.9E-01	2.3E+05	1.9E-03	1.1E-01	3.6E-05	1.8E-03	2.8E-05	7.0E-03	1.1E-06	1.4E-05	5.2E-03	8.6E-05	2.3E-05	2.6E-05	3.1E-05	3.9E-05	4.9E-02	1.2E-04	6.3E-05	3.2E-05	4.3E-05	4.9E-04	4.6E-03	2.5E-05	5.5E-03	2.6E-05	2.5E-05	1.9E+00	5.0E-04	2.6E-05	1.1E-03	0.0E+00	2.2E-04	1.3E-05	1.2E-03	1.5E-03	9.0E-05	5.4E-04	4.1E-04	2.8E-04	2.3E-03	2.6E-05	2.1E+00

Differences between Current Operating Scenario and Future Operating Scenario are shown in blue.

[1] *In accordance with DAR-21, the CO2e value has been calculated using the 20-year global warming potential (GWP) values listed in 6 NYCRR 496.5.* ***(NOTE: These values differ from the 100-yr GWP values that are used for permitting and New Source Review evaluations).***

[2] *Per ECL § 75-0101, "co-pollutants" are defined as Hazardous Air Pollutants produced by greenhouse gas emissions sources.*

[3] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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TABLE A-2.1. ACTUAL EMISSIONS OF GHG FOR FIVE-YEAR PERIOD

GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMISSIONS	ACTUAL EMISSIONS IN 2018 (TONS/YR)				ACTUAL EMISSIONS IN 2019 (TONS/YR)				ACTUAL EMISSIONS IN 2020 (TONS/YR)				ACTUAL EMISSIONS IN 2021 (TONS/YR)				ACTUAL EMISSIONS IN 2022 (TONS/YR)			
			CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]
1-A	Boilers, Firing Natural Gas	Upstream Emissions	2.70E+03	7.74E+01	3.1E-02	9.20E+03	3.11E+03	8.92E+01	3.6E-02	1.06E+04	3.34E+03	9.56E+01	3.8E-02	1.14E+04	2.71E+03	7.76E+01	3.1E-02	9.23E+03	1.31E+03	3.75E+01	1.5E-02	4.46E+03
		Direct Emissions	1.17E+04	2.2E-01	2.2E-02	1.17E+04	1.35E+04	2.5E-01	2.5E-02	1.35E+04	1.45E+04	2.7E-01	2.7E-02	1.45E+04	1.18E+04	2.2E-01	2.2E-02	1.18E+04	5.67E+03	1.1E-01	1.1E-02	5.69E+03
1-B	Boilers, Firing No. 6 Oil	Upstream Emissions	0.00E+00	0.00E+00	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.00E+00	1.15E+01	1.12E-01	2.0E-04	2.10E+01	9.77E+01	9.52E-01	1.7E-03	1.78E+02	0.00E+00	0.00E+00	0.0E+00	0.00E+00
		Direct Emissions	0.00E+00	0.0E+00	0.0E+00	0.00E+00	0.00E+00	0.0E+00	0.0E+00	0.00E+00	7.74E+01	3.1E-03	6.2E-04	7.78E+01	6.55E+02	2.6E-02	5.2E-03	6.59E+02	0.00E+00	0.0E+00	0.0E+00	0.00E+00
2	Cake Furnace, Firing Natural Gas	Upstream Emissions	1.29E+03	3.70E+01	1.5E-02	4.40E+03	2.06E+03	5.90E+01	2.4E-02	7.02E+03	3.16E+03	9.07E+01	3.6E-02	1.08E+04	1.30E+03	3.72E+01	1.5E-02	4.43E+03	1.48E+03	4.24E+01	1.7E-02	5.05E+03
		Direct Emissions	5.60E+03	1.1E-01	1.1E-02	5.62E+03	8.94E+03	1.7E-01	1.7E-02	8.96E+03	1.37E+04	2.6E-01	2.6E-02	1.38E+04	5.64E+03	1.1E-01	1.1E-02	5.65E+03	6.42E+03	1.2E-01	1.2E-02	6.44E+03
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream Emissions	5.52E+02	1.58E+01	6.3E-03	1.88E+03	5.53E+02	1.58E+01	6.3E-03	1.89E+03	5.53E+02	1.59E+01	6.3E-03	1.89E+03	5.53E+02	1.59E+01	6.3E-03	1.89E+03	5.53E+02	1.59E+01	6.3E-03	1.89E+03
		Direct Emissions	2.40E+03	4.5E-02	4.5E-03	2.40E+03	2.40E+03	4.5E-02	4.5E-03	2.40E+03	2.40E+03	4.5E-02	4.5E-03	2.41E+03	2.40E+03	4.5E-02	4.5E-03	2.41E+03	2.40E+03	4.5E-02	4.5E-03	2.41E+03
4	Other Facility Combustion Sources, Firing Natural Gas	Upstream Emissions	2.09E+03	5.98E+01	2.4E-02	7.12E+03	2.05E+03	5.87E+01	2.3E-02	6.98E+03	1.83E+03	5.26E+01	2.1E-02	6.25E+03	4.38E+03	1.26E+02	5.0E-02	1.49E+04	4.27E+03	1.23E+02	4.9E-02	1.46E+04
		Direct Emissions	9.05E+03	1.7E-01	1.7E-02	9.07E+03	8.89E+03	1.7E-01	1.7E-02	8.91E+03	7.96E+03	1.5E-01	1.5E-02	7.97E+03	1.90E+04	3.6E-01	3.6E-02	1.91E+04	1.86E+04	3.5E-01	3.5E-02	1.86E+04
5	Emergency Engines <600 HP, Firing Diesel	Upstream Emissions	6.63E-01	5.41E-03	1.1E-05	1.12E+00	9.45E-01	7.70E-03	1.6E-05	1.60E+00	4.52E-01	3.68E-03	7.7E-06	7.63E-01	4.52E-01	3.68E-03	7.7E-06	7.63E-01	4.17E-01	3.40E-03	7.1E-06	7.05E-01
		Direct Emissions	3.36E+00	1.4E-04	2.7E-05	3.37E+00	4.78E+00	1.9E-04	3.9E-05	4.81E+00	2.29E+00	9.3E-05	1.9E-05	2.30E+00	2.29E+00	9.3E-05	1.9E-05	2.30E+00	2.11E+00	8.6E-05	1.7E-05	2.12E+00
6	Emergency Engines >600 HP, Firing Diesel	Upstream Emissions	4.44E+00	3.62E-02	7.6E-05	7.50E+00	4.71E+00	3.84E-02	8.1E-05	7.96E+00	4.14E+00	3.37E-02	7.1E-05	6.99E+00	3.67E+00	2.99E-02	6.3E-05	6.20E+00	8.22E-02	6.70E-04	1.4E-06	1.39E-01
		Direct Emissions	2.25E+01	9.1E-04	1.8E-04	2.26E+01	2.39E+01	9.7E-04	1.9E-04	2.40E+01	2.09E+01	8.5E-04	1.7E-04	2.11E+01	1.86E+01	7.5E-04	1.5E-04	1.87E+01	4.16E-01	1.7E-05	3.4E-06	4.18E-01
7	Emergency Engines, Firing Natural Gas	Upstream Emissions	9.02E-02	2.6E-03	1.0E-06	3.08E-01	1.63E-01	4.69E-03	1.87E-06	5.58E-01	7.71E-02	2.21E-03	8.85E-07	2.63E-01	1.43E-01	4.09E-03	1.64E-06	4.86E-01	6.02E-02	1.72E-03	6.90E-07	2.05E-01
		Direct Emissions	3.92E-01	7.4E-06	7.4E-07	3.92E-01	7.10E-01	1.3E-05	1.3E-06	7.11E-01	3.35E-01	6.3E-06	6.3E-07	3.36E-01	6.19E-01	1.2E-05	1.2E-06	6.20E-01	2.61E-01	4.9E-06	4.9E-07	2.62E-01
TOTAL EMISSIONS			**3.5E+04**	**1.9E+02**	**1.3E-01**	**5.1E+04**	**4.2E+04**	**2.2E+02**	**1.5E-01**	**6.0E+04**	**4.8E+04**	**2.6E+02**	**1.8E-01**	**6.9E+04**	**4.9E+04**	**2.6E+02**	**1.8E-01**	**7.0E+04**	**4.1E+04**	**2.2E+02**	**1.5E-01**	**5.9E+04**
						51,470				60,345				69,112				70,248				59,090

TABLE A-2.2. EMISSIONS FOR BASELINE PERIOD (= HIGHEST OF 2-YEAR CONSECUTIVE PERIOD)

Baseline Period: 2020 - 2021

GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMIS	AVERAGE ACTUAL EMISSIONS OF GREENHOUSE GASES FOR BASELINE PERIOD (TONS/YR)			
			CO2	CH4	N2O	TOTAL CO2e [1]
1-A	Boilers, Firing Natural Gas	Upstream Emissions	3.02E+03	8.66E+01	3.5E-02	1.03E+04
		Direct Emissions	1.31E+04	2.5E-01	2.5E-02	1.31E+04
1-B	Boilers, Firing No. 6 Oil	Upstream Emissions	5.46E+01	5.32E-01	9.3E-04	9.95E+01
		Direct Emissions	3.66E+02	1.5E-02	2.9E-03	3.68E+02
2	Cake Furnace, Firing Natural Gas	Upstream Emissions	2.23E+03	6.40E+01	2.6E-02	7.61E+03
		Direct Emissions	9.69E+03	1.8E-01	1.8E-02	9.71E+03
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream Emissions	5.53E+02	1.59E+01	6.3E-03	1.89E+03
		Direct Emissions	2.40E+03	4.5E-02	4.5E-03	2.41E+03
4	Other Facility Emission Sources, Firing Natural Gas	Upstream Emissions	3.11E+03	8.91E+01	3.6E-02	1.06E+04
		Direct Emissions	1.35E+04	2.5E-01	2.5E-02	1.35E+04
5	Emergency Engines <600 HP, Firing Diesel	Upstream Emissions	4.52E-01	3.68E-03	7.7E-06	7.63E-01
		Direct Emissions	2.29E+00	9.3E-05	1.9E-05	2.30E+00
6	Emergency Engines >600 HP, Firing Diesel	Upstream Emissions	3.91E+00	3.18E-02	6.7E-05	6.60E+00
		Direct Emissions	1.98E+01	8.0E-04	1.6E-04	1.99E+01
7	Emergency Engines, Firing Natural Gas	Upstream Emissions	1.10E-01	3.15E-03	1.3E-06	3.75E-01
		Direct Emissions	4.77E-01	9.0E-06	9.0E-07	4.78E-01
TOTAL ACTUAL EMISSIONS FOR BASELINE PERIOD			**4.81E+04**	**2.57E+02**	**1.79E-01**	**6.97E+04**

AVERAGE ACTUAL EMISSIONS OF CO-POLLUTANTS FOR BASELINE PERIOD (TONS/YR) [2] (= HAZARDOUS AIR POLLUTANTS)

GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMIS	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene
1-A	Boilers, Firing Natural Gas	Upstream Emissions																				
		Direct Emissions	7.7E-05	8.3E-03				2.3E-04									6.7E-05					
1-B	Boilers, Firing No. 6 Oil	Upstream Emissions																				
		Direct Emissions	1.8E-05	4.9E-04				3.2E-06									1.7E-05		9.4E-07			
2	Cake Furnace, Firing Natural Gas	Upstream Emissions																				
		Direct Emissions	5.7E-05	6.1E-03				1.7E-04									5.0E-05					
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream Emissions																				
		Direct Emissions	1.4E-05	1.5E-03				4.2E-05									1.2E-05					
4	Other Facility Emission Sources, Firing Natural Gas	Upstream Emissions																				
		Direct Emissions	7.9E-05	8.5E-03				2.4E-04									6.9E-05					
5	Emergency Engines <600 HP, Firing Diesel	Upstream Emissions																				
		Direct Emissions	2.4E-06	1.7E-05				1.3E-05			1.1E-05						1.2E-06					5.5E-07
6	Emergency Engines >600 HP, Firing Diesel	Upstream Emissions																				
		Direct Emissions	2.6E-05	9.6E-06				9.4E-05			3.1E-06						1.6E-05					
7	Emergency Engines, Firing Natural Gas	Upstream Emissions																				
		Direct Emissions	1.2E-06	2.3E-04	2.5E-07	1.3E-05	1.9E-07	7.9E-06	7.6E-09	1.0E-07	3.4E-05	6.0E-07	1.6E-07	1.8E-07	2.2E-07	2.7E-07	4.0E-07	8.7E-07	4.4E-07	2.2E-07	3.0E-07	3.4E-06
TOTAL ACTUAL EMISSIONS FOR BASELINE PERIOD			**2.7E-04**	**2.5E-02**	**2.5E-07**	**1.3E-05**	**1.9E-07**	**8.0E-04**	**7.6E-09**	**1.0E-07**	**4.8E-05**	**6.0E-07**	**1.6E-07**	**1.8E-07**	**2.2E-07**	**2.7E-07**	**2.3E-04**	**8.7E-07**	**1.4E-06**	**2.2E-07**	**3.0E-07**	**3.9E-06**

GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMIS	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [3]
1-A	Boilers, Firing Natural Gas	Upstream Emissions																					
		Direct Emissions			3.7E-04			2.0E-01					2.2E-05	1.3E-06	1.2E-04	1.5E-04	9.3E-06	6E-05	4.2E-05	2.9E-05	2.3E-04	2.6E-06	2.1E-01
1-B	Boilers, Firing No. 6 Oil	Upstream Emissions																					
		Direct Emissions			9.2E-05						1.6E-06	7.8E-05	2.0E-05	4.1E-07	5.9E-06	1.2E-05	8.9E-05	2.2E-05	4.4E-05	1.7E-06	1.2E-03	1.0E-05	2.1E-03
2	Cake Furnace, Firing Natural Gas	Upstream Emissions																					
		Direct Emissions			2.8E-04			1.5E-01					1.6E-05	9.8E-07	9.0E-05	1.1E-04	6.8E-06	4.1E-05	3.1E-05	2.1E-05	1.7E-04	2.0E-06	1.5E-01
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream Emissions																					
		Direct Emissions			6.9E-05			3.6E-02					4.0E-06	2.4E-07	2.2E-05	2.8E-05	1.7E-06	1E-05	7.7E-06	5.2E-06	4.2E-05	4.8E-07	3.8E-02
4	Other Facility Emission Sources, Firing Natural Gas	Upstream Emissions																					
		Direct Emissions			3.9E-04			2.0E-01					2.3E-05	1.4E-06	1.2E-04	1.6E-04	9.5E-06	6E-05	4.3E-05	2.9E-05	2.4E-04	2.7E-06	2.1E-01
5	Emergency Engines <600 HP, Firing Diesel	Upstream Emissions																					
		Direct Emissions	1.3E-06		5.7E-06						4.0E-06												5.4E-05
6	Emergency Engines >600 HP, Firing Diesel	Upstream Emissions																					
		Direct Emissions	9.6E-07		3.4E-05						2.6E-05												1.9E-04
7	Emergency Engines, Firing Natural Gas	Upstream Emissions																					
		Direct Emissions	3.2E-05	1.7E-07	3.9E-06	1.8E-07	1.7E-07	4.5E-06	3.5E-06	1.8E-07	1.1E-06												3.3E-04
TOTAL ACTUAL EMISSIONS FOR BASELINE PERIOD			**3.4E-05**	**1.7E-07**	**1.2E-03**	**1.8E-07**	**1.7E-07**	**5.8E-01**	**3.5E-06**	**1.8E-07**	**3.2E-05**	**7.8E-05**	**8.5E-05**	**4.3E-06**	**3.6E-04**	**4.7E-04**	**1.2E-04**	**1.8E-04**	**1.7E-04**	**8.6E-05**	**1.9E-03**	**1.8E-05**	**6.2E-01**

[1] *In accordance with DAR-21, the CO2e value has been calculated using the 20-year global warming potential (GWP) values listed in 6 NYCRR 496.5.* ***(NOTE: These values differ from the 100-yr GWP values that are used for permitting and New Source Review evaluations).***

[2] *Per ECL § 75-0101, "co-pollutants" are defined as Hazardous Air Pollutants produced by greenhouse gas emissions sources.*

[3] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION
APPENDIX A-3: SUMMARY OF PROJECTED ACTUAL GHG EMISSIONS ASSOCIATED WITH FACILITY OPERATIONS

TABLE A-3. SUMMARY OF PROJECTED ACTUAL EMISSIONS FOR STATIONARY SOURCES - FUTURE OPERATING SCENARIO

GHG SOURCE NO.	DESCRIPTION OF STATIONARY SOURCES	TYPE OF EMIS	PROJECTED ACTUAL EMISSIONS OF GREENHOUSE GASES FOR FUTURE OPERATING SCENARIO (TONS/YR) CO2	CH4	N2O	TOTAL CO2e [1]
1-A	Boilers, Firing Natural Gas	Upstream Emissions	2.96E+03	8.49E+01	3.4E-02	1.01E+04
		Direct Emissions	1.29E+04	2.4E-01	2.4E-02	1.29E+04
1-B	Boilers, Firing No. 6 Oil	Upstream Emissions	0.00E+00	0.00E+00	0.0E+00	0.00E+00
		Direct Emissions	0.00E+00	0.0E+00	0.0E+00	0.00E+00
2	Cake Furnace, Firing Natural Gas	Upstream Emissions	1.82E+03	5.23E+01	2.1E-02	6.22E+03
		Direct Emissions	7.92E+03	1.5E-01	1.5E-02	7.93E+03
3	Emission Sources Firing Natural Gas (to Supply DX Gas)	Upstream Emissions	5.53E+02	1.59E+01	6.3E-03	1.89E+03
		Direct Emissions	2.40E+03	4.5E-02	4.5E-03	2.41E+03
4	Other Facility Emission Sources, Firing Natural Gas	Upstream Emissions	5.07E+03	1.45E+02	5.8E-02	1.73E+04
		Direct Emissions	2.20E+04	4.1E-01	4.1E-02	2.20E+04
5	Emergency Engines <600 HP, Firing Diesel	Upstream Emissions	5.86E-01	4.78E-03	1.0E-05	9.90E-01
		Direct Emissions	2.96E+00	1.2E-04	2.4E-05	2.98E+00
6	Emergency Engines >600 HP, Firing Diesel	Upstream Emissions	3.41E+00	2.78E-02	5.8E-05	5.76E+00
		Direct Emissions	1.73E+01	7.0E-04	1.4E-04	1.73E+01
7	Emergency Engines, Firing Natural Gas	Upstream Emissions	3.53E-01	1.01E-02	4.0E-06	1.20E+00
		Direct Emissions	1.53E+00	2.9E-05	2.9E-06	1.54E+00
	TOTAL PROJECTED EMISSIONS		5.56E+04	2.99E+02	2.05E-01	8.08E+04

PROJECTED EMISSIONS OF CO-POLLUTANTS (TONS/YR) [2] (= HAZARDOUS AIR POLLUTANTS)

GHG SOURCE NO.	TYPE OF EMIS	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene
1-A	Upstream Emissions																				
	Direct Emissions	7.5E-05	8.1E-03				2.3E-04									6.6E-05					
1-B	Upstream Emissions																				
	Direct Emissions	0.0E+00	0.0E+00				0.0E+00									0.0E+00		0.0E+00			
2	Upstream Emissions																				
	Direct Emissions	4.6E-05	5.0E-03				1.4E-04									4.1E-05					
3	Upstream Emissions																				
	Direct Emissions	1.4E-05	1.5E-03				4.2E-05									1.2E-05					
4	Upstream Emissions																				
	Direct Emissions	1.3E-04	1.4E-02				3.9E-04									1.1E-04					
5	Upstream Emissions																				
	Direct Emissions	3.1E-06	2.1E-05				1.7E-05			1.4E-05						1.5E-06					7.1E-07
6	Upstream Emissions																				
	Direct Emissions	2.2E-05	8.4E-06				8.2E-05			2.7E-06						1.4E-05					
7	Upstream Emissions																				
	Direct Emissions	3.9E-06	7.2E-04	8.0E-07	4.0E-05	6.2E-07	2.5E-05	2.5E-08	3.2E-07	1.1E-04	1.9E-06	5.1E-07	5.9E-07	6.9E-07	8.7E-07	1.3E-06	2.8E-06	1.4E-06	7.2E-07	9.6E-07	1.1E-05
TOTAL PROJECTED EMISSIONS		2.9E-04	2.9E-02	8.0E-07	4.0E-05	6.2E-07	9.2E-04	2.5E-08	3.2E-07	1.3E-04	1.9E-06	5.1E-07	5.9E-07	6.9E-07	8.7E-07	2.5E-04	2.8E-06	1.4E-06	7.2E-07	9.6E-07	1.1E-05

GHG SOURCE NO.	TYPE OF EMIS	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [3]
1-A	Upstream Emissions																					
	Direct Emissions			3.7E-04			1.9E-01					2.2E-05	1.3E-06	1.2E-04	1.5E-04	9.1E-06	5E-05	4.1E-05	2.8E-05	2.3E-04	2.6E-06	2.0E-01
1-B	Upstream Emissions																					
	Direct Emissions			0.0E+00						0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
2	Upstream Emissions																					
	Direct Emissions			2.3E-04			1.2E-01					1.3E-05	8.0E-07	7.3E-05	9.3E-05	5.6E-06	3.3E-05	2.5E-05	1.7E-05	1.4E-04	1.6E-06	1.3E-01
3	Upstream Emissions																					
	Direct Emissions			6.9E-05			3.6E-02					4.0E-06	2.4E-07	2.2E-05	2.8E-05	1.7E-06	1E-05	7.7E-06	5.2E-06	4.2E-05	4.8E-07	3.8E-02
4	Upstream Emissions																					
	Direct Emissions			6.3E-04			3.3E-01					3.7E-05	2.2E-06	2.0E-04	2.6E-04	1.6E-05	9E-05	7.0E-05	4.8E-05	3.9E-04	4.4E-06	3.5E-01
5	Upstream Emissions																					
	Direct Emissions	1.7E-06		7.5E-06						5.2E-06												7.1E-05
6	Upstream Emissions																					
	Direct Emissions	8.4E-07		3.0E-05						2.0E-05												1.7E-04
7	Upstream Emissions																					
	Direct Emissions	1.0E-04	5.5E-07	1.3E-05	5.8E-07	5.5E-07	1.5E-05	1.1E-05	5.7E-07	3.5E-06												1.1E-03
TOTAL PROJECTED EMISSIONS		1.0E-04	5.5E-07	1.3E-03	5.8E-07	5.5E-07	6.8E-01	1.1E-05	5.7E-07	2.9E-05	0.0E+00	7.6E-05	4.6E-06	4.2E-04	5.3E-04	3.2E-05	1.9E-04	1.4E-04	9.9E-05	8.0E-04	9.1E-06	7.2E-01

[1] *In accordance with DAR-21, the CO2e value has been calculated using the 20-year global warming potential (GWP) values listed in 6 NYCRR 496.5.* ***(NOTE: These values differ from the 100-yr GWP values that are used for permitting and New Source Review evaluations).***

[2] *Per ECL § 75-0101, "co-pollutants" are defined as Hazardous Air Pollutants produced by greenhouse gas emissions sources.*

[3] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

7/20/2023

TABLE A-4. SUMMARY OF ESTIMATED GHG EMISSIONS FROM MOBILE SOURCES

GHG SOURCE NO.	DESCRIPTION OF ONSITE MOBILE SOURCES	TYPE OF EMISSIONS	ACTUAL EMISSIONS IN 2018 (TONS/YR)				ACTUAL EMISSIONS IN 2019 (TONS/YR)				ACTUAL EMISSIONS IN 2020 (TONS/YR)				ACTUAL EMISSIONS IN 2021 (TONS/YR)				ACTUAL EMISSIONS IN 2022 (TONS/YR)				PROJECTED ACTUAL EMISSIONS (TONS/YR)			
			CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]	CO2	CH4	N2O	TOTAL CO2e [1]
M-1	**Onsite Mobile Sources Operated by Revere, Firing Propane**	Upstream Emissions	1.38E+02	9.91E-01	2.2E-03	2.22E+02	1.37E+02	9.82E-01	2.1E-03	2.20E+02	1.62E+02	1.16E+00	2.5E-03	2.60E+02	1.53E+02	1.10E+00	2.4E-03	2.46E+02	1.58E+02	1.14E+00	2.5E-03	2.55E+02	1.95E+02	1.40E+00	3.1E-03	3.13E+02
		Direct Emissions	5.23E+02	2.5E-02	5.0E-02	5.38E+02	5.18E+02	2.5E-02	4.9E-02	5.33E+02	6.13E+02	2.9E-02	5.8E-02	6.31E+02	5.81E+02	2.8E-02	5.5E-02	5.98E+02	6.00E+02	2.9E-02	5.7E-02	6.18E+02	7.38E+02	3.5E-02	7.0E-02	7.60E+02
M-2	**Onsite Mobile Sources Operated by Revere, Firing Diesel**	Upstream Emissions	1.03E+01	8.42E-02	1.8E-04	1.74E+01	1.04E+01	8.50E-02	1.8E-04	1.76E+01	1.02E+01	8.30E-02	1.7E-04	1.72E+01	1.07E+01	8.76E-02	1.8E-04	1.82E+01	1.11E+01	9.05E-02	1.9E-04	1.88E+01	1.30E+01	1.06E-01	2.2E-04	2.20E+01
		Direct Emissions	5.22E+01	2.1E-03	4.2E-04	5.25E+01	5.28E+01	2.1E-03	4.3E-04	5.31E+01	5.15E+01	2.1E-03	4.2E-04	5.18E+01	5.44E+01	2.2E-03	4.4E-04	5.47E+01	5.62E+01	2.3E-03	4.6E-04	5.65E+01	6.58E+01	2.7E-03	5.3E-04	6.61E+01
M-3	**Onsite Mobile Sources Operated by Revere, Firing Gasoline**	Upstream Emissions	7.50E+00	4.96E-02	1.3E-04	1.17E+01	6.73E+00	4.45E-02	1.1E-04	1.05E+01	4.01E+00	2.65E-02	6.8E-05	6.25E+00	4.95E+00	3.27E-02	8.4E-05	7.72E+00	5.05E+00	3.34E-02	8.5E-05	7.87E+00	5.55E+00	3.67E-02	9.4E-05	8.66E+00
		Direct Emissions	2.78E+01	1.2E-03	2.4E-03	2.86E+01	2.50E+01	1.1E-03	2.1E-03	2.56E+01	1.49E+01	6.4E-04	1.3E-03	1.53E+01	1.84E+01	7.8E-04	1.6E-03	1.88E+01	1.87E+01	8.0E-04	1.6E-03	1.92E+01	2.06E+01	8.8E-04	1.8E-03	2.11E+01
M-4	***Offsite Mobile Sources Operated by Vendors & Service Providers, Firing Diesel*** [2]	Upstream Emissions																	*1.86E+00*	*1.51E-02*	*3.2E-05*	*3.14E+00*	*2.34E+00*	*1.91E-02*	*4.0E-05*	*3.95E+00*
		Direct Emissions																	*9.40E+00*	*3.8E-04*	*7.6E-05*	*9.46E+00*	*1.18E+01*	*4.8E-04*	*9.6E-05*	*1.19E+01*
M-5	***Offsite Mobile Sources Operated by Vendors & Service Providers, Firing Gasoline*** [2]	Upstream Emissions																	*3.90E-02*	*2.58E-04*	*6.6E-07*	*6.09E-02*	*4.29E-02*	*2.84E-04*	*7.3E-07*	*6.70E-02*
		Direct Emissions																	*1.45E-01*	*6.2E-06*	*1.2E-05*	*1.49E-01*	*1.59E-01*	*6.8E-06*	*1.4E-05*	*1.63E-01*
TOTAL EMISSIONS			**7.6E+02**	**1.2E+00**	**5.5E-02**	**8.7E+02**	**7.5E+02**	**1.1E+00**	**5.4E-02**	**8.6E+02**	**8.6E+02**	**1.3E+00**	**6.3E-02**	**9.8E+02**	**8.2E+02**	**1.3E+00**	**6.0E-02**	**9.4E+02**	**8.6E+02**	**1.3E+00**	**6.2E-02**	**9.9E+02**	**1.1E+03**	**1.6E+00**	**7.6E-02**	**1.2E+03**

[1] *In accordance with DAR-21, the CO2e value has been calculated using the 20-year global warming potential (GWP) values listed in 6 NYCRR 496.5.* ***(NOTE: These values differ from the 100-yr GWP values that are used for permitting and New Source Review evaluations).***

[2] *Values for 2022 represent estimates for "current operations".*

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APPENDIX B CALCULATIONS FOR POTENTIAL TO EMIT

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX B-1: CALCULATIONS FOR POTENTIAL TO EMIT - BOILERS FIRING (1) NATURAL GAS / NO. 2 FUEL OIL (BACK-UP) OR (2) NATURAL GAS / NO. 6 FUEL OIL (BACK-UP)(CURRENT)

EMISSION SOURCES

SOURCES	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
BOILER 1	00BR1	42.0
BOILER 2	00BR2	42.0
BOILER 3	00BR3	57.2
TOTAL ALL BOILERS	---	**141.2**

POTENTIAL TO EMIT CALCULATIONS FOR BOILERS FIRING NATURAL GAS, No. 2 FUEL OIL AND No. 6 FUEL OIL

0 Process Information

		COMMENTS
Maximum Potential Operating Hours (hrs/yr) =	8760	
Maximum Heat Input Rating for Boilers (MMBtu/hr) =	141.2	
Maximum Fuel Usage Assuming No Fuel Limitations (MMBtu/yr) =	1.24E+06	*FUTURE SCENARIO*
Maximum Allowable Usage of "Fuel Oil" (gal/yr) =	3,360,000	*CURRENT SCENARIO: Permit Condition 9 [with the underlying requirement of 6 NYCRR 201-7] limits the usage of "fuel oil" to 3,360,000 gallons/yr on a rolling 12-month basis.*
HHV of No. 6 Oil (MMBtu/gal)	0.150	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1. NOTE: This value is higher than the HHV listed in New York State's "2022 GHG Report" (i.e., 0.091 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*
Maximum Allowable No. 6 Fuel Oil Usage (MMBtu/yr) =	5.04E+05	*= (Maximum Allowable Usage of "Fuel Oil", gal/yr) x (HHV of No. 6 Oil, MMBtu/gal)*

	Natural Gas	No. 6 Fuel Oil	No. 2 Fuel Oil	*COMMENTS*
Maximum Fuel Usage (MMBtu/yr) =	1.24E+06	5.04E+05	1.24E+06	***No. 6 Oil:*** *Permit Condition 9 [with the underlying requirement of 6 NYCRR 201-7] limits the usage of "fuel oil" to 3,360,000 gallons/yr on a rolling 12-month basis.* ***No. 2 Oil:*** *In the permit renewal application submitted on 2/8/23, the facility has requested that the "fuel oil" limitation in Permit Condition 9 be removed.*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas, No. 6 Fuel Oil and No. 2 Fuel Oil

	PTE FOR NATURAL GAS				PTE FOR No. 6 FUEL OIL (USAGE LIMITED BY PC #9)				PTE FOR No. 2 FUEL OIL				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	11,183	109	0.19	20,423	14,599	119	0.25	24,638	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	24.632	2.40E-01	4.2E-04	*44.985*	32.156	2.62E-01	5.5E-04	*54.269*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	3.33E+07	9.54E+05	3.8E+02	1.14E+08	1.24E+07	1.21E+05	2.1E+02	2.27E+07	3.98E+07	3.24E+05	6.8E+02	6.71E+07	*= (Maximum Fuel Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**1.66E+04**	**4.77E+02**	**1.9E-01**	*5.68E+04*	**6.21E+03**	**6.05E+01**	**1.1E-01**	*1.13E+04*	**1.99E+04**	**1.62E+02**	**3.4E-01**	*3.36E+04*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	
Upstream Emissions as CO2e (tons/yr)	**1.66E+04**	**4.00E+04**	**5.0E+01**	**5.67E+04**	**6.21E+03**	**5.08E+03**	**2.78E+01**	**1.13E+04**	**1.99E+04**	**1.36E+04**	**8.99E+01**	**3.36E+04**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE - Direct GHG Emissions from Boilers Using Natural Gas, No. 6 Fuel Oil or No. 2 Fuel Oil

	PTE FOR NATURAL GAS				PTE FOR No. 6 FUEL OIL (USAGE LIMITED BY PC #9)				PTE FOR No. 2 FUEL OIL				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	75.10	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	165.2	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.44E+08	2.7E+03	2.7E+02	---	8.33E+07	3.3E+03	6.7E+02	---	2.01E+08	8.2E+03	1.6E+03	---	*= (Maximum Fuel Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**7.22E+04**	**1.4E+00**	**1.4E-01**	---	**4.16E+04**	**1.7E+00**	**3.3E-01**	---	**1.01E+05**	**4.1E+00**	**8.2E-01**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	7.22E+04	1.1E+02	3.6E+01	7.23E+04	4.16E+04	1.4E+02	8.8E+01	4.19E+04	1.01E+05	3.4E+02	2.2E+02	1.01E+05	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Summary of Total GHG Emissions from Boilers Using Natural Gas, No. 6 Fuel Oil or No. 2 Fuel Oil

	PTE FOR NATURAL GAS				PTE FOR No. 6 FUEL OIL (USAGE LIMITED BY PC #9)				PTE FOR No. 2 FUEL OIL				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Upstream Emissions (tons/yr)	**1.66E+04**	**4.77E+02**	**1.9E-01**	**5.67E+04**	**6.21E+03**	**6.05E+01**	**1.1E-01**	**1.13E+04**	**1.99E+04**	**1.62E+02**	**3.4E-01**	3.36E+04	*= Values calculated in Section 1*
Combustion Emissions (tons/yr)	**7.22E+04**	**1.4E+00**	**1.4E-01**	**7.23E+04**	**4.16E+04**	**1.7E+00**	**3.3E-01**	**4.19E+04**	**1.01E+05**	**4.1E+00**	**8.2E-01**	**1.01E+05**	*= Values calculated in Section 2*
Total Emissions (tons/yr)	**8.88E+04**	**4.78E+02**	3.27E-01	**1.29E+05**	**4.78E+04**	**6.22E+01**	**4.38E-01**	**5.32E+04**	**1.21E+05**	**1.66E+02**	**1.16E+00**	**1.35E+05**	*= (Upstream GHG Emissions, tons/yr) + (Combustion GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	8.88E+04	4.0E+04	8.6E+01	1.29E+05	4.78E+04	5.2E+03	1.2E+02	5.32E+04	1.21E+05	1.4E+04	3.1E+02	1.35E+05	*= (Total Emissions, ton/yr) x (20-yr GWP)*
Total Emissions as CO2e (metric tonnes/yr)	*8.06E+04*	*3.6E+04*	*7.8E+01*	*1.17E+05*	*4.34E+04*	*4.7E+03*	*1.0E+02*	*4.82E+04*	*1.09E+05*	*1.3E+04*	*2.8E+02*	*1.22E+05*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

*Vaues shown in **red** are higher than comparable value for Natural Gas.*

4 PTE - Total GHG Emissions from Boilers Under Current and Future Operating Scenarios

	CURRENT OPERATING SCENARIO FOR BOILERS: NATURAL GAS / No. 6 FUEL OIL (USAGE OF FUEL OIL LIMITED BY PC #9) **				FUTURE OPERATING SCENARIO FOR BOILERS: NATURAL GAS / No. 2 FUEL OIL AS BACKUP (OPERATED AS "GAS-FIRED BOILERS") **				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Upstream Emissions (tons/yr)	**1.66E+04**	**4.77E+02**	**1.9E-01**	**5.67E+04**	**1.66E+04**	**4.77E+02**	**1.9E-01**	**5.67E+04**	
Combustion Emissions (tons/yr)	**7.22E+04**	**1.7E+00**	**3.3E-01**	**7.23E+04**	**7.22E+04**	**1.4E+00**	**1.4E-01**	**7.23E+04**	
Total Emissions (tons/yr)	**8.88E+04**	**4.8E+02**	**4.4E-01**	**---**	**8.88E+04**	**4.8E+02**	**3.3E-01**	**1.29E+05**	
Total Emissions as CO2e (tons/yr)	8.88E+04	4.0E+04	1.2E+02	1.29E+05	8.88E+04	4.0E+04	8.6E+01	1.29E+05	
Total Emissions as CO2e (metric tonnes/yr)	*8.06E+04*	*3.6E+04*	*1.0E+02*	*1.17E+05*	*8.06E+04*	*3.6E+04*	*7.8E+01*	*1.17E+05*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

** *For Current Operation: values = max {calculated values for Natural Gas and No. 6 Fuel Oil}.*
For Future Operation: Assume PTE = PTE for Natural Gas. The permit renewal application states that the facility will convert from No. 6 oil to No. 2 oil, and the three boilers will be operated as "gas-fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ. Under this definition, the facility can only fire liquid fuel during a natural gas curtailment or supply interruption.

5 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by Boilers

POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)
NATURAL GAS ONLY

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Hexane	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07		3.3E-06	1.8E-03			2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	8.4E-01	9.1E+01	2.5E+00	7.4E-01		4.1E+00	2.2E+03			2.4E-01	1.5E-02	1.3E+00	1.7E+00	1.0E-01	6E-01	4.6E-01	3.2E-01	2.5E+00	2.9E-02	2.3E+03
Emissions (ton/yr)	**4.2E-04**	**4.5E-02**	**1.3E-03**	**3.7E-04**		**2.1E-03**	**1.1E+00**			**1.2E-04**	**7.3E-06**	**6.7E-04**	**8.5E-04**	**5.1E-05**	**3E-04**	**2.3E-04**	**1.6E-04**	**1.3E-03**	**1.5E-05**	**1.1E+00**

POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)
NO. 6 FUEL OIL (USAGE LIMTED BY PC #9)

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Hexane	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05		7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	4.00E+00	1.11E+02	7.19E-01	3.80E+00	2.14E-01	2.08E+01		3.66E-01	1.76E+01	4.44E+00	9.34E-02	1.34E+00	2.84E+00	2.02E+01	5.07E+00	1.01E+01	3.80E-01	2.84E+02	2.29E+00	4.85E+02
Emissions (ton/yr)	**2.00E-03**	**5.54E-02**	**3.60E-04**	**1.90E-03**	**1.07E-04**	**1.04E-02**		**1.83E-04**	**8.82E-03**	**2.22E-03**	**4.67E-05**	**6.69E-04**	**1.42E-03**	**1.01E-02**	**2.54E-03**	**5.04E-03**	**1.90E-04**	**1.42E-01**	**1.15E-03**	**2.43E-01**

Current Operating Scenario **NATURAL GAS / No. 6 FUEL OIL (USAGE OF FUEL OIL LIMITED BY PC #9)**

POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)
NATURAL GAS / No. 6 FUEL OIL (NO. 6 USAGE LIMITED BY PC #9)

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Hexane	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emissions (ton/yr)	**2.00E-03**	**5.54E-02**	**1.3E-03**	**1.90E-03**	**1.07E-04**	**1.0E-02**	**1.1E+00**	**1.83E-04**	**8.82E-03**	**2.22E-03**	**4.67E-05**	**6.69E-04**	**1.42E-03**	**1.01E-02**	**2.54E-03**	**5.04E-03**	**1.90E-04**	**1.42E-01**	**1.15E-03**	**1.1E+00**

Future Operating Scenario **NATURAL GAS / No. 2 FUEL OIL AS BACKUP (OPERATED AS "GAS-FIRED BOILERS") ****

POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)
FUTURE OPERATING SCENARIO FOR BOILERS: NATURAL GAS / No. 2 FUEL OIL AS BACK-UP (OPERATED AS "GAS-FIRED BOILER")

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Hexane	Xylenes	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07		3.3E-06	1.8E-03			2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	8.4E-01	9.1E+01	2.5E+00	7.4E-01		4.1E+00	2.2E+03			2.4E-01	1.5E-02	1.3E+00	1.7E+00	1.0E-01	6E-01	4.6E-01	3.2E-01	2.5E+00	2.9E-02	2.3E+03
Emissions (ton/yr)	**4.2E-04**	**4.5E-02**	**1.3E-03**	**3.7E-04**		**2.1E-03**	**1.1E+00**			**1.2E-04**	**7.3E-06**	**6.7E-04**	**8.5E-04**	**5.1E-05**	**3E-04**	**2.3E-04**	**1.6E-04**	**1.3E-03**	**1.5E-05**	**1.1E+00**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX B-2: CALCULATIONS FOR POTENTIAL TO EMIT - CAKE FURNACE FIRING NATURAL GAS

EMISSION SOURCES

EMISSION SOURCE FIRING NATURAL GAS	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
Cake Furnace (1701 Walking Beam Furnace)	01701	51.8

POTENTIAL TO EMIT CALCULATIONS FOR FACILITY-WIDE SOURCES FIRING NATURAL GAS

0 Process Information

		COMMENTS
Maximum Potential Operating Hours (hrs/yr) =	8760	
Maximum Heat Input Rating for Cake Furnace (MMBtu/hr) =	51.8	
Maximum Natural Gas Usage (MMBtu/yr) =	4.54E+05	*= (Maximum Heat Input Rating for All Sources, MMBtu/hr) x (Maximum Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.22E+07	3.50E+05	1.4E+02	4.16E+07	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**6.10E+03**	**1.75E+02**	**7.0E-02**	*2.08E+04*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**6.10E+03**	**1.47E+04**	**1.8E+01**	**2.08E+04**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE - Direct GHG Emissions from Combustion of Natural Gas by Facility-Wide Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	5.30E+07	1.0E+03	1.0E+02	---	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**2.65E+04**	**5.0E-01**	**5.0E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**2.65E+04**	**4.2E+01**	**1.3E+01**	**2.65E+04**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Total GHG Emissions from Use of Natural Gas by Facility-Wide Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**3.3E+04**	**1.8E+02**	**1.2E-01**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**3.3E+04**	**1.5E+04**	**3.2E+01**	**4.7E+04**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	***3.0E+04***	***1.3E+04***	***2.9E+01***	***4.3E+04***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Natural Gas by Facility-Wide Sources

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	4.9E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	3.1E-01	3.3E+01	9.3E-01	2.7E-01	1.5E+00	8.0E+02	8.9E-02	5.3E-03	4.9E-01	6.2E-01	3.7E-02	2.2E-01	1.7E-01	1.2E-01	9.3E-01	1.1E-02	**8.4E+02**
Emissions (ton/yr)	**1.5E-04**	**1.7E-02**	**4.7E-04**	**1.4E-04**	**7.6E-04**	**4.0E-01**	**4.4E-05**	**2.7E-06**	**2.4E-04**	**3.1E-04**	**1.9E-05**	**1.1E-04**	**8.5E-05**	**5.8E-05**	**4.7E-04**	**5.3E-06**	**4.2E-01**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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EMISSION SOURCES

EMISSION SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
DX Unit in Rolling Mill	---	3.69
DX Unit in Bar Mill	---	2.30
TOTAL ALL SOURCES	**---**	**5.99**

POTENTIAL TO EMIT CALCULATIONS FOR FACILITY-WIDE SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)

0 Process Information

		COMMENTS
Maximum Potential Operating Hours (hrs/yr) =	8760	
Maximum Heat Input Rating for All Sources (MMBtu/hr) =	6.0	
Maximum Natural Gas Usage (MMBtu/yr) =	5.2E+04	*= (Maximum Heat Input Rating for All Sources, MMBtu/hr) x (Maximum Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.41E+06	4.05E+04	1.6E+01	4.82E+06	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**7.05E+02**	**2.02E+01**	**8.1E-03**	*2.41E+03*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**7.05E+02**	**1.70E+03**	**2.1E+00**	**2.41E+03**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.

[2] GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).

2 PTE - Direct GHG Emissions from Combustion of Natural Gas by DX Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	6.13E+06	1.2E+02	1.2E+01	---	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**3.06E+03**	**5.8E-02**	**5.8E-03**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**3.06E+03**	**4.8E+00**	**1.5E+00**	**3.1E+03**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.

[2] GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).

3 PTE - Total GHG Emissions from DX Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	***NOTES***
Total Emissions (tons/yr)	**3.8E+03**	**2.0E+01**	**1.4E-02**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**3.8E+03**	**1.7E+03**	**3.7E+00**	**5.5E+03**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	***3.4E+03***	***1.5E+03***	***3.3E+00***	***5.0E+03***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from DX Sources

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	4.9E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	3.6E-02	3.9E+00	1.1E-01	3.1E-02	1.7E-01	9.3E+01	1.0E-02	6.2E-04	5.7E-02	7.2E-02	4.3E-03	2.6E-02	2.0E-02	1.3E-02	1.1E-01	1.2E-03	**9.7E+01**
Emissions (ton/yr)	**1.8E-05**	**1.9E-03**	**5.4E-05**	**1.6E-05**	**8.7E-05**	**4.6E-02**	**5.1E-06**	**3.1E-07**	**2.8E-05**	**3.6E-05**	**2.2E-06**	**1.3E-05**	**9.8E-06**	**6.7E-06**	**5.4E-05**	**6.2E-07**	**4.9E-02**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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EMISSION SOURCES

OTHER FACILITY COMBUSTION SOURCES FIRING NATURAL GAS	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
Galvanizing Furnace	<<exempt>>	9.7
1727 Lee Wilson Anneal	<<exempt>>	1.2
1728 Lee Wilson Anneal	<<exempt>>	1.2
2381 Ebner Anneal	<<exempt>>	1.6
2382 Ebner Anneal	<<exempt>>	1.6
1154 Bright Anneal	<<exempt>>	1.5
1738 Strand Anneal	<<exempt>>	4.2
464 Tray Style/Coil Anneal	<<exempt>>	1.5
Building Heater (Maint. office)	<<exempt>>	0.225
Building Heater (Maint. Storage)	<<exempt>>	0.074
Building Heater (Operations Building)	<<exempt>>	0.491
2 Building Heaters (Main office)(2.0 MMBtu/hr-heater)	<<exempt>>	4.0
Building Heater (Bldg 21 Cast Shop)	<<exempt>>	0.113
22 Unit Heaters (1 MMBtu/hr-heater)	<<exempt>>	22
10 Water Heaters (0.25 MMBtu/hr-heater)	<<exempt>>	2.5
TOTAL ALL SOURCES	---	**51.9**

POTENTIAL TO EMIT CALCULATIONS FOR FACILITY-WIDE SOURCES FIRING NATURAL GAS

0 Process Information

		COMMENTS
Maximum Potential Operating Hours (hrs/yr) =	8760	
Maximum Heat Input Rating for All Sources (MMBtu/hr) =	51.9	
Maximum Natural Gas Usage (MMBtu/yr) =	4.55E+05	*= (Maximum Heat Input Rating for All Sources, MMBtu/hr) x (Maximum Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	GREENHOUSE GASES CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.22E+07	3.51E+05	1.4E+02	4.17E+07	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**6.11E+03**	**1.75E+02**	**7.0E-02**	*2.09E+04*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	
Upstream Emissions as CO2e (tons/yr)	**6.11E+03**	**1.47E+04**	**1.9E+01**	**2.09E+04**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE - Direct GHG Emissions from Combustion of Natural Gas by Facility-Wide Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	5.31E+07	1.0E+03	1.0E+02	---	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**2.65E+04**	**5.0E-01**	**5.0E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	2.65E+04	4.2E+01	1.3E+01	2.7E+04	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Total GHG Emissions from Use of Natural Gas by Facility-Wide Sources

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**3.3E+04**	**1.8E+02**	**1.2E-01**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	3.3E+04	1.5E+04	3.2E+01	4.7E+04	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	*3.0E+04*	*1.3E+04*	*2.9E+01*	*4.3E+04*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Natural Gas by Facility-Wide Sources

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)															
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	4.9E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	3.1E-01	3.3E+01	9.4E-01	2.7E-01	1.5E+00	8.0E+02	8.9E-02	5.3E-03	4.9E-01	6.2E-01	3.7E-02	2.2E-01	1.7E-01	1.2E-01	9.4E-01	1.1E-02	**8.4E+02**
Emissions (ton/yr)	**1.6E-04**	**1.7E-02**	**4.7E-04**	**1.4E-04**	**7.6E-04**	**4.0E-01**	**4.5E-05**	**2.7E-06**	**2.5E-04**	**3.1E-04**	**1.9E-05**	**1.1E-04**	**8.5E-05**	**5.8E-05**	**4.7E-04**	**5.3E-06**	4.2E-01

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINE < 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (POWERHOUSE - 1960 GM)	<<exempt>>	**168**
TOTAL ALL DIESEL EMERGENCY ENGINES < 600 hP		168

POTENTIAL TO EMIT CALCULATIONS FOR EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Maximum No. of Potential Operating Hours (hrs/yr) =	500	
Total Nominal Power Output for All Emergency Engines (hP/hr) =	168	
Total Nominal Power Output for All Emergency Engines (MMBtu/hr) =	0.43	*= (Total Nominal Power Output for Emergency Engines, hP/hr) x [0.002544 MMBtu/hp/hr]*
Efficiency (%) =	40%	*Estimated*
Maximum Diesel Usage (MMBtu/hr) =	1.1	*= (Total Nominal Power Output for All Emergency Engines, MMBtu/hr) / (Engine Efficiency)*
Maximum Diesel Usage (MMBtu/yr) =	534	*= (Maximum Diesel Usage, MMBtu/hr) x (Maximum No. of Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	
Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	*= (Emission Factor, g/MMBtu) x [lb / 454 g]*
Emissions (lb/yr)	17,179	140	2.9E-01	28,993	*= (Maximum Diesel Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**8.59**	**7.00E-02**	**1.5E-04**	*14.5*	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Emissions as CO2e (tons/yr)	**8.59**	**5.88**	**3.9E-02**	**14.5**	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE- Direct GHG Emissions from Combustion of Diesel by Emergency Engines

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	
Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	*= (Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Emissions (lb/yr)	86,927	3.5E+00	7.1E-01	---	*= (Maximum Diesel Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**43.5**	**1.8E-03**	**3.5E-04**	---	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Emissions as CO2e (tons/yr)	**43.5**	**1.5E-01**	**9.3E-02**	**43.7**	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Total GHG Emissions from Use of Diesel Oil by Emergency Engines

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**52.1**	**7.2E-02**	**5.0E-04**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	52.1	6.0	1.3E-01	58.2	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	***47.2***	***5.5***	***1.2E-01***	***52.8***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Diesel oil

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	1,3-Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs [2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	8.98E-02	6.30E-01	4.98E-01	4.10E-01	4.53E-02	2.09E-02	4.94E-02	2.19E-01	1.52E-01	**2.07E+00**
Emissions (ton/yr)	**4.49E-05**	**3.15E-04**	**2.49E-04**	**2.05E-04**	**2.27E-05**	**1.04E-05**	**2.47E-05**	**1.09E-04**	**7.61E-05**	**1.03E-03**

[1] *Emission factors (lb/MMBtu fuel input) from AP-42, Section 3.4 ("Large Stationary Diesel And All Stationary Dual-fuel Engines"), Tables 3.4-3.*

NOTE: "Naphthalene" is included in "POM". To avoid double counting in TOTAL HAPs, the value for its "individual" contribution has been subtracted out.

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PROJECT IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX B-6: CALCULATIONS FOR POTENTIAL TO EMIT - EMERGENCY ENGINES > 600 hP FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINES > 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (SOAP HOUSE - 1999 CATERPILLAR)	<<exempt>>	**2,680**
TOTAL ALL DIESEL EMERGENCY ENGINES > 600 hP		2,680

POTENTIAL TO EMIT CALCULATIONS FOR EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Maximum No. of Potential Operating Hours (hrs/yr) =	500	
Total Nominal Power Output for All Emergency Engines (hP/hr) =	2,680	
Total Nominal Power Output for All Emergency Engines (MMBtu/hr) =	6.82	*= (Total Nominal Power Output for Emergency Engines, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	*Estimated*
Maximum Diesel Usage (MMBtu/hr) =	17.0	*= (Total Nominal Power Output for All Emergency Engines, MMBtu/hr) / (Engine Efficiency)*
Maximum Diesel Usage (MMBtu/yr) =	8,522	*= (Maximum Diesel Usage, MMBtu/hr) x (Maximum No. of Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	GREENHOUSE GASES CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	
Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	*= (Emission Factor, g/MMBtu) x [lb / 454 g]*
Emissions (lb/yr)	274,050	2,234	4.7E+00	462,500	*= (Maximum Diesel Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**137**	**1.12**	**2.3E-03**	*231*	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	
Emissions as CO2e (tons/yr)	137	93.8	6.2E-01	231	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.

[2] GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).

2 PTE- Direct GHG Emissions from Combustion of Diesel by Emergency Engines

	GREENHOUSE GASES CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	
Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	*= (Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Emissions (lb/yr)	1,386,697	5.6E+01	1.1E+01	---	*= (Maximum Diesel Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**693**	**2.8E-02**	**5.6E-03**	---	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	
Emissions as CO2e (tons/yr)	693	2.36	1.5E+00	697	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.

[2] GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).

3 PTE - Total GHG Emissions from Use of Diesel Oil by Emergency Engines

	GREENHOUSE GASES				
	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**830**	**1.1E+00**	**8.0E-03**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**830**	**96.2**	**2.1E+00**	**929**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	***753***	***87.3***	***1.9E+00***	***842***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Diesel oil

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs [2]
Emission Factor Diesel (lb/MMBtu) [1]	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	1.80E+00	6.72E-01	6.61E+00	2.15E-01	1.11E+00	6.72E-02	2.39E+00	1.64E+00	**1.34E+01**
Emissions (ton/yr)	**9.01E-04**	**3.36E-04**	**3.31E-03**	**1.07E-04**	**5.54E-04**	**3.36E-05**	**1.20E-03**	**8.22E-04**	**6.71E-03**

[1] *Emission factors (lb/MMBtu fuel input) from AP-42, Section 3.4 ("Large Stationary Diesel And All Stationary Dual-fuel Engines"), Tables 3.4-3.*

NOTE: "Naphthalene" is included in "POM". To avoid double counting in TOTAL HAPs, the value for its "individual" contribution has been subtracted out.

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PROJECT IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX B-7: CALCULATIONS FOR POTENTIAL TO EMIT - EMERGENCY ENGINES FIRING NATURAL GAS

EMISSION SOURCES

	NATURAL GAS FIRED EMERGENCY ENGINES	EMISSION SOURCE ID	hP	*COMMENTS*
NG-34	EMERGENCY GENERATOR (MAIN OFFICE - 2004 GENERAC)	<<exempt>>	34	*Existing emergency generator.*
NG-94	EMERGENCY GENERATOR (CAST SHOP)	<<exempt>>	94	*Replaced in 2023 by new 335 hP natural gas fired engine (listed immediately below).*
NG-335	EMERGENCY GENERATOR (CAST SHOP - 2023 GENERAC)	<<exempt>>	335	*Replaces existing 94 hP natural gas fired engine (listed immediately above).*
	NATURAL GAS EMERGENCY ENGINES **(CURRENT OPERATING SCENARIO: NG-34 & NG-94)**	---	**128**	*= (hP for NG-34) + (hP for NG-94)*
	NATURAL GAS EMERGENCY ENGINES **(FUTURE OPERATING SCENARIO: NG-34 + NG-335)**	---	**369**	*= (hP for NG-34) + (hP for NG-335)*

POTENTIAL TO EMIT CALCULATIONS FOR EMERGENCY ENGINES FIRING DIESEL

0 Process Information

	(CURRENT)	(FUTURE)	*COMMENTS*
Maximum No. of Potential Operating Hours (hrs/yr) =	500	500	
Total Nominal Power Output for All Emergency Engines (hP/hr) =	128	369	
Total Nominal Power Output for All Emergency Engines (MMBtu/hr) =	0.33	0.94	*= (Total Nominal Power Output for Emergency Engines, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	40%	*Estimated*
Maximum Natural Gas Usage (MMBtu/hr) =	0.8	2.3	*= (Total Nominal Power Output for All Emergency Engines, MMBtu/hr) / (Engine Efficiency)*
Maximum Natural Gas Usage (MMBtu/yr) =	407	1,173	*= (Maximum Natural Gas Usage, MMBtu/hr) x (Maximum No. of Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	PTE FOR CURRENT OPERATING SCENARIO				PTE FOR FUTURE OPERATING SCENARIO				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Emission Factor, g/MMBtu) x [lb / 454 g]*
Emissions (lb/yr)	10,943	314	1.3E-01	37,361	31,548	905	3.6E-01	107,704	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**5.5**	**1.6E-01**	**6.3E-05**	*18.7*	**15.8**	**4.5E-01**	**1.8E-04**	*53.9*	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	
Emissions as CO2e (tons/yr)	**5.5**	**13.2**	**1.7E-02**	**18.7**	**15.8**	**38.0**	**4.8E-02**	**53.8**	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE- Direct GHG Emissions from Combustion of Natural Gas by Emergency Engines

	PTE FOR CURRENT OPERATING SCENARIO				PTE FOR FUTURE OPERATING SCENARIO				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Emissions (lb/yr)	47,515	9.0E-01	9.0E-02	---	136,976	2.6E+00	2.6E-01	---	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Emission Factor, lb/MMBtu)*
Emissions (ton/yr)	**23.8**	**4.5E-04**	**4.5E-05**	---	**68.5**	**1.3E-03**	**1.3E-04**	---	*= (Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Emissions as CO2e (tons/yr)	**23.8**	**0.04**	**1.2E-02**	**23.8**	**68.5**	**0.11**	**3.4E-02**	**68.6**	*= (Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Total GHG Emissions from Use of Natural Gas by Emergency Engines

	PTE FOR CURRENT OPERATING SCENARIO				PTE FOR FUTURE OPERATING SCENARIO				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**29.2**	**1.6E-01**	**1.1E-04**	---	**84.3**	**4.5E-01**	**3.1E-04**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**29.2**	**13.2**	**2.8E-02**	**42**	**84.3**	**38.1**	**8.2E-02**	**122**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	***27***	***12.0***	***2.6E-02***	***39***	***76***	***34.6***	***7.4E-02***	***111***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Natural Gas

Current Operating Scenario NG-34 & NG-94

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)													
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	1.2E-01	2.2E+01	2.5E-02	1.2E+00	1.9E-02	7.9E-01	7.6E-04	1.0E-02	3.4E+00	6.0E-02	1.6E-02	1.8E-02	2.1E-02	2.7E-02	4.0E-02
Emissions (ton/yr)	**6.1E-05**	**1.1E-02**	**1.2E-05**	**6.2E-04**	**9.6E-06**	**3.9E-04**	**3.8E-07**	**5.0E-06**	**1.7E-03**	**3.0E-05**	**8.0E-06**	**9.1E-06**	**1.1E-05**	**1.3E-05**	**2.0E-05**

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)													
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	8.6E-02	4.4E-02	2.2E-02	3.0E-02	3.3E-01	3.2E+00	1.7E-02	3.9E-01	1.8E-02	1.7E-02	4.5E-01	3.4E-01	1.8E-02	1.1E-01	**3.3E+01**
Emissions (ton/yr)	**4.3E-05**	**2.2E-05**	**1.1E-05**	**1.5E-05**	**1.7E-04**	**1.6E-03**	**8.6E-06**	**2.0E-04**	**9.0E-06**	**8.6E-06**	**2.3E-04**	**1.7E-04**	**8.9E-06**	**5.5E-05**	**1.7E-02**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 3.2 ("Natural Gas-fired Reciprocating Engines"), Tables 3.2-1, 3.2-2 & 3.2-3. Values conservatively reflect the highest emission factor for all natural gas-fired engines (2-stroke, 4-stroke, rich/lean burn).*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

Future Operating Scenario NG-34 & NG-335

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	3.5E-01	6.5E+01	7.1E-02	3.6E+00	5.5E-02	2.3E+00	2.2E-03	2.9E-02	9.8E+00	1.7E-01	4.6E-02	5.2E-02	6.2E-02	7.8E-02	1.1E-01
Emissions (ton/yr)	**1.8E-04**	**3.2E-02**	**3.6E-05**	**1.8E-03**	**2.8E-05**	**1.1E-03**	**1.1E-06**	**1.4E-05**	**4.9E-03**	**8.6E-05**	**2.3E-05**	**2.6E-05**	**3.1E-05**	**3.9E-05**	**5.7E-05**

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	2.5E-01	1.3E-01	6.4E-02	8.6E-02	9.6E-01	9.1E+00	5.0E-02	1.1E+00	5.2E-02	4.9E-02	1.3E+00	9.9E-01	5.1E-02	3.1E-01	**9.6E+01**
Emissions (ton/yr)	**1.2E-04**	**6.3E-05**	**3.2E-05**	**4.3E-05**	**4.8E-04**	**4.6E-03**	**2.5E-05**	**5.7E-04**	**2.6E-05**	**2.5E-05**	**6.5E-04**	**5.0E-04**	**2.6E-05**	**1.6E-04**	**4.8E-02**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 3.2 ("Natural Gas-fired Reciprocating Engines"), Tables 3.2-1, 3.2-2 & 3.2-3. Values conservatively reflect the highest emission factor for all natural gas-fired engines (2-stroke, 4-stroke, rich/lean burn).*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

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APPENDIX C CALCULATIONS FOR PAST ACTUAL & PROJECTED EMISSIONS

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-1: CALCULATIONS FOR ACTUAL GHG EMISSIONS - BOILERS FIRING NATURAL GAS

EMISSION SOURCES

NATURAL GAS FIRED SOURCES	EMISSION SOURCE ID
BOILER 1	00BR1
BOILER 2	00BR2
BOILER 3	00BR3

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM BOILERS FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	1.953E+08	2.250E+08	2.411E+08	1.956E+08	9.450E+07	2.142E+08	*YEARLY ANNUAL = Values from facility flow meters.* *PROJECTED = Average {Actual Annual NG Usage values for 2018 - 2021}.* ***NOTE: Does not include reductions expected to result from Boiler control upgrade project.***
Actual Annual Natural Gas Usage (MMBtu/yr) =	2.007E+05	2.314E+05	2.481E+05	2.014E+05	9.721E+04	2.204E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	5.40E+06	1.55E+05	6.2E+01	1.84E+07	6.22E+06	1.78E+05	7.1E+01	2.12E+07	6.67E+06	1.91E+05	7.7E+01	2.28E+07	5.41E+06	1.55E+05	6.2E+01	1.85E+07	2.61E+06	7.49E+04	3.0E+01	8.92E+06	5.93E+06	1.70E+05	6.8E+01	2.02E+07	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**2.70E+03**	**7.74E+01**	**3.1E-02**	*9.21E+03*	**3.11E+03**	**8.92E+01**	**3.6E-02**	*1.06E+04*	**3.34E+03**	**9.56E+01**	**3.8E-02**	*1.14E+04*	**2.71E+03**	**7.76E+01**	**3.1E-02**	*9.24E+03*	**1.31E+03**	**3.75E+01**	**1.5E-02**	*4.46E+03*	**2.96E+03**	**8.49E+01**	**3.4E-02**	*1.01E+04*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	2.70E+03	6.50E+03	8.2E+00	9.20E+03	3.11E+03	7.49E+03	9.4E+00	1.06E+04	3.34E+03	8.03E+03	1.0E+01	1.14E+04	2.71E+03	6.52E+03	8.2E+00	9.23E+03	1.31E+03	3.15E+03	4.0E+00	4.46E+03	2.96E+03	7.14E+03	9.0E+00	1.01E+04	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	2.34E+07	4.41E+02	4.41E+01	---	2.70E+07	5.1E+02	5.1E+01	---	2.90E+07	5.5E+02	5.5E+01	---	2.35E+07	4.4E+02	4.4E+01	---	1.13E+07	2.1E+02	2.1E+01	---	2.57E+07	4.8E+02	4.8E+01	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**1.17E+04**	**2.2E-01**	**2.2E-02**	---	**1.35E+04**	**2.5E-01**	**2.5E-02**	---	**1.45E+04**	**2.7E-01**	**2.7E-02**	---	**1.18E+04**	**2.2E-01**	**2.2E-02**	---	**5.67E+03**	**1.1E-01**	**1.1E-02**	---	**1.29E+04**	**2.4E-01**	**2.4E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	1.17E+04	1.9E+01	5.8E+00	1.17E+04	1.35E+04	2.1E+01	6.7E+00	1.35E+04	1.45E+04	2.3E+01	7.2E+00	1.45E+04	1.18E+04	1.9E+01	5.8E+00	1.18E+04	5.67E+03	9.0E+00	2.8E+00	5.69E+03	1.29E+04	2.0E+01	6.4E+00	1.29E+04	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**1.44E+04**	**7.8E+01**	**5.3E-02**	---	**1.66E+04**	**8.9E+01**	**6.1E-02**	---	**1.78E+04**	**9.6E+01**	**6.6E-02**	---	**1.45E+04**	**7.8E+01**	**5.3E-02**	---	**6.98E+03**	**3.8E+01**	**2.6E-02**	---	**1.58E+04**	**8.5E+01**	**5.8E-02**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	1.44E+04	6.5E+03	1.4E+01	2.09E+04	1.66E+04	7.5E+03	1.6E+01	2.41E+04	1.78E+04	8.1E+03	1.7E+01	2.59E+04	1.45E+04	6.5E+03	1.4E+01	2.10E+04	6.98E+03	3.2E+03	6.8E+00	1.01E+04	1.58E+04	7.2E+03	1.5E+01	2.30E+04	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	*1.31E+04*	*5.9E+03*	*1.3E+01*	*0.00E+00*	*1.51E+04*	*6.8E+03*	*1.5E+01*	*2.19E+04*	*1.62E+04*	*7.3E+03*	*1.6E+01*	*2.35E+04*	*1.31E+04*	*5.9E+03*	*1.3E+01*	*1.91E+04*	*6.33E+03*	*2.9E+03*	*6.2E+00*	*9.20E+03*	*1.44E+04*	*6.5E+03*	*1.4E+01*	*2.09E+04*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

EMISSION SOURCES

No. 6 FUEL OIL FIRED SOURCES	EMISSION SOURCE ID
BOILER 1	00BR1
BOILER 2	00BR2
BOILER 3	00BR3

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM BOILERS FIRING NO. 6 FUEL OIL

0 Process Information

HHV of No. 6 Oil (MMBtu/gal)	**0.150**	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1. NOTE: This value is higher than the HHV listed in New York State's "2022 GHG Report" (i.e., 0.091 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Actual Annual No. 6 Fuel Oil Usage (gal/yr) =	0	0	6.24E+03	5.29E+04	0	0.00E+00	*YEARLY ANNUAL = Values from facility flow meters. PROJECTED = 0 (The permit renewal application states that the facility will convert from No. 6 oil to No. 2 oil, and the three boilers will be operated as "gas-fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ).*
Actual Annual No. 6 Fuel Oil Usage (MMBtu/yr) =	0	0	9.36E+02	7.93E+03	0	0.00E+00	*= (Actual Annual No. 6 Fuel Oil Usage, gal/yr) x (HHV of No. 6 Fuel Oil, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of No. 6 Fuel Oil

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)
Upstream Emission Factor (g/MMBtu) [1]	11,183	109	0.19	20,423	11,183	109	0.19	20,423	11,183	109	0.19	20,423
Upstream Emission Factor (lb/MMBtu)	24.632	2.40E-01	4.2E-04	*44.985*	24.632	2.40E-01	4.2E-04	*44.985*	24.632	2.40E-01	4.2E-04	*44.985*
Upstream Emissions (lb/yr)	0.00E+00	0.00E+00	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.00E+00	2.31E+04	2.25E+02	3.9E-01	4.21E+04
Upstream Emissions (ton/yr)	**0.00E+00**	**0.00E+00**	**0.0E+00**	*0.00E+00*	**0.00E+00**	**0.00E+00**	**0.0E+00**	*0.00E+00*	**1.15E+01**	**1.12E-01**	**2.0E-04**	*2.11E+01*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Upstream Emissions as CO2e (tons/yr)	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.00E+00**	**1.15E+01**	**9.44E+00**	**5.2E-02**	**2.10E+01**

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	11,183	109	0.19	20,423	11,183	109	0.19	20,423	11,183	109	0.19	20,423	
Upstream Emission Factor (lb/MMBtu)	24.632	2.40E-01	4.2E-04	*44.985*	24.632	2.40E-01	4.2E-04	*44.985*	24.632	2.40E-01	4.2E-04	*44.985*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.95E+05	1.90E+03	3.3E+00	3.57E+05	0.00E+00	0.00E+00	0.0E+00	0.00E+00	0.00E+00	0.00E+00	0.0E+00	0.00E+00	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**9.77E+01**	**9.52E-01**	**1.7E-03**	*1.78E+02*	**0.00E+00**	**0.00E+00**	**0.0E+00**	*0.00E+00*	**0.00E+00**	**0.00E+00**	**0.0E+00**	*0.00E+00*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**9.77E+01**	**8.00E+01**	**4.4E-01**	**1.78E+02**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.00E+00**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Boiler Use of No. 6 Fuel Oil

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Combustion Emission Factor (kg/MMBtu) [1]	75.10	3.0E-03	6.0E-04	---	75.10	3.0E-03	6.0E-04	---	75.10	3.0E-03	6.0E-04	---
Combustion Emission Factor (lb/MMBtu)	165.2	6.6E-03	1.3E-03	---	165.2	6.6E-03	1.3E-03	---	165.2	6.6E-03	1.3E-03	---
Combustion Emissions (lb/yr)	0.00E+00	0.00E+00	0.00E+00	---	0.00E+00	0.0E+00	0.0E+00	---	1.55E+05	6.2E+00	1.2E+00	---
Combustion Emissions (ton/yr)	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**7.74E+01**	**3.1E-03**	**6.2E-04**	---
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Combustion Emissions as CO2e (tons/yr)	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**7.74E+01**	**2.6E-01**	**1.6E-01**	**7.78E+01**

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	75.10	3.0E-03	6.0E-04	---	75.10	3.0E-03	6.0E-04	---	75.10	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	165.2	6.6E-03	1.3E-03	---	165.2	6.6E-03	1.3E-03	---	165.2	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.31E+06	5.2E+01	1.0E+01	---	0.00E+00	0.0E+00	0.0E+00	---	0.00E+00	0.0E+00	0.0E+00	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**6.55E+02**	**2.6E-02**	**5.2E-03**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**6.55E+02**	**2.2E+00**	**1.4E+00**	**6.59E+02**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Boliler Use of No. 6 Fuel Oil

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Total Emissions (tons/yr)	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**8.89E+01**	**1.2E-01**	**8.1E-04**	---
Total Emissions as CO2e (tons/yr)	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**8.89E+01**	**9.7E+00**	**2.1E-01**	**9.88E+01**
Total Emissions as CO2e (metric tonnes/yr)	***0.00E+00***	***0.0E+00***	***0.0E+00***	***0.00E+00***	***0.00E+00***	***0.0E+00***	***0.0E+00***	***0.00E+00***	***8.06E+01***	***8.8E+00***	***1.9E-01***	***8.96E+01***

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**7.53E+02**	**9.8E-01**	**6.9E-03**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	**0.00E+00**	**0.0E+00**	**0.0E+00**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**7.53E+02**	**8.2E+01**	**1.8E+00**	**8.37E+02**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	**0.00E+00**	**0.0E+00**	**0.0E+00**	**0.00E+00**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	***6.83E+02***	***7.5E+01***	***1.7E+00***	***7.59E+02***	***0.00E+00***	***0.0E+00***	***0.0E+00***	***0.00E+00***	***0.00E+00***	***0.0E+00***	***0.0E+00***	***0.00E+00***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-3: CALCULATIONS FOR ACTUAL GHG EMISSIONS - OTHER FACILITY COMBUSTION SOURCES FIRING NATURAL GAS

EMISSION SOURCES

EMISSION SOURCE FIRING NATURAL GAS	EMISSION SOURCE ID
Cake Furnace (1701 Walking Beam Furnace)	01701

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM OTHER SOURCES FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	9.3422E+07	1.4890E+08	2.2870E+08	9.3868E+07	1.0697E+08	1.3188E+08	*YEARLY ANNUAL = Values from facility flow meters.* *PROJECTED = (Total NG Usage for 2022, scf/yr) + (24,914,400 scf/yr)* *NOTE: PROJECTED reflects a 23.3% increase over 2022 .*
Actual Annual Natural Gas Usage (MMBtu/yr) =	9.6007E+04	1.5313E+05	2.3542E+05	9.6604E+04	1.1003E+05	1.3566E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	2.58E+06	7.40E+04	3.0E+01	8.81E+06	4.12E+06	1.18E+05	4.7E+01	1.41E+07	6.33E+06	1.81E+05	7.3E+01	2.16E+07	2.60E+06	7.45E+04	3.0E+01	8.87E+06	2.96E+06	8.48E+04	3.4E+01	1.01E+07	3.65E+06	1.05E+05	4.2E+01	1.25E+07	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**1.29E+03**	**3.70E+01**	**1.5E-02**	*4.41E+03*	**2.06E+03**	**5.90E+01**	**2.4E-02**	*7.03E+03*	**3.16E+03**	**9.07E+01**	**3.6E-02**	*1.08E+04*	**1.30E+03**	**3.72E+01**	**1.5E-02**	*4.43E+03*	**1.48E+03**	**4.24E+01**	**1.7E-02**	*5.05E+03*	**1.82E+03**	**5.23E+01**	**2.1E-02**	*6.23E+03*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	1.29E+03	3.11E+03	3.91E+00	4.40E+03	2.06E+03	4.96E+03	6.23E+00	7.02E+03	3.16E+03	7.62E+03	9.58E+00	1.08E+04	1.30E+03	3.13E+03	3.93E+00	4.43E+03	1.48E+03	3.56E+03	4.48E+00	5.05E+03	1.82E+03	4.39E+03	5.52E+00	6.22E+03	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.12E+07	2.11E+02	2.11E+01	---	1.79E+07	3.4E+02	3.4E+01	---	2.75E+07	5.2E+02	5.2E+01	---	1.13E+07	2.1E+02	2.1E+01	---	1.28E+07	2.4E+02	2.4E+01	---	1.58E+07	3.0E+02	3.0E+01	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**5.60E+03**	**1.1E-01**	**1.1E-02**	---	**8.94E+03**	**1.7E-01**	**1.7E-02**	---	**1.37E+04**	**2.6E-01**	**2.6E-02**	---	**5.64E+03**	**1.1E-01**	**1.1E-02**	---	**6.42E+03**	**1.2E-01**	**1.2E-02**	---	**7.92E+03**	**1.5E-01**	**1.5E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	5.60E+03	8.9E+00	2.8E+00	5.62E+03	8.94E+03	1.4E+01	4.4E+00	8.96E+03	1.37E+04	2.2E+01	6.8E+00	1.38E+04	5.64E+03	8.9E+00	2.8E+00	5.65E+03	6.42E+03	1.0E+01	3.2E+00	6.44E+03	7.92E+03	1.3E+01	3.9E+00	7.93E+03	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**6.89E+03**	**3.7E+01**	**2.5E-02**	---	**1.10E+04**	**5.9E+01**	**4.0E-02**	---	**1.69E+04**	**9.1E+01**	**6.2E-02**	---	**6.94E+03**	**3.7E+01**	**2.6E-02**	---	**7.90E+03**	**4.3E+01**	**2.9E-02**	---	**9.74E+03**	**5.2E+01**	**3.6E-02**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	6.89E+03	3.1E+03	6.7E+00	1.00E+04	1.10E+04	5.0E+03	1.1E+01	1.60E+04	1.69E+04	7.6E+03	1.6E+01	2.46E+04	6.94E+03	3.1E+03	6.7E+00	1.01E+04	7.90E+03	3.6E+03	7.7E+00	1.15E+04	9.74E+03	4.4E+03	9.5E+00	1.42E+04	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	*6.25E+03*	*2.8E+03*	*6.1E+00*	*9.09E+03*	*9.98E+03*	*4.5E+03*	*9.7E+00*	*1.45E+04*	*1.53E+04*	*6.9E+03*	*1.5E+01*	*2.23E+04*	*6.29E+03*	*2.8E+03*	*6.1E+00*	*9.15E+03*	*7.17E+03*	*3.2E+03*	*7.0E+00*	*1.04E+04*	*8.84E+03*	*4.0E+03*	*8.6E+00*	*1.28E+04*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/(ton)]*

7/20/2023

EMISSION SOURCES

EMISSION SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
Rolling Mill IGS Boiler M2349 (DX)	---	3.69
Bar Mill IGS Boiler (DX)	---	2.30

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	4.00E+07	4.00E+07	4.00E+07	4.00E+07	4.00E+07	4.00E+07	*YEARLY ANNUAL = (Boilers are constantly operating)* *PROJECTED = Average {Actual Annual NG Usage values for 2018 - 2022}.*
Actual Annual Natural Gas Usage (MMBtu/yr) =	4.11E+04	4.11E+04	4.12E+04	4.11E+04	4.11E+04	4.11E+04	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.10E+06	3.17E+04	1.3E+01	3.77E+06	1.11E+06	3.17E+04	1.3E+01	3.77E+06	1.11E+06	3.17E+04	1.3E+01	3.78E+06	1.11E+06	3.17E+04	1.3E+01	3.78E+06	1.11E+06	3.17E+04	1.3E+01	3.77E+06	1.11E+06	3.17E+04	1.27E+01	3.77E+06	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**5.52E+02**	**1.58E+01**	**6.3E-03**	*1.89E+03*	**5.53E+02**	**1.58E+01**	**6.3E-03**	*1.89E+03*	**5.53E+02**	**1.59E+01**	**6.3E-03**	*1.89E+03*	**5.53E+02**	**1.59E+01**	**6.3E-03**	*1.89E+03*	**5.53E+02**	**1.59E+01**	**6.3E-03**	*1.89E+03*	**5.53E+02**	**1.59E+01**	**6.3E-03**	*1.89E+03*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**5.52E+02**	**1.33E+03**	**1.67E+00**	**1.88E+03**	**5.53E+02**	**1.33E+03**	**1.67E+00**	**1.89E+03**	**5.53E+02**	**1.33E+03**	**1.68E+00**	**1.89E+03**	**5.53E+02**	**1.33E+03**	**1.67E+00**	**1.89E+03**	**5.53E+02**	**1.33E+03**	**1.67E+00**	**1.89E+03**	**5.53E+02**	**1.33E+03**	**1.67E+00**	**1.89E+03**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1 using Natural Gas.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Combustion of Natural Gas by DX Sources

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	4.80E+06	9.0E+01	9.0E+00	---	4.80E+06	9.0E+01	9.0E+00	---	4.80E+06	9.1E+01	9.1E+00	---	4.80E+06	9.1E+01	9.1E+00	---	4.80E+06	9.0E+01	9.0E+00	---	4.80E+06	9.0E+01	9.0E+00	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.40E+03**	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.40E+03**	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.41E+03**	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.41E+03**	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.41E+03**	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.41E+03**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from DX Sources

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	**2.96E+03**	**1.6E+01**	**1.1E-02**	---	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**2.95E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	**2.95E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	**2.96E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	**2.95E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	**2.95E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	**2.95E+03**	**1.3E+03**	**2.9E+00**	**4.29E+03**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.89E+03***	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.89E+03***	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.90E+03***	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.90E+03***	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.89E+03***	***2.68E+03***	***1.2E+03***	***2.6E+00***	***3.89E+03***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/(ton)]*

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-5: CALCULATIONS FOR ACTUAL GHG EMISSIONS - OTHER FACILITY COMBUSTION SOURCES FIRING NATURAL GAS

EMISSION SOURCES

OTHER FACILITY COMBUSTION SOURCES FIRING NATURAL GAS
Other NG Combustion Sources

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM OTHER SOURCES FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	1.51E+08	1.48E+08	1.32E+08	3.17E+08	3.09E+08	3.66E+08	*YEARLY ANNUAL = (Total Facility NG Usage, scf/yr) - (Total NG Usage by Boilers, scf/yr) - (Total NG Usage by Cake Furnace, scf/yr) - (Total NG Usage by Units Generating DX, scf/yr)* *PROJECTED = (Total NG Usage for 2022, scf/yr) + (57,475,200 scf/yr)* *NOTE: Project expected to result in an increased usage of 9,574,900 scf/yr of NG from all sources excluding Cake Furnace.*
Actual Annual Natural Gas Usage (MMBtu/yr) =	1.55E+05	1.52E+05	1.36E+05	3.26E+05	3.18E+05	3.77E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

2.31E+05

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	4.17E+06	1.20E+05	4.8E+01	1.42E+07	4.09E+06	1.17E+05	4.7E+01	1.40E+07	3.67E+06	1.05E+05	4.2E+01	1.25E+07	8.76E+06	2.51E+05	1.0E+02	2.99E+07	8.55E+06	2.45E+05	9.8E+01	2.92E+07	1.01E+07	2.91E+05	1.2E+02	3.46E+07	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**2.09E+03**	**5.98E+01**	**2.4E-02**	*7.12E+03*	**2.05E+03**	**5.87E+01**	**2.3E-02**	*6.99E+03*	**1.83E+03**	**5.26E+01**	**2.1E-02**	*6.26E+03*	**4.38E+03**	**1.26E+02**	**5.0E-02**	*1.50E+04*	**4.27E+03**	**1.23E+02**	**4.9E-02**	*1.46E+04*	**5.07E+03**	**1.45E+02**	**5.8E-02**	*1.73E+04*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	2.09E+03	5.02E+03	6.32E+00	7.12E+03	2.05E+03	4.93E+03	6.20E+00	6.98E+03	1.83E+03	4.41E+03	5.55E+00	6.25E+03	4.38E+03	1.05E+04	1.33E+01	1.49E+04	4.27E+03	1.03E+04	1.29E+01	1.46E+04	5.07E+03	1.22E+04	1.53E+01	1.73E+04	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.81E+07	3.41E+02	3.41E+01	---	1.78E+07	3.4E+02	3.4E+01	---	1.59E+07	3.0E+02	3.0E+01	---	3.80E+07	7.2E+02	7.2E+01	---	3.71E+07	7.0E+02	7.0E+01	---	4.40E+07	8.3E+02	8.3E+01	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**9.05E+03**	**1.7E-01**	**1.7E-02**	---	**8.89E+03**	**1.7E-01**	**1.7E-02**	---	**7.96E+03**	**1.5E-01**	**1.5E-02**	---	**1.90E+04**	**3.6E-01**	**3.6E-02**	---	**1.86E+04**	**3.5E-01**	**3.5E-02**	---	**2.20E+04**	**4.1E-01**	**4.1E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	9.05E+03	1.4E+01	4.5E+00	9.07E+03	8.89E+03	1.4E+01	4.4E+00	8.91E+03	7.96E+03	1.3E+01	4.0E+00	7.97E+03	1.90E+04	3.0E+01	9.5E+00	1.91E+04	1.86E+04	2.9E+01	9.2E+00	1.86E+04	2.20E+04	3.5E+01	1.1E+01	2.20E+04	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Facility-wide Use of Natural Gas

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**1.11E+04**	**6.0E+01**	**4.1E-02**	---	**1.09E+04**	**5.9E+01**	**4.0E-02**	---	**9.79E+03**	**5.3E+01**	**3.6E-02**	---	**2.34E+04**	**1.3E+02**	**8.6E-02**	---	**2.28E+04**	**1.2E+02**	**8.4E-02**	---	**2.71E+04**	**1.5E+02**	**1.0E-01**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	1.11E+04	5.0E+03	1.1E+01	1.62E+04	1.09E+04	4.9E+03	1.1E+01	1.59E+04	9.79E+03	4.4E+03	9.5E+00	1.42E+04	2.34E+04	1.1E+04	2.3E+01	3.40E+04	2.28E+04	1.0E+04	2.2E+01	3.32E+04	2.71E+04	1.2E+04	2.6E+01	3.93E+04	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	*1.01E+04*	*4.6E+03*	*9.8E+00*	*1.47E+04*	*9.92E+03*	*4.5E+03*	*9.6E+00*	*1.44E+04*	*8.88E+03*	*4.0E+03*	*8.6E+00*	*1.29E+04*	*2.12E+04*	*9.6E+03*	*2.1E+01*	*3.08E+04*	*2.07E+04*	*9.4E+03*	*2.0E+01*	*3.01E+04*	*2.46E+04*	*1.1E+04*	*2.4E+01*	*3.57E+04*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

PROJECT IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-6: CALCULATIONS FOR ACTUAL GHG EMISSIONS - EMERGENCY ENGINES < 600 hP FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINE < 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (POWERHOUSE - 1960 GM)	<<exempt>>	**168**

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Nominal Power Output for Emergency Engine (MMBtu/hr) =	0.43	*= (Nominal Power Output for Emergency Engine, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	*Estimated*
Est. Diesel Usage (MMBtu/hr) =	1.1	*= (Nominal Power Output for Emergency Engine, MMBtu/hr) / (Engine Efficiency)*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Meter Reading at End of Prior Year (hrs)	885.2	923.8	978.8	1005.1	1031.4		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
Meter Reading at End of Year (hrs)	923.8	978.8	1005.1	1031.4	1055.7		
Actual No. of Operating Hours (hrs/yr) =	38.6	55.0	26.3	26.3	24.3	34.1	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
Est. Diesel Usage (MMBtu/yr) =	4.1E+01	5.9E+01	2.8E+01	2.8E+01	2.6E+01	3.6E+01	*= (Est. Diesel Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*

1 ACTUAL - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.33E+03	1.08E+01	2.3E-02	2.24E+03	1.89E+03	1.54E+01	3.2E-02	3.19E+03	9.04E+02	7.37E+00	1.5E-02	1.53E+03	9.04E+02	7.37E+00	1.5E-02	1.53E+03	8.35E+02	6.81E+00	1.4E-02	1.41E+03	1.17E+03	9.55E+00	2.0E-02	1.98E+03	*= (Est. Diesel Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**6.63E-01**	**5.41E-03**	**1.1E-05**	*1.12E+00*	**9.45E-01**	**7.70E-03**	**1.6E-05**	*1.59E+00*	**4.52E-01**	**3.68E-03**	**7.7E-06**	*7.63E-01*	**4.52E-01**	**3.68E-03**	**7.7E-06**	*7.63E-01*	**4.17E-01**	**3.40E-03**	**7.1E-06**	*7.05E-01*	**5.86E-01**	**4.78E-03**	**1.0E-05**	*9.89E-01*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**6.63E-01**	**4.54E-01**	**3.0E-03**	**1.12E+00**	**9.45E-01**	**6.47E-01**	**4.3E-03**	**1.60E+00**	**4.52E-01**	**3.09E-01**	**2.0E-03**	**7.63E-01**	**4.52E-01**	**3.09E-01**	**2.0E-03**	**7.63E-01**	**4.17E-01**	**2.86E-01**	**1.9E-03**	**7.05E-01**	**5.86E-01**	**4.01E-01**	**2.6E-03**	**9.90E-01**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 ACTUAL - Direct GHG Emissions from Combustion of Diesel by Emergency Engines

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	6.71E+03	2.7E-01	5.4E-02	---	9.56E+03	3.9E-01	7.8E-02	---	4.57E+03	1.9E-01	3.7E-02	---	4.57E+03	1.9E-01	3.7E-02	---	4.22E+03	1.7E-01	3.4E-02	---	5.93E+03	2.4E-01	4.8E-02	---	*= (Est. Diesel Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**3.36E+00**	**1.4E-04**	**2.7E-05**	---	**4.78E+00**	**1.9E-04**	**3.9E-05**	---	**2.29E+00**	**9.3E-05**	**1.9E-05**	---	**2.29E+00**	**9.3E-05**	**1.9E-05**	---	**2.11E+00**	**8.6E-05**	**1.7E-05**	---	**2.96E+00**	**1.2E-04**	**2.4E-05**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**3.36E+00**	**1.1E-02**	**7.2E-03**	**3.37E+00**	**4.78E+00**	**1.6E-02**	**1.0E-02**	**4.81E+00**	**2.29E+00**	**7.8E-03**	**4.9E-03**	**2.30E+00**	**2.29E+00**	**7.8E-03**	**4.9E-03**	**2.30E+00**	**2.11E+00**	**7.2E-03**	**4.5E-03**	**2.12E+00**	**2.96E+00**	**1.0E-02**	**6.3E-03**	**2.98E+00**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 ACTUAL - Total GHG Emissions from Use of Diesel Oil by Emergency Engines

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**4.02E+00**	**5.5E-03**	**3.9E-05**	---	**5.73E+00**	**7.9E-03**	**5.5E-05**	---	**2.74E+00**	**3.8E-03**	**2.6E-05**	---	**2.74E+00**	**3.8E-03**	**2.6E-05**	---	**2.53E+00**	**3.5E-03**	**2.4E-05**	---	**3.55E+00**	**4.9E-03**	**3.4E-05**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**4.02E+00**	**4.7E-01**	**1.0E-02**	**4.49E+00**	**5.73E+00**	**6.6E-01**	**1.5E-02**	**6.40E+00**	**2.74E+00**	**3.2E-01**	**6.9E-03**	**3.06E+00**	**2.74E+00**	**3.2E-01**	**6.9E-03**	**3.06E+00**	**2.53E+00**	**2.9E-01**	**6.4E-03**	**2.83E+00**	**3.55E+00**	**4.1E-01**	**9.0E-03**	**3.97E+00**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	***3.65E+00***	***4.2E-01***	***9.2E-03***	***4.08E+00***	***5.19E+00***	***6.0E-01***	***1.3E-02***	***5.81E+00***	***2.48E+00***	***2.9E-01***	***6.3E-03***	***2.78E+00***	***2.48E+00***	***2.9E-01***	***6.3E-03***	***2.78E+00***	***2.30E+00***	***2.7E-01***	***5.8E-03***	***2.57E+00***	***3.22E+00***	***3.7E-01***	***8.2E-03***	***3.60E+00***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

PROJECT IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-7: CALCULATIONS FOR ACTUAL GHG EMISSIONS - EMERGENCY ENGINES > 600 hP FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINE < 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (SOAP HOUSE - 1999 CATERPILLAR)	<<exempt>>	**2,680**

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Nominal Power Output for Emergency Engine (MMBtu/hr) =	6.82	*= (Nominal Power Output for Emergency Engine, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	*Estimated*
Est. Diesel Usage (MMBtu/hr) =	17.0	*= (Nominal Power Output for Emergency Engine, MMBtu/hr) / (Engine Efficiency)*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Meter Reading at End of Prior Year (hrs)	388.1	404.3	421.5	436.6	450		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
Meter Reading at End of Year (hrs)	404.3	421.5	436.6	450	450.3		
Actual No. of Operating Hours (hrs/yr) =	16.2	17.2	15.1	13.4	0.3	12.4	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
Est. Diesel Usage (MMBtu/yr) =	2.76E+02	2.93E+02	2.57E+02	2.28E+02	5.11E+00	2.12E+02	*= (Est. Diesel Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*

1 ACTUAL - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*
Upstream Emissions (lb/yr)	8.88E+03	7.24E+01	1.5E-01	1.50E+04	9.43E+03	7.68E+01	1.6E-01	1.59E+04	8.28E+03	6.75E+01	1.4E-01	1.40E+04
Upstream Emissions (ton/yr)	**4.44E+00**	**3.62E-02**	**7.6E-05**	*7.49E+00*	**4.71E+00**	**3.84E-02**	**8.1E-05**	*7.95E+00*	**4.14E+00**	**3.37E-02**	**7.1E-05**	*6.98E+00*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Upstream Emissions as CO2e (tons/yr)	**4.44E+00**	**3.04E+00**	**2.0E-02**	**7.50E+00**	**4.71E+00**	**3.23E+00**	**2.1E-02**	**7.96E+00**	**4.14E+00**	**2.83E+00**	**1.9E-02**	**6.99E+00**

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	7.34E+03	5.99E+01	1.3E-01	1.24E+04	1.64E+02	1.34E+00	2.8E-03	2.77E+02	6.82E+03	5.56E+01	1.2E-01	1.15E+04	*= (Est. Diesel Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**3.67E+00**	**2.99E-02**	**6.3E-05**	*6.20E+00*	**8.22E-02**	**6.70E-04**	**1.4E-06**	*1.39E-01*	**3.41E+00**	**2.78E-02**	**5.8E-05**	*5.75E+00*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**3.67E+00**	**2.51E+00**	**1.7E-02**	**6.20E+00**	**8.22E-02**	**5.63E-02**	**3.7E-04**	**1.39E-01**	**3.41E+00**	**2.33E+00**	**1.5E-02**	**5.76E+00**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 ACTUAL - Direct GHG Emissions from Combustion of Diesel by Emergency Engines

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---
Combustion Emissions (lb/yr)	4.49E+04	1.8E+00	3.6E-01	---	4.77E+04	1.9E+00	3.9E-01	---	4.19E+04	1.7E+00	3.4E-01	---
Combustion Emissions (ton/yr)	**2.25E+01**	**9.1E-04**	**1.8E-04**	---	**2.39E+01**	**9.7E-04**	**1.9E-04**	---	**2.09E+01**	**8.5E-04**	**1.7E-04**	---
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Combustion Emissions as CO2e (tons/yr)	**2.25E+01**	**7.7E-02**	**4.8E-02**	**2.26E+01**	**2.39E+01**	**8.1E-02**	**5.1E-02**	**2.40E+01**	**2.09E+01**	**7.1E-02**	**4.5E-02**	**2.11E+01**

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	3.72E+04	1.5E+00	3.0E-01	---	8.32E+02	3.4E-02	6.7E-03	---	3.45E+04	1.4E+00	2.8E-01	---	*= (Est. Diesel Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**1.86E+01**	**7.5E-04**	**1.5E-04**	---	**4.16E-01**	**1.7E-05**	**3.4E-06**	---	**1.73E+01**	**7.0E-04**	**1.4E-04**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**1.86E+01**	**6.3E-02**	**4.0E-02**	**1.87E+01**	**4.16E-01**	**1.4E-03**	**8.9E-04**	**4.18E-01**	**1.73E+01**	**5.9E-02**	**3.7E-02**	**1.73E+01**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 ACTUAL - Total GHG Emissions from Use of Diesel Oil by Emergency Engines

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Total Emissions (tons/yr)	**2.69E+01**	**3.7E-02**	**2.6E-04**	---	**2.86E+01**	**3.9E-02**	**2.7E-04**	---	**2.51E+01**	**3.5E-02**	**2.4E-04**	---
Total Emissions as CO2e (tons/yr)	**2.69E+01**	**3.1E+00**	**6.8E-02**	**3.01E+01**	**2.86E+01**	**3.3E+00**	**7.2E-02**	**3.19E+01**	**2.51E+01**	**2.9E+00**	**6.4E-02**	**2.80E+01**
Total Emissions as CO2e (metric tonnes/yr)	***2.44E+01***	***2.8E+00***	***6.2E-02***	***2.73E+01***	***2.59E+01***	***3.0E+00***	***6.6E-02***	***2.90E+01***	***2.28E+01***	***2.6E+00***	***5.8E-02***	***2.54E+01***

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**2.23E+01**	**3.1E-02**	**2.1E-04**	---	**4.98E-01**	**6.9E-04**	**4.8E-06**	---	**2.07E+01**	**2.8E-02**	**2.0E-04**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/*
Total Emissions as CO2e (tons/yr)	**2.23E+01**	**2.6E+00**	**5.6E-02**	**2.49E+01**	**4.98E-01**	**5.8E-02**	**1.3E-03**	**5.57E-01**	**2.07E+01**	**2.4E+00**	**5.2E-02**	**2.31E+01**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG*
Total Emissions as CO2e (metric tonnes/yr)	***2.02E+01***	***2.3E+00***	***5.1E-02***	***2.26E+01***	***4.52E-01***	***5.2E-02***	***1.1E-03***	***5.05E-01***	***1.87E+01***	***2.2E+00***	***4.7E-02***	***2.10E+01***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

EMISSION SOURCES

	NATURAL GAS FIRED EMERGENCY ENGINES	EMISSION SOURCE ID	hP	*COMMENTS*
NG-34	EMERGENCY GENERATOR (MAIN OFFICE - 2004 GENERAC)	<<exempt>>	34	*Existing emergency generator.*
NG-94	EMERGENCY GENERATOR (CAST SHOP)	<<exempt>>	94	*Replaced in 2023 by new 335 hP natural gas fired engine (listed immediately below).*
NG-335	EMERGENCY GENERATOR (CAST SHOP - 2023 GENERAC)	<<exempt>>	335	*Replaces existing 94 hP natural gas fired engine (listed immediately above).*

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM EMERGENCY ENGINES FIRING NATURAL GAS

0 Process Information

	NG-34	NG-94 (OLD)	NG-335 (NEW)	*COMMENTS*
Nominal Power Output for Emergency Engine (MMBtu/hr) =	0.086	0.24	0.85	*= (Nominal Power Output for Emergency Engine, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	40%	40%	*Estimated*
Est. Natural Gas Usage (MMBtu/hr) =	0.22	0.60	2.13	*= (Nominal Power Output for Emergency Engine, MMBtu/hr) / (Engine Efficiency)*

		2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
NG-34 (MAIN)	Meter Reading at End of Prior Year (hrs)		15.5	49.6	70.6	92		
	Meter Reading at End of Year (hrs)		49.6	70.6	92	104.4		
	Actual No. of Operating Hours (hrs/yr) =	25.5	34.1	21	21.4	12.4	22.9	*NOTE: In mid-2018, a new hour meter was installed on NG-34. The actual no. of operating hours was calclated based on the two meters used in 2018. YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs) PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
	Est. Natural Gas Usage (MMBtu/yr) =	5.5E+00	7.4E+00	4.5E+00	4.6E+00	2.7E+00	4.9E+00	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
NG-94 (CAST) (OLD)	Meter Reading at End of Prior Year (hrs)	144	146	154	156	166		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
	Meter Reading at End of Year (hrs)	146	154	156	166	169		
	Actual No. of Operating Hours (hrs/yr) =	2	8	2	10	3	0	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs) PROJECTED = 0 (Engine to be replaced by NG-335)*
	Est. Natural Gas Usage (MMBtu/yr) =	1.2E+00	4.8E+00	1.2E+00	6.0E+00	1.8E+00	0.0E+00	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
NG-335 (CAST) (NEW)	Actual No. of Operating Hours (hrs/yr) =	0	0	0	0	0	10	
	Est. Natural Gas Usage (MMBtu/yr) =	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.1E+01	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
ALL ENGINES	TOTAL Est. Natural Gas Usage (MMBtu/yr) =	6.7E+00	1.2E+01	5.7E+00	1.1E+01	4.5E+00	2.6E+01	

1 ACTUAL - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	2018 CO_2	2018 CH_4	2018 N_2O	2018 TOTAL CO2e (20 yr GWP)	2019 CO_2	2019 CH_4	2019 N_2O	2019 TOTAL CO2e (20 yr GWP)	2020 CO_2	2020 CH_4	2020 N_2O	2020 TOTAL CO2e (20 yr GWP)
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*
Upstream Emissions (lb/yr)	1.80E+02	5.17E+00	2.1E-03	6.16E+02	3.27E+02	9.37E+00	3.7E-03	1.12E+03	1.54E+02	4.42E+00	1.8E-03	5.27E+02
Upstream Emissions (ton/yr)	**9.02E-02**	**2.59E-03**	**1.0E-06**	*3.08E-01*	**1.63E-01**	**4.69E-03**	**1.9E-06**	*5.58E-01*	**7.71E-02**	**2.21E-03**	**8.8E-07**	*2.63E-01*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---
Upstream Emissions as CO2e (tons/yr)	**9.02E-02**	**2.17E-01**	**2.7E-04**	**3.08E-01**	**1.63E-01**	**3.94E-01**	**4.9E-04**	**5.58E-01**	**7.71E-02**	**1.86E-01**	**2.3E-04**	**2.63E-01**

	2021 CO_2	2021 CH_4	2021 N_2O	2021 TOTAL CO2e (20 yr GWP)	2022 CO_2	2022 CH_4	2022 N_2O	2022 TOTAL CO2e (20 yr GWP)	PROJECTED CO_2	PROJECTED CH_4	PROJECTED N_2O	PROJECTED TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	2.85E+02	8.18E+00	3.3E-03	9.73E+02	1.20E+02	3.45E+00	1.4E-03	4.11E+02	7.06E+02	2.02E+01	8.1E-03	2.41E+03	*= (Est. Natural Gas Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**1.43E-01**	**4.09E-03**	**1.6E-06**	*4.87E-01*	**6.02E-02**	**1.72E-03**	**6.9E-07**	*2.05E-01*	**3.53E-01**	**1.01E-02**	**4.0E-06**	*1.20E+00*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	
Upstream Emissions as CO2e (tons/yr)	**1.43E-01**	**3.43E-01**	**4.3E-04**	**4.86E-01**	**6.02E-02**	**1.45E-01**	**1.8E-04**	**2.05E-01**	**3.53E-01**	**8.50E-01**	**1.1E-03**	**1.20E+00**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 ACTUAL - Direct GHG Emissions from Combustion of Natural Gas by Emergency Engines

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	7.83E+02	1.5E-02	1.5E-03	---	1.42E+03	2.7E-02	2.7E-03	---	6.70E+02	1.3E-02	1.3E-03	---	1.24E+03	2.3E-02	2.3E-03	---	5.22E+02	9.8E-03	9.8E-04	---	3.06E+03	5.8E-02	5.8E-03	---	*= (Est. Natural Gas Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**3.92E-01**	**7.4E-06**	**7.4E-07**	---	**7.10E-01**	**1.3E-05**	**1.3E-06**	---	**3.35E-01**	**6.3E-06**	**6.3E-07**	---	**6.19E-01**	**1.2E-05**	**1.2E-06**	---	**2.61E-01**	**4.9E-06**	**4.9E-07**	---	**1.53E+00**	**2.9E-05**	**2.9E-06**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	3.92E-01	6.2E-04	1.9E-04	3.92E-01	7.10E-01	1.1E-03	3.5E-04	7.11E-01	3.35E-01	5.3E-04	1.7E-04	3.36E-01	6.19E-01	9.8E-04	3.1E-04	6.20E-01	2.61E-01	4.1E-04	1.3E-04	2.62E-01	1.53E+00	2.4E-03	7.6E-04	1.54E+00	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 ACTUAL - Total GHG Emissions from Use of Natural Gas by Emergency Engines

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**4.82E-01**	**2.6E-03**	**1.8E-06**	---	**8.73E-01**	**4.7E-03**	**3.2E-06**	---	**4.12E-01**	**2.2E-03**	**1.5E-06**	---	**7.62E-01**	**4.1E-03**	**2.8E-06**	---	**3.21E-01**	**1.7E-03**	**1.2E-06**	---	**1.89E+00**	**1.0E-02**	**6.9E-06**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	4.82E-01	2.2E-01	4.7E-04	7.00E-01	8.73E-01	3.9E-01	8.5E-04	1.27E+00	4.12E-01	1.9E-01	4.0E-04	5.99E-01	7.62E-01	3.4E-01	7.4E-04	1.11E+00	3.21E-01	1.5E-01	3.1E-04	4.67E-01	1.89E+00	8.5E-01	1.8E-03	2.74E+00	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	*4.37E-01*	*2.0E-01*	*4.2E-04*	*6.35E-01*	*7.92E-01*	*3.6E-01*	*7.7E-04*	*1.15E+00*	*3.74E-01*	*1.7E-01*	*3.6E-04*	*5.43E-01*	*6.91E-01*	*3.1E-01*	*6.7E-04*	*1.00E+00*	*2.92E-01*	*1.3E-01*	*2.8E-04*	*4.24E-01*	*1.71E+00*	*7.7E-01*	*1.7E-03*	*2.49E+00*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/*

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-9: CALCULATIONS FOR ACTUAL EMISSIONS OF CO-POLLUTANTS - BOILERS FIRING NATURAL GAS

EMISSION SOURCES

NATURAL GAS FIRED SOURCES	EMISSION SOURCE ID
BOILER 1	00BR1
BOILER 2	00BR2
BOILER 3	00BR3

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM BOILERS FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	1.953E+08	2.250E+08	2.411E+08	1.956E+08	9.450E+07	2.142E+08	*YEARLY ANNUAL = Values from facility flow meters.* *PROJECTED = Average {Actual Annual NG Usage values for 2018 - 2021}.* ***NOTE: Does not include reductions expected to result from Boiler control upgrade project.***
Actual Annual Natural Gas Usage (MMBtu/yr) =	2.007E+05	2.314E+05	2.481E+05	2.014E+05	9.721E+04	2.204E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by Boilers

	2018 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.4E-01	1.5E+01	4.1E-01	1.2E-01	6.7E-01	3.5E+02	3.9E-02	2.4E-03	2.2E-01	2.8E-01	1.7E-02	1E-01	7.5E-02	5.1E-02	4.1E-01	4.7E-03	**3.7E+02**
Emissions (ton/yr)	**6.9E-05**	**7.4E-03**	**2.1E-04**	**6.0E-05**	**3.3E-04**	**1.8E-01**	**2.0E-05**	**1.2E-06**	**1.1E-04**	**1.4E-04**	**8.3E-06**	**5E-05**	**3.7E-05**	**2.6E-05**	**2.1E-04**	**2.4E-06**	**1.9E-01**

	2019 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.6E-01	1.7E+01	4.8E-01	1.4E-01	7.7E-01	4.1E+02	4.5E-02	2.7E-03	2.5E-01	3.2E-01	1.9E-02	1E-01	8.6E-02	5.9E-02	4.8E-01	5.4E-03	**4.3E+02**
Emissions (ton/yr)	**7.9E-05**	**8.5E-03**	**2.4E-04**	**6.9E-05**	**3.9E-04**	**2.0E-01**	**2.3E-05**	**1.4E-06**	**1.2E-04**	**1.6E-04**	**9.5E-06**	**6E-05**	**4.3E-05**	**2.9E-05**	**2.4E-04**	**2.7E-06**	**2.1E-01**

	2020 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.7E-01	1.8E+01	5.1E-01	1.5E-01	8.3E-01	4.4E+02	4.9E-02	2.9E-03	2.7E-01	3.4E-01	2.0E-02	1E-01	9.2E-02	6.3E-02	5.1E-01	5.8E-03	**4.6E+02**
Emissions (ton/yr)	**8.5E-05**	**9.1E-03**	**2.6E-04**	**7.4E-05**	**4.1E-04**	**2.2E-01**	**2.4E-05**	**1.5E-06**	**1.3E-04**	**1.7E-04**	**1.0E-05**	**6E-05**	**4.6E-05**	**3.2E-05**	**2.6E-04**	**2.9E-06**	**2.3E-01**

	2021 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.4E-01	1.5E+01	4.1E-01	1.2E-01	6.7E-01	3.6E+02	3.9E-02	2.4E-03	2.2E-01	2.8E-01	1.7E-02	1E-01	7.5E-02	5.1E-02	4.1E-01	4.7E-03	**3.7E+02**
Emissions (ton/yr)	**6.9E-05**	**7.4E-03**	**2.1E-04**	**6.0E-05**	**3.4E-04**	**1.8E-01**	**2.0E-05**	**1.2E-06**	**1.1E-04**	**1.4E-04**	**8.3E-06**	**5E-05**	**3.8E-05**	**2.6E-05**	**2.1E-04**	**2.4E-06**	**1.9E-01**

	2022 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	6.6E-02	7.1E+00	2.0E-01	5.8E-02	3.2E-01	1.7E+02	1.9E-02	1.1E-03	1.0E-01	1.3E-01	8.0E-03	5E-02	3.6E-02	2.5E-02	2.0E-01	2.3E-03	**1.8E+02**
Emissions (ton/yr)	**3.3E-05**	**3.6E-03**	**1.0E-04**	**2.9E-05**	**1.6E-04**	**8.6E-02**	**9.5E-06**	**5.7E-07**	**5.2E-05**	**6.7E-05**	**4.0E-06**	**2E-05**	**1.8E-05**	**1.2E-05**	**1.0E-04**	**1.1E-06**	**9.0E-02**

	PROJECTED EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.5E-01	1.6E+01	4.5E-01	1.3E-01	7.3E-01	3.9E+02	4.3E-02	2.6E-03	2.4E-01	3.0E-01	1.8E-02	1E-01	8.2E-02	5.6E-02	4.5E-01	5.2E-03	**4.1E+02**
Emissions (ton/yr)	**7.5E-05**	**8.1E-03**	**2.3E-04**	**6.6E-05**	**3.7E-04**	**1.9E-01**	**2.2E-05**	**1.3E-06**	**1.2E-04**	**1.5E-04**	**9.1E-06**	**5E-05**	**4.1E-05**	**2.8E-05**	**2.3E-04**	**2.6E-06**	**2.0E-01**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by Boilers - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emissions (ton/yr)	**7.7E-05**	**8.3E-03**	**2.3E-04**	**6.7E-05**	**3.7E-04**	**2.0E-01**	**2.2E-05**	**1.3E-06**	**1.2E-04**	**1.5E-04**	**9.3E-06**	**5.5E-05**	**4.2E-05**	**2.9E-05**	**2.3E-04**	**2.6E-06**	**2.1E-01**

7/20/2023

EMISSION SOURCES

No. 6 FUEL OIL FIRED SOURCES	EMISSION SOURCE ID
BOILER 1	00BR1
BOILER 2	00BR2
BOILER 3	00BR3

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM BOILERS FIRING NO. 6 FUEL OIL

0 Process Information

HHV of No. 6 Oil (MMBtu/gal)	**0.150**	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1. NOTE: This value is higher than the HHV listed in New York State's "2022 GHG Report" (i.e., 0.091 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Actual Annual No. 6 Fuel Oil Usage (gal/yr) =	0	0	6.24E+03	5.29E+04	0	0.00E+00	*YEARLY ANNUAL = Values from facility flow meters. PROJECTED = 0 (The permit renewal application states that the facility will convert from No. 6 oil to No. 2 oil, and the three boilers will be operated as "gas-fired boilers" as defined under 40 CFR 63 Subpart JJJJJJ).*
Actual Annual No. 6 Fuel Oil Usage (MMBtu/yr) =	0.00E+00	0.00E+00	9.36E+02	7.93E+03	0.00E+00	0.00E+00	*= (Actual Annual No. 6 Fuel Oil Usage, MMBtu/yr) x (HHV of No. 6 Fuel Oil, MMBtu/gal)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from No. 6 Fuel Oil by Boilers

	2018 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions (ton/yr)	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

	2019 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions (ton/yr)	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

	2020 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	7.43E-03	2.06E-01	1.34E-03	7.05E-03	3.97E-04	3.87E-02	6.80E-04	3.28E-02	8.24E-03	1.74E-04	2.48E-03	5.28E-03	3.76E-02	9.43E-03	1.87E-02	7.05E-04	5.28E-01	4.26E-03	9.02E-01
Emissions (ton/yr)	**3.72E-06**	**1.03E-04**	**6.68E-07**	**3.53E-06**	**1.99E-07**	**1.94E-05**	**3.40E-07**	**1.64E-05**	**4.12E-06**	**8.68E-08**	**1.24E-06**	**2.64E-06**	**1.88E-05**	**4.71E-06**	**9.36E-06**	**3.53E-07**	**2.64E-04**	**2.13E-06**	**4.51E-04**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	2021 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	6.29E-02	1.74E+00	1.13E-02	5.97E-02	3.36E-03	3.28E-01	5.76E-03	2.78E-01	6.98E-02	1.47E-03	2.10E-02	4.47E-02	3.18E-01	7.98E-02	1.59E-01	5.97E-03	4.47E+00	3.61E-02	7.64E+00
Emissions (ton/yr)	**3.15E-05**	**8.72E-04**	**5.66E-06**	**2.99E-05**	**1.68E-06**	**1.64E-04**	**2.88E-06**	**1.39E-04**	**3.49E-05**	**7.35E-07**	**1.05E-05**	**2.23E-05**	**1.59E-04**	**3.99E-05**	**7.93E-05**	**2.99E-06**	**2.23E-03**	**1.81E-05**	**3.82E-03**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	2022 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions (ton/yr)	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	PROJECTED EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
Emission Factor (lb/MMBtu) [1]	7.94E-06	2.20E-04	1.43E-06	7.53E-06	4.24E-07	4.13E-05	7.27E-07	3.50E-05	8.80E-06	1.85E-07	2.65E-06	5.63E-06	4.01E-05	1.01E-05	2.00E-05	7.53E-07	5.63E-04	4.55E-06	---
Emissions (lb/yr)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions (ton/yr)	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section Section 1.3 ("Fuel Oil Combustion"), Tables 1.3-9 & 1.3-11.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from No. 6 Fuel Oil by Boilers - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Ethylbenzene	Toluene	Xylene	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																		
Emissions (ton/yr)	**1.76E-05**	**4.88E-04**	**3.16E-06**	**1.67E-05**	**9.40E-07**	**9.16E-05**	**1.61E-06**	**7.76E-05**	**1.95E-05**	**4.11E-07**	**5.88E-06**	**1.25E-05**	**8.89E-05**	**2.23E-05**	**4.43E-05**	**1.67E-06**	**1.25E-03**	**1.01E-05**	**2.13E-03**

7/20/2023

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-11: CALCULATIONS FOR ACTUAL EMISSIONS OF CO-POLLUTANTS - CAKE FURNACE FIRING NATURAL GAS

EMISSION SOURCES

EMISSION SOURCE FIRING NATURAL GAS	EMISSION SOURCE ID
Cake Furnace (1701 Walking Beam Furnace)	01701

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM OTHER SOURCES FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	9.3422E+07	1.4890E+08	2.2870E+08	9.3868E+07	1.0697E+08	1.3188E+08	*YEARLY ANNUAL = Values from facility flow meters.* *PROJECTED = (Total NG Usage for 2022, scf/yr) + (24,914,400 scf/yr)* *NOTE: PROJECTED reflects a 23.3% increase over 2022 .*
Actual Annual Natural Gas Usage (MMBtu/yr) =	9.6007E+04	1.5313E+05	2.3542E+05	9.6604E+04	1.1003E+05	1.3566E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by All Sources

	2018 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	6.6E-02	7.1E+00	2.0E-01	5.7E-02	3.2E-01	1.7E+02	1.9E-02	1.1E-03	1.0E-01	1.3E-01	7.9E-03	5E-02	3.6E-02	2.4E-02	2.0E-01	2.3E-03	**1.8E+02**
Emissions (ton/yr)	**3.3E-05**	**3.5E-03**	**9.9E-05**	**2.9E-05**	**1.6E-04**	**8.5E-02**	**9.4E-06**	**5.6E-07**	**5.2E-05**	**6.6E-05**	**4.0E-06**	**2E-05**	**1.8E-05**	**1.2E-05**	**9.9E-05**	**1.1E-06**	**8.9E-02**

	2019 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.0E-01	1.1E+01	3.2E-01	9.2E-02	5.1E-01	2.7E+02	3.0E-02	1.8E-03	1.7E-01	2.1E-01	1.3E-02	8E-02	5.7E-02	3.9E-02	3.2E-01	3.6E-03	**2.8E+02**
Emissions (ton/yr)	**5.2E-05**	**5.6E-03**	**1.6E-04**	**4.6E-05**	**2.6E-04**	**1.4E-01**	**1.5E-05**	**9.0E-07**	**8.3E-05**	**1.1E-04**	**6.3E-06**	**4E-05**	**2.9E-05**	**2.0E-05**	**1.6E-04**	**1.8E-06**	**1.4E-01**

	2020 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.6E-01	1.7E+01	4.8E-01	1.4E-01	7.8E-01	4.2E+02	4.6E-02	2.8E-03	2.5E-01	3.2E-01	1.9E-02	1E-01	8.8E-02	6.0E-02	4.8E-01	5.5E-03	**4.4E+02**
Emissions (ton/yr)	**8.0E-05**	**8.7E-03**	**2.4E-04**	**7.0E-05**	**3.9E-04**	**2.1E-01**	**2.3E-05**	**1.4E-06**	**1.3E-04**	**1.6E-04**	**9.7E-06**	**6E-05**	**4.4E-05**	**3.0E-05**	**2.4E-04**	**2.8E-06**	**2.2E-01**

2021 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs[2]
Emission Factor (lb/MMBtu)[1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	6.6E-02	7.1E+00	2.0E-01	5.8E-02	3.2E-01	1.7E+02	1.9E-02	1.1E-03	1.0E-01	1.3E-01	8.0E-03	5E-02	3.6E-02	2.5E-02	2.0E-01	2.3E-03	**1.8E+02**
Emissions (ton/yr)	**3.3E-05**	**3.6E-03**	**9.9E-05**	**2.9E-05**	**1.6E-04**	**8.5E-02**	**9.5E-06**	**5.7E-07**	**5.2E-05**	**6.6E-05**	**4.0E-06**	**2E-05**	**1.8E-05**	**1.2E-05**	**9.9E-05**	**1.1E-06**	**8.9E-02**

	2022 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs[2]
Emission Factor (lb/MMBtu)[1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	7.5E-02	8.1E+00	2.3E-01	6.6E-02	3.7E-01	1.9E+02	2.2E-02	1.3E-03	1.2E-01	1.5E-01	9.1E-03	5E-02	4.1E-02	2.8E-02	2.3E-01	2.6E-03	**2.0E+02**
Emissions (ton/yr)	**3.8E-05**	**4.0E-03**	**1.1E-04**	**3.3E-05**	**1.8E-04**	**9.7E-02**	**1.1E-05**	**6.5E-07**	**5.9E-05**	**7.6E-05**	**4.5E-06**	**3E-05**	**2.0E-05**	**1.4E-05**	**1.1E-04**	**1.3E-06**	**1.0E-01**

	PROJECTED EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs[2]
Emission Factor (lb/MMBtu)[1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	9.3E-02	1.0E+01	2.8E-01	8.1E-02	4.5E-01	2.4E+02	2.7E-02	1.6E-03	1.5E-01	1.9E-01	1.1E-02	7E-02	5.1E-02	3.5E-02	2.8E-01	3.2E-03	**2.5E+02**
Emissions (ton/yr)	**4.6E-05**	**5.0E-03**	**1.4E-04**	**4.1E-05**	**2.3E-04**	**1.2E-01**	**1.3E-05**	**8.0E-07**	**7.3E-05**	**9.3E-05**	**5.6E-06**	**3E-05**	**2.5E-05**	**1.7E-05**	**1.4E-04**	**1.6E-06**	**1.3E-01**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by All Sources - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs[2]
Emissions (ton/yr)	**5.7E-05**	**6.1E-03**	**1.7E-04**	**5.0E-05**	**2.8E-04**	**1.5E-01**	**1.6E-05**	**9.8E-07**	**9.0E-05**	**1.1E-04**	**6.8E-06**	**4E-05**	**3.1E-05**	**2.1E-05**	**1.7E-04**	**2.0E-06**	**1.5E-01**

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EMISSION SOURCES

EMISSION SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)	EMISSION SOURCE ID	MAXIMUM HEAT INPUT (MMBtu/hr)
Rolling Mill IGS Boiler M2349 (DX)	---	3.69
Bar Mill IGS Boiler (DX)	---	2.30

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM SOURCES FIRING NATURAL GAS (TO SUPPLY DX GAS)

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	4.00E+07	4.00E+07	4.00E+07	4.00E+07	4.00E+07	4.00E+07	*YEARLY ANNUAL = (Boilers are constantly operating)* *PROJECTED = Average {Actual Annual NG Usage values for 2018 - 2022}.*
Actual Annual Natural Gas Usage (MMBtu/yr) =	4.11E+04	4.11E+04	4.12E+04	4.11E+04	4.11E+04	4.11E+04	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Natural Gas by DX Sources

	2018 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	7.6E+01
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.8E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

	2019 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	7.6E+01
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

	2020 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	7.6E+01
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	2021 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	**7.6E+01**
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	2022 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	**7.6E+01**
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	PROJECTED EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.8E-02	3.0E+00	8.5E-02	2.5E-02	1.4E-01	7.3E+01	8.1E-03	4.8E-04	4.4E-02	5.6E-02	3.4E-03	2E-02	1.5E-02	1.0E-02	8.5E-02	9.7E-04	**7.6E+01**
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from DX by All Sources - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
Emissions (ton/yr)	**1.4E-05**	**1.5E-03**	**4.2E-05**	**1.2E-05**	**6.9E-05**	**3.6E-02**	**4.0E-06**	**2.4E-07**	**2.2E-05**	**2.8E-05**	**1.7E-06**	**1E-05**	**7.7E-06**	**5.2E-06**	**4.2E-05**	**4.8E-07**	**3.8E-02**

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EMISSION SOURCES

OTHER FACILITY COMBUSTION SOURCES FIRING NATURAL GAS
Other NG Combustion Sources

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM OTHER SOURCES FIRING NATURAL GAS

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02767E-03	1.02843E-03	1.02937E-03	1.02915E-03	1.02869E-03	1.02866E-03	*YEARLY AVERAGE = Average {Actual Heating values shown on monthly bills for annual period}* *PROJECTED = Average {Average Annual Heating Value of NG, MMBtu/scf}*
Actual Annual Natural Gas Usage (scf/yr) =	1.51E+08	1.48E+08	1.32E+08	3.17E+08	3.09E+08	3.66E+08	*YEARLY ANNUAL = (Total Facility NG Usage, scf/yr) - (Total NG Usage by Boilers, scf/yr) - (Total NG Usage by Cake Furnace, scf/yr) - (Total NG Usage by Units Generating DX, scf/yr)* *PROJECTED = (Total NG Usage for 2022, scf/yr) + (57,475,200 scf/yr)* *NOTE: Project expected to result in an increased usage of 9,574,900 scf/yr of NG from all sources excluding Cake Furnace.*
Actual Annual Natural Gas Usage (MMBtu/yr) =	1.55E+05	1.52E+05	1.36E+05	3.26E+05	3.18E+05	3.77E+05	*= (Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by All Sources

	2018 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.1E-01	1.1E+01	3.2E-01	9.3E-02	5.2E-01	2.7E+02	3.0E-02	1.8E-03	1.7E-01	2.1E-01	1.3E-02	8E-02	5.8E-02	4.0E-02	3.2E-01	3.7E-03	**2.9E+02**
Emissions (ton/yr)	**5.3E-05**	**5.7E-03**	**1.6E-04**	**4.6E-05**	**2.6E-04**	**1.4E-01**	**1.5E-05**	**9.1E-07**	**8.4E-05**	**1.1E-04**	**6.4E-06**	**4E-05**	**2.9E-05**	**2.0E-05**	**1.6E-04**	**1.8E-06**	**1.4E-01**

	2019 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	1.0E-01	1.1E+01	3.1E-01	9.1E-02	5.1E-01	2.7E+02	3.0E-02	1.8E-03	1.6E-01	2.1E-01	1.3E-02	7E-02	5.7E-02	3.9E-02	3.1E-01	3.6E-03	**2.8E+02**
Emissions (ton/yr)	**5.2E-05**	**5.6E-03**	**1.6E-04**	**4.6E-05**	**2.5E-04**	**1.3E-01**	**1.5E-05**	**9.0E-07**	**8.2E-05**	**1.0E-04**	**6.3E-06**	**4E-05**	**2.8E-05**	**1.9E-05**	**1.6E-04**	**1.8E-06**	**1.4E-01**

	2020 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	9.3E-02	1.0E+01	2.8E-01	8.2E-02	4.5E-01	2.4E+02	2.7E-02	1.6E-03	1.5E-01	1.9E-01	1.1E-02	7E-02	5.1E-02	3.5E-02	2.8E-01	3.2E-03	**2.5E+02**
Emissions (ton/yr)	**4.7E-05**	**5.0E-03**	**1.4E-04**	**4.1E-05**	**2.3E-04**	**1.2E-01**	**1.3E-05**	**8.0E-07**	**7.4E-05**	**9.4E-05**	**5.6E-06**	**3E-05**	**2.5E-05**	**1.7E-05**	**1.4E-04**	**1.6E-06**	**1.3E-01**

	2021 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.2E-01	2.4E+01	6.7E-01	1.9E-01	1.1E+00	5.7E+02	6.4E-02	3.8E-03	3.5E-01	4.5E-01	2.7E-02	2E-01	1.2E-01	8.3E-02	6.7E-01	7.7E-03	6.0E+02
Emissions (ton/yr)	**1.1E-04**	**1.2E-02**	**3.4E-04**	**9.7E-05**	**5.4E-04**	**2.9E-01**	**3.2E-05**	**1.9E-06**	**1.8E-04**	**2.2E-04**	**1.3E-05**	**8E-05**	**6.1E-05**	**4.2E-05**	**3.4E-04**	**3.8E-06**	**3.0E-01**

	2022 ACTUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.2E-01	2.3E+01	6.5E-01	1.9E-01	1.1E+00	5.6E+02	6.2E-02	3.7E-03	3.4E-01	4.4E-01	2.6E-02	2E-01	1.2E-01	8.1E-02	6.5E-01	7.5E-03	5.9E+02
Emissions (ton/yr)	**1.1E-04**	**1.2E-02**	**3.3E-04**	**9.5E-05**	**5.3E-04**	**2.8E-01**	**3.1E-05**	**1.9E-06**	**1.7E-04**	**2.2E-04**	**1.3E-05**	**8E-05**	**5.9E-05**	**4.1E-05**	**3.3E-04**	**3.7E-06**	**2.9E-01**

	PROJECTED EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.8E-07	7.4E-05	2.1E-06	6.0E-07	3.3E-06	1.8E-03	2.0E-07	1.2E-08	1.1E-06	1.4E-06	8.2E-08	5E-07	3.7E-07	2.5E-07	2.1E-06	2.4E-08	---
Emissions (lb/yr)	2.6E-01	2.8E+01	7.8E-01	2.3E-01	1.3E+00	6.7E+02	7.4E-02	4.4E-03	4.1E-01	5.2E-01	3.1E-02	2E-01	1.4E-01	9.6E-02	7.8E-01	8.9E-03	7.0E+02
Emissions (ton/yr)	**1.3E-04**	**1.4E-02**	**3.9E-04**	**1.1E-04**	**6.3E-04**	**3.3E-01**	**3.7E-05**	**2.2E-06**	**2.0E-04**	**2.6E-04**	**1.6E-05**	**9E-05**	**7.0E-05**	**4.8E-05**	**3.9E-04**	**4.4E-06**	**3.5E-01**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Natural Gas by All Sources - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	Formaldehyde	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emissions (ton/yr)	**7.9E-05**	**8.5E-03**	**2.4E-04**	**6.9E-05**	**3.9E-04**	**2.0E-01**	**2.3E-05**	**1.4E-06**	**1.2E-04**	**1.6E-04**	**9.5E-06**	**6E-05**	**4.3E-05**	**2.9E-05**	**2.4E-04**	**2.7E-06**	**2.1E-01**

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EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINE < 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (POWERHOUSE - 1960 GM)	<<exempt>>	**168**

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Nominal Power Output for Emergency Engine (MMBtu/hr) =	0.43	*= (Total Nominal Power Output for Emergency Engines, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	*Estimated*
Est. Diesel Usage (MMBtu/hr) =	1.1	*= (Total Nominal Power Output for All Emergency Engines, MMBtu/hr) / (Engine Efficiency)*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Meter Reading at End of Prior Year (hrs)	885.2	923.8	978.8	1005.1	1031.4		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
Meter Reading at End of Year (hrs)	923.8	978.8	1005.1	1031.4	1055.7		
Actual No. of Operating Hours (hrs/yr) =	38.6	55.0	26.3	26.3	24.3	34.1	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
Est. Diesel Usage (MMBtu/yr) =	4.1E+01	5.9E+01	2.8E+01	2.8E+01	2.6E+01	3.6E+01	*= (Est. Diesel Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines < 600 hP

	2018 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	6.93E-03	4.87E-02	3.85E-02	3.16E-02	3.50E-03	1.61E-03	3.82E-03	1.69E-02	1.18E-02	1.60E-01
Emissions (ton/yr)	**3.47E-06**	**2.43E-05**	**1.92E-05**	**1.58E-05**	**1.75E-06**	**8.06E-07**	**1.91E-06**	**8.43E-06**	**5.88E-06**	**7.99E-05**

	2019 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	9.88E-03	6.93E-02	5.48E-02	4.51E-02	4.98E-03	2.30E-03	5.44E-03	2.40E-02	1.67E-02	2.28E-01
Emissions (ton/yr)	**4.94E-06**	**3.47E-05**	**2.74E-05**	**2.25E-05**	**2.49E-06**	**1.15E-06**	**2.72E-06**	**1.20E-05**	**8.37E-06**	**1.14E-04**

	2020 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	4.72E-03	3.32E-02	2.62E-02	2.16E-02	2.38E-03	1.10E-03	2.60E-03	1.15E-02	8.01E-03	1.09E-01
Emissions (ton/yr)	**2.36E-06**	**1.66E-05**	**1.31E-05**	**1.08E-05**	**1.19E-06**	**5.49E-07**	**1.30E-06**	**5.75E-06**	**4.00E-06**	**5.44E-05**

	2021 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	4.72E-03	3.32E-02	2.62E-02	2.16E-02	2.38E-03	1.10E-03	2.60E-03	1.15E-02	8.01E-03	1.09E-01
Emissions (ton/yr)	**2.36E-06**	**1.66E-05**	**1.31E-05**	**1.08E-05**	**1.19E-06**	**5.49E-07**	**1.30E-06**	**5.75E-06**	**4.00E-06**	**5.44E-05**

	2022 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	4.36E-03	3.06E-02	2.42E-02	1.99E-02	2.20E-03	1.02E-03	2.40E-03	1.06E-02	7.40E-03	1.01E-01
Emissions (ton/yr)	**2.18E-06**	**1.53E-05**	**1.21E-05**	**9.96E-06**	**1.10E-06**	**5.08E-07**	**1.20E-06**	**5.31E-06**	**3.70E-06**	**5.03E-05**

	PROJECTED EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) [1]	1.68E-04	1.18E-03	9.33E-04	7.67E-04	8.48E-05	3.91E-05	9.25E-05	4.09E-04	2.85E-04	---
Emissions Diesel (lb/yr)	6.12E-03	4.30E-02	3.40E-02	2.79E-02	3.09E-03	1.42E-03	3.37E-03	1.49E-02	1.04E-02	1.41E-01
Emissions (ton/yr)	**3.06E-06**	**2.15E-05**	**1.70E-05**	**1.40E-05**	**1.54E-06**	**7.12E-07**	**1.69E-06**	**7.45E-06**	**5.19E-06**	**7.06E-05**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines < 600 hP - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)									
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	1,3-Butadiene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emissions (ton/yr)	**2.4E-06**	**1.7E-05**	**1.3E-05**	**1.1E-05**	**1.2E-06**	**5.5E-07**	**1.3E-06**	**5.7E-06**	**4.0E-06**	**5.4E-05**

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FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-15: CALCULATIONS FOR ACTUAL EMISSIONS OF CO-POLLUTANTS - EMERGENCY ENGINES > 600 HP FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED EMERGENCY ENGINE < 600 hP	EMISSION SOURCE ID	hP
EMERGENCY GENERATOR (SOAP HOUSE - 1999 CATERPILLAR)	<<exempt>>	**2,680**

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM EMERGENCY ENGINES FIRING DIESEL

0 Process Information

		COMMENTS
Nominal Power Output for Emergency Engine (MMBtu/hr) =	6.82	*= (Nominal Power Output for Emergency Engine, hP/hr) x [0.002544 MMBtu/hp/hr]*
Efficiency (%) =	40%	*Estimated*
Est. Diesel Usage (MMBtu/hr) =	17.0	*= (Nominal Power Output for Emergency Engine, MMBtu/hr) / (Engine Efficiency)*

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
Meter Reading at End of Prior Year (hrs)	388.1	404.3	421.5	436.6	450		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
Meter Reading at End of Year (hrs)	404.3	421.5	436.6	450	450.3		
Actual No. of Operating Hours (hrs/yr) =	16.2	17.2	15.1	13.4	0.3	12.4	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
Est. Diesel Usage (MMBtu/hr) =	276	293	257	228	5	212	*= (Est. Diesel Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines > 600 hP

	2018 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	5.84E-02	2.18E-02	2.14E-01	6.96E-03	3.59E-02	2.18E-03	7.76E-02	5.33E-02	**4.34E-01**
Emissions (ton/yr)	**2.92E-05**	**1.09E-05**	**1.07E-04**	**3.48E-06**	**1.79E-05**	**1.09E-06**	**3.88E-05**	**2.66E-05**	**2.17E-04**

	2019 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	6.20E-02	2.31E-02	2.28E-01	7.39E-03	3.81E-02	2.31E-03	8.24E-02	5.66E-02	**4.61E-01**
Emissions (ton/yr)	**3.10E-05**	**1.16E-05**	**1.14E-04**	**3.69E-06**	**1.91E-05**	**1.16E-06**	**4.12E-05**	**2.83E-05**	**2.31E-04**

	2020 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	5.44E-02	2.03E-02	2.00E-01	6.49E-03	3.35E-02	2.03E-03	7.23E-02	4.97E-02	**4.05E-01**
Emissions (ton/yr)	**2.72E-05**	**1.02E-05**	**9.99E-05**	**3.24E-06**	**1.67E-05**	**1.01E-06**	**3.62E-05**	**2.48E-05**	**2.02E-04**

	2021 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	4.83E-02	1.80E-02	1.77E-01	5.76E-03	2.97E-02	1.80E-03	6.42E-02	5.33E-02	**3.69E-01**
Emissions (ton/yr)	**2.42E-05**	**9.01E-06**	**8.86E-05**	**2.88E-06**	**1.48E-05**	**9.00E-07**	**3.21E-05**	**2.66E-05**	**1.84E-04**

	2022 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	1.08E-03	4.03E-04	3.97E-03	1.29E-04	6.65E-04	4.03E-05	1.44E-03	9.87E-04	**8.05E-03**
Emissions (ton/yr)	**5.41E-07**	**2.02E-07**	**1.98E-06**	**6.44E-08**	**3.32E-07**	**2.01E-08**	**7.18E-07**	**4.93E-07**	**4.02E-06**

	PROJECTED EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Naphthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs[2]
Emission Factor Diesel (lb/MMBtu) 1	2.12E-04	7.89E-05	7.76E-04	2.52E-05	1.30E-04	7.88E-06	2.81E-04	1.93E-04	---
Emissions Diesel (lb/yr)	4.49E-02	1.67E-02	1.65E-01	5.34E-03	2.76E-02	1.67E-03	5.96E-02	4.09E-02	**3.34E-01**
Emissions (ton/yr)	**2.24E-05**	**8.36E-06**	**8.23E-05**	**2.67E-06**	**1.38E-05**	**8.35E-07**	**2.98E-05**	**2.05E-05**	**1.67E-04**

[1] Emission factors (lb/MMBtu fuel input) from AP-42, Section 3.4 ("Large Stationary Diesel And All Stationary Dual-fuel Engines"), Tables 3.4-3.

[2] *NOTE: "Naphthalene" is included in "POM". To avoid double counting in TOTAL HAPs, the value for its "individual" contribution has been subtracted out.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines > 600 hP - Average of Highest 2-Yr Consecutive Period

Baseline Period: **2020 - 2021** *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL ANNUAL EMISSIONS OF CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)								
	TOTAL POM	Formaldehyde	Benzene	Acetaldehyde	Napthalene	Acrolein	Toluene	Xylenes	TOTAL HAPs [2]
Emissions (ton/yr)	**2.6E-05**	**9.6E-06**	**9.4E-05**	**3.1E-06**	**1.6E-05**	**9.6E-07**	**3.4E-05**	**2.6E-05**	**1.9E-04**

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FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX C-16: CALCULATIONS FOR ACTUAL EMISSIONS OF CO-POLLUTANTS - MERGENCY ENGINES FIRING NATURAL GAS

EMISSION SOURCES

	NATURAL GAS FIRED EMERGENCY ENGINES	EMISSION SOURCE ID	hP	*COMMENTS*
NG-34	EMERGENCY GENERATOR (MAIN OFFICE - 2004 GENERAC)	<<exempt>>	34	*Existing emergency generator.*
NG-94	EMERGENCY GENERATOR (CAST SHOP)	<<exempt>>	94	*Replaced in 2023 by new 335 hP natural gas fired engine (listed immediately below).*
NG-335	EMERGENCY GENERATOR (CAST SHOP - 2023 GENERAC)	<<exempt>>	335	*Replaces existing 94 hP natural gas fired engine (listed immediately above).*

CALCULATIONS FOR ACTUAL CO-POLLUTANT EMISSIONS FROM EMERGENCY ENGINES FIRING NATURAL GAS

0 Process Information

	NG-34	NG-94 (OLD)	NG-335 (NEW)	*COMMENTS*
Nominal Power Output for Emergency Engine (MMBtu/hr) =	0.086	0.24	0.85	*= (Nominal Power Output for Emergency Engine, hP/hr) x [0.002544 MMBtu/ hp/hr]*
Efficiency (%) =	40%	40%	40%	*Estimated*
Est. Natural Gas Usage (MMBtu/hr) =	0.22	0.60	2.13	*= (Nominal Power Output for Emergency Engine, MMBtu/hr) / (Engine Efficiency)*

		2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
NG-34 (MAIN)	Meter Reading at End of Prior Year (hrs)		15.5	49.6	70.6	92		
	Meter Reading at End of Year (hrs)		49.6	70.6	92	104.4		
	Actual No. of Operating Hours (hrs/yr) =	25.5	34.1	21	21.4	12.4	22.9	*NOTE: In mid-2018, a new hour meter was installed on NG-34. The actual no. of operating hours was calclated based on the two meters used in 2018.* *YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = Average { Annual No. of Operating Hours for 2018 - 2022 }*
	Est. Natural Gas Usage (MMBtu/yr) =	5.5E+00	7.4E+00	4.5E+00	4.6E+00	2.7E+00	4.9E+00	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
NG-94 (CAST) (OLD)	Meter Reading at End of Prior Year (hrs)	144	146	154	156	166		*Reading for 2018 from Jan 2018 (rather than Dec 2017).*
	Meter Reading at End of Year (hrs)	146	154	156	166	169		
	Actual No. of Operating Hours (hrs/yr) =	2	8	2	10	3	0	*YEARLY ANNUAL = (Meter Reading at End of Year, hrs) - (Meter Reading at End of Prior Year , hrs)* *PROJECTED = 0 (Engine to be replaced by NG-335)*
	Est. Natural Gas Usage (MMBtu/yr) =	1.2E+00	4.8E+00	1.2E+00	6.0E+00	1.8E+00	0.0E+00	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
NG-335 (CAST) (NEW)	Actual No. of Operating Hours (hrs/yr) =	0	0	0	0	0	10	
	Est. Natural Gas Usage (MMBtu/yr) =	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.1E+01	*= (Est. Natural Gas Usage, MMBtu/hr) x (Actual No. of Operating Hours, hrs/yr)*
ALL ENGINE	TOTAL Est. Natural Gas Usage (MMBtu/yr) =	6.7E+00	1.2E+01	5.7E+00	1.1E+01	4.5E+00	2.6E+01	

1 Actual - Annual Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines > 600 hP

2018 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	2.0E-03	3.7E-01	4.1E-04	2.1E-02	3.2E-04	1.3E-02	1.3E-05	1.7E-04	5.6E-02	9.9E-04	2.6E-04	3.0E-04	3.5E-04	4.4E-04	6.5E-04
Emissions (ton/yr)	**1.0E-06**	**1.9E-04**	**2.0E-07**	**1.0E-05**	**1.6E-07**	**6.5E-06**	**6.3E-09**	**8.3E-08**	**2.8E-05**	**4.9E-07**	**1.3E-07**	**1.5E-07**	**1.8E-07**	**2.2E-07**	**3.3E-07**

2018 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	1.4E-03	7.2E-04	3.7E-04	4.9E-04	5.5E-03	5.2E-02	2.8E-04	6.5E-03	3.0E-04	2.8E-04	7.4E-03	5.7E-03	2.9E-04	1.8E-03	5.5E-01
Emissions (ton/yr)	**7.1E-07**	**3.6E-07**	**1.8E-07**	**2.5E-07**	**2.8E-06**	**2.6E-05**	**1.4E-07**	**3.2E-06**	**1.5E-07**	**1.4E-07**	**3.7E-06**	**2.8E-06**	**1.5E-07**	**9.0E-07**	**2.7E-04**

2019 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	3.6E-03	6.7E-01	7.4E-04	3.7E-02	5.7E-04	2.4E-02	2.3E-05	3.0E-04	1.0E-01	1.8E-03	4.8E-04	5.4E-04	6.4E-04	8.1E-04	1.2E-03
Emissions (ton/yr)	**1.8E-06**	**3.4E-04**	**3.7E-07**	**1.9E-05**	**2.9E-07**	**1.2E-05**	**1.1E-08**	**1.5E-07**	**5.1E-05**	**8.9E-07**	**2.4E-07**	**2.7E-07**	**3.2E-07**	**4.0E-07**	**5.9E-07**

2019 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	2.6E-03	1.3E-03	6.7E-04	8.9E-04	1.0E-02	9.5E-02	5.1E-04	1.2E-02	5.4E-04	5.1E-04	1.3E-02	1.0E-02	5.3E-04	3.3E-03	9.9E-01
Emissions (ton/yr)	**1.3E-06**	**6.6E-07**	**3.3E-07**	**4.5E-07**	**5.0E-06**	**4.7E-05**	**2.6E-07**	**5.9E-06**	**2.7E-07**	**2.6E-07**	**6.7E-06**	**5.1E-06**	**2.7E-07**	**1.6E-06**	**5.0E-04**

2020 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	1.7E-03	3.2E-01	3.5E-04	1.8E-02	2.7E-04	1.1E-02	1.1E-05	1.4E-04	4.8E-02	8.4E-04	2.2E-04	2.6E-04	3.0E-04	3.8E-04	5.6E-04
Emissions (ton/yr)	**8.6E-07**	**1.6E-04**	**1.7E-07**	**8.8E-06**	**1.4E-07**	**5.6E-06**	**5.4E-09**	**7.1E-08**	**2.4E-05**	**4.2E-07**	**1.1E-07**	**1.3E-07**	**1.5E-07**	**1.9E-07**	**2.8E-07**

2020 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)

	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	1.2E-03	6.2E-04	3.1E-04	4.2E-04	4.7E-03	4.5E-02	2.4E-04	5.5E-03	2.5E-04	2.4E-04	6.4E-03	4.9E-03	2.5E-04	1.5E-03	4.7E-01
Emissions (ton/yr)	**6.1E-07**	**3.1E-07**	**1.6E-07**	**2.1E-07**	**2.4E-06**	**2.2E-05**	**1.2E-07**	**2.8E-06**	**1.3E-07**	**1.2E-07**	**3.2E-06**	**2.4E-06**	**1.3E-07**	**7.7E-07**	**2.3E-04**

	2021 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	3.2E-03	5.9E-01	6.4E-04	3.2E-02	5.0E-04	2.1E-02	2.0E-05	2.6E-04	8.9E-02	1.6E-03	4.1E-04	4.7E-04	5.6E-04	7.0E-04	1.0E-03
Emissions (ton/yr)	**1.6E-06**	**2.9E-04**	**3.2E-07**	**1.6E-05**	**2.5E-07**	**1.0E-05**	**9.9E-09**	**1.3E-07**	**4.4E-05**	**7.8E-07**	**2.1E-07**	**2.4E-07**	**2.8E-07**	**3.5E-07**	**5.1E-07**

	2021 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	2.2E-03	1.1E-03	5.8E-04	7.8E-04	8.7E-03	8.3E-02	4.5E-04	1.0E-02	4.7E-04	4.5E-04	1.2E-02	9.0E-03	4.6E-04	2.8E-03	**8.7E-01**
Emissions (ton/yr)	**1.1E-06**	**5.7E-07**	**2.9E-07**	**3.9E-07**	**4.3E-06**	**4.1E-05**	**2.2E-07**	**5.1E-06**	**2.4E-07**	**2.2E-07**	**5.9E-06**	**4.5E-06**	**2.3E-07**	**1.4E-06**	**4.3E-04**

	2022 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	1.3E-03	2.5E-01	2.7E-04	1.4E-02	2.1E-04	8.7E-03	8.4E-06	1.1E-04	3.7E-02	6.6E-04	1.7E-04	2.0E-04	2.4E-04	3.0E-04	4.3E-04
Emissions (ton/yr)	**6.7E-07**	**1.2E-04**	**1.4E-07**	**6.8E-06**	**1.1E-07**	**4.3E-06**	**4.2E-09**	**5.5E-08**	**1.9E-05**	**3.3E-07**	**8.7E-08**	**1.0E-07**	**1.2E-07**	**1.5E-07**	**2.2E-07**

	2022 ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	9.5E-04	4.8E-04	2.5E-04	3.3E-04	3.7E-03	3.5E-02	1.9E-04	4.3E-03	2.0E-04	1.9E-04	5.0E-03	3.8E-03	2.0E-04	1.2E-03	**3.7E-01**
Emissions (ton/yr)	**4.7E-07**	**2.4E-07**	**1.2E-07**	**1.6E-07**	**1.8E-06**	**1.7E-05**	**9.4E-08**	**2.2E-06**	**9.9E-08**	**9.4E-08**	**2.5E-06**	**1.9E-06**	**9.8E-08**	**6.0E-07**	**1.8E-04**

	PROJECTED EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emission Factor (lb/MMBtu) [1]	2.99E-04	5.52E-02	6.07E-05	3.06E-03	4.71E-05	1.94E-03	1.87E-06	2.47E-05	8.36E-03	1.47E-04	3.91E-05	4.46E-05	5.27E-05	6.63E-05	9.71E-05
Emissions (lb/yr)	7.9E-03	1.4E+00	1.6E-03	8.0E-02	1.2E-03	5.1E-02	4.9E-05	6.5E-04	2.2E-01	3.9E-03	1.0E-03	1.2E-03	1.4E-03	1.7E-03	2.5E-03
Emissions (ton/yr)	**3.9E-06**	**7.2E-04**	**8.0E-07**	**4.0E-05**	**6.2E-07**	**2.5E-05**	**2.5E-08**	**3.2E-07**	**1.1E-04**	**1.9E-06**	**5.1E-07**	**5.9E-07**	**6.9E-07**	**8.7E-07**	**1.3E-06**

	PROJECTED EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	2.12E-04	1.08E-04	5.48E-05	7.34E-05	8.20E-04	7.78E-03	4.22E-05	9.63E-04	4.44E-05	4.21E-05	1.11E-03	8.46E-04	4.38E-05	2.68E-04	---
Emissions (lb/yr)	5.6E-03	2.8E-03	1.4E-03	1.9E-03	2.2E-02	2.0E-01	1.1E-03	2.5E-02	1.2E-03	1.1E-03	2.9E-02	2.2E-02	1.1E-03	7.0E-03	**2.1E+00**
Emissions (ton/yr)	**2.8E-06**	**1.4E-06**	**7.2E-07**	**9.6E-07**	**1.1E-05**	**1.0E-04**	**5.5E-07**	**1.3E-05**	**5.8E-07**	**5.5E-07**	**1.5E-05**	**1.1E-05**	**5.7E-07**	**3.5E-06**	**1.1E-03**

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 3.2 ("Natural Gas-fired Reciprocating Engines"), Tables 3.2-1, 3.2-2 & 3.2-3. Values conservatively reflect the highest emission factor for all natural gas-fired engines (2-stroke, 4-stroke, rich/lean burn).*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2 Actual - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Diesel by Emergency Engines > 600 hP - Average of Highest 2-Yr Consecutive Period

Baseline Period: 2020 - 2021 *(Based upon analysis of actual CO2e emissions in TABLE A-2.1).*

	AVERAGE ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	TOTAL POM	Formaldehyde	Carbon Tetrachloride	Methanol	Chloroform	Benzene	Chloroethane	Vinyl Chloride	Acetaldehyde	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	Naphthalene
Emissions (ton/yr)	1.2E-06	2.3E-04	2.5E-07	1.3E-05	1.9E-07	7.9E-06	7.6E-09	1.0E-07	3.4E-05	6.0E-07	1.6E-07	1.8E-07	2.2E-07	2.7E-07	4.0E-07

	AVERAGE ACTUAL EMISSIONS FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)														
	Biphenyl	Ethylbenzene	Styrene	Ethylene Dibromide	1,3-Butadiene	Acrolein	1,2-Dichloroethane	Toluene	Chlorobenzene	Phenol	Hexane	2,2,4-Trimethylpentane	1,3-Dichloropropene	Xylene	TOTAL HAPs [2]
Emissions (ton/yr)	8.7E-07	4.4E-07	2.2E-07	3.0E-07	3.4E-06	3.2E-05	1.7E-07	3.9E-06	1.8E-07	1.7E-07	4.5E-06	3.5E-06	1.8E-07	1.1E-06	3.3E-04

7/20/2023

APPENDIX D CALCULATIONS FOR MOBILE SOURCES

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX D-1: CALCULATIONS FOR ACTUAL GHG EMISSIONS - ONSITE MOBILE SOURCES FIRING PROPANE

EMISSION SOURCES

PROPANE FIRED MOBILE SOURCES	# OF SOURCES
FORK TRUCKS	38
TUGS	1

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM ONSITE MOBILE SOURCES FIRING PROPANE

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
High Heating Value of Propane (MMBtu/gal)	0.120	0.120	0.120	0.120	0.120	0.120	*High Heating Value (HHV) from New York State's "2022 GHG Report" . NOTE: This value is higher than the HHV listed in 40 CFR Part 98 Subpart C, Table C-1 (i.e., 0.091 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*
Actual Annual Propane Usage (gal/yr) =	63,004	62,412	73,826	69,973	72,308	88,939	*PROJECTED = (Actual Annual NG Usage values for 2022) x 1.23 NOTE: Estimated increase in casting output (23%) expected to result in a 23% increase in fuel usage for this source/fuel type.*
Actual Annual Propane Usage (MMBtu/yr) =	7.56E+03	7.49E+03	8.86E+03	8.40E+03	8.68E+03	1.07E+04	*= (Actual Annual Propane Usage, gal/yr) x (HHV of Propane, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Propane

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	16,582	119	0.26	26,684	16,582	119	0.26	26,684	16,582	119	0.26	26,684	16,582	119	0.26	26,684	16,582	119	0.26	26,684	16,582	119	0.26	26,684	
Upstream Emission Factor (lb/MMBtu)	36.524	2.62E-01	5.7E-04	*58.775*	36.524	2.62E-01	5.7E-04	*58.775*	36.524	2.62E-01	5.7E-04	*58.775*	36.524	2.62E-01	5.7E-04	*58.775*	36.524	2.62E-01	5.7E-04	*58.775*	36.524	2.62E-01	5.7E-04	*58.775*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	2.76E+05	1.98E+03	4.3E+00	4.44E+05	2.74E+05	1.96E+03	4.3E+00	4.40E+05	3.24E+05	2.32E+03	5.1E+00	5.21E+05	3.07E+05	2.20E+03	4.8E+00	4.94E+05	3.17E+05	2.27E+03	5.0E+00	5.10E+05	3.90E+05	2.80E+03	6.1E+00	6.27E+05	*= (Actual Propane Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**1.38E+02**	**9.91E-01**	**2.2E-03**	*2.22E+02*	**1.37E+02**	**9.82E-01**	**2.1E-03**	*2.20E+02*	**1.62E+02**	**1.16E+00**	**2.5E-03**	*2.60E+02*	**1.53E+02**	**1.10E+00**	**2.4E-03**	*2.47E+02*	**1.58E+02**	**1.14E+00**	**2.5E-03**	*2.55E+02*	**1.95E+02**	**1.40E+00**	**3.1E-03**	*3.14E+02*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**1.38E+02**	**8.32E+01**	**5.72E-01**	**2.22E+02**	**1.37E+02**	**8.24E+01**	**5.66E-01**	**2.20E+02**	**1.62E+02**	**9.75E+01**	**6.70E-01**	**2.60E+02**	**1.53E+02**	**9.24E+01**	**6.35E-01**	**2.46E+02**	**1.58E+02**	**9.55E+01**	**6.56E-01**	**2.55E+02**	**1.95E+02**	**1.17E+02**	**8.07E-01**	**3.13E+02**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Mobile Sources Using Propane

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	62.87	3.0E-03	6.0E-03	---	62.87	3.0E-03	6.0E-03	---	62.87	3.0E-03	6.0E-03	---	62.87	3.0E-03	6.0E-03	---	62.87	3.0E-03	6.0E-03	---	62.87	3.0E-03	6.0E-03	---	
Combustion Emission Factor (lb/MMBtu)	138.3	6.6E-03	1.3E-02	---	138.3	6.6E-03	1.3E-02	---	138.3	6.6E-03	1.3E-02	---	138.3	6.6E-03	1.3E-02	---	138.3	6.6E-03	1.3E-02	---	138.3	6.6E-03	1.3E-02	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.05E+06	4.99E+01	9.98E+01	---	1.04E+06	4.9E+01	9.9E+01	---	1.23E+06	5.8E+01	1.2E+02	---	1.16E+06	5.5E+01	1.1E+02	---	1.20E+06	5.7E+01	1.1E+02	---	1.48E+06	7.0E+01	1.4E+02	---	*= (Actual Propane Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**5.23E+02**	**2.5E-02**	**5.0E-02**	---	**5.18E+02**	**2.5E-02**	**4.9E-02**	---	**6.13E+02**	**2.9E-02**	**5.8E-02**	---	**5.81E+02**	**2.8E-02**	**5.5E-02**	---	**6.00E+02**	**2.9E-02**	**5.7E-02**	---	**7.38E+02**	**3.5E-02**	**7.0E-02**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**5.23E+02**	**2.1E+00**	**1.3E+01**	**5.38E+02**	**5.18E+02**	**2.1E+00**	**1.3E+01**	**5.33E+02**	**6.13E+02**	**2.5E+00**	**1.5E+01**	**6.31E+02**	**5.81E+02**	**2.3E+00**	**1.5E+01**	**5.98E+02**	**6.00E+02**	**2.4E+00**	**1.5E+01**	**6.18E+02**	**7.38E+02**	**3.0E+00**	**1.9E+01**	**7.60E+02**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Mobile Sources Using Propane

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**6.61E+02**	**1.0E+00**	**5.2E-02**	---	**6.55E+02**	**1.0E+00**	**5.2E-02**	---	**7.74E+02**	**1.2E+00**	**6.1E-02**	---	**7.34E+02**	**1.1E+00**	**5.8E-02**	---	**7.59E+02**	**1.2E+00**	**6.0E-02**	---	**9.33E+02**	**1.4E+00**	**7.3E-02**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	**6.61E+02**	**8.5E+01**	**1.4E+01**	**7.60E+02**	**6.55E+02**	**8.5E+01**	**1.4E+01**	**7.53E+02**	**7.74E+02**	**1.0E+02**	**1.6E+01**	**8.91E+02**	**7.34E+02**	**9.5E+01**	**1.5E+01**	**8.44E+02**	**7.59E+02**	**9.8E+01**	**1.6E+01**	**8.72E+02**	**9.33E+02**	**1.2E+02**	**1.9E+01**	**1.07E+03**	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	***6.00E+02***	***7.7E+01***	***1.2E+01***	***6.89E+02***	***5.94E+02***	***7.7E+01***	***1.2E+01***	***6.83E+02***	***7.03E+02***	***9.1E+01***	***1.5E+01***	***8.08E+02***	***6.66E+02***	***8.6E+01***	***1.4E+01***	***7.66E+02***	***6.88E+02***	***8.9E+01***	***1.4E+01***	***7.91E+02***	***8.46E+02***	***1.1E+02***	***1.8E+01***	***9.73E+02***	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

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FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX D-2: CALCULATIONS FOR ACTUAL GHG EMISSIONS - ONSITE MOBILE SOURCES FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED MOBILE SOURCES	# OF SOURCES
TUGS	1
MAN LIFT	1
STRADDLE CARRIER	1
LOADER	1
BOBCAT TRACTOR	1
MOBILE CRANE	1
SKID STEER	2
YARD FORK TRUCK	1
C.S. SWEEPER	1

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM ONSITE MOBILE SOURCES FIRING DIESEL

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
High Heating Value of Diesel (MMBtu/gal)	0.138	0.138	0.138	0.138	0.138	0.138	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1. NOTE: This value is higher than the HHV listed in New York State's "2022 GHG Report" (i.e., 0.137 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*
Actual Annual Diesel Usage (gal/yr) =	4,653	4,701	4,590	4,844	5,006	5,857	*PROJECTED = (Actual Annual NG Usage values for 2022) x 1.17 NOTE: Estimated increase in casting output (23%) expected to result in a 17% increase in fuel usage for this source/fuel type.*
Actual Annual Diesel Usage (MMBtu/yr) =	6.42E+02	6.49E+02	6.33E+02	6.68E+02	6.91E+02	8.08E+02	*= (Actual Annual Diesel Usage, gal/yr) x (HHV of Diesel, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*
Upstream Emissions (lb/yr)	2.06E+04	1.68E+02	3.5E-01	3.48E+04	2.09E+04	1.70E+02	3.6E-01	3.52E+04	2.04E+04	1.66E+02	3.5E-01	3.44E+04
Upstream Emissions (ton/yr)	**1.03E+01**	**8.42E-02**	**1.8E-04**	*1.74E+01*	**1.04E+01**	**8.50E-02**	**1.8E-04**	*1.76E+01*	**1.02E+01**	**8.30E-02**	**1.7E-04**	*1.72E+01*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Upstream Emissions as CO2e (tons/yr)	1.03E+01	7.07E+00	4.7E-02	1.74E+01	1.04E+01	7.14E+00	4.72E-02	1.76E+01	1.02E+01	6.97E+00	4.60E-02	1.72E+01

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	14,599	119	0.25	24,638	
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	2.15E+04	1.75E+02	3.7E-01	3.63E+04	2.22E+04	1.81E+02	3.8E-01	3.75E+04	2.60E+04	2.12E+02	4.5E-01	4.39E+04	*= (Actual Diesel Usage, MMBtu/yr) x (Upstream EF, lb/M*
Upstream Emissions (ton/yr)	**1.07E+01**	**8.76E-02**	**1.8E-04**	*1.81E+01*	**1.11E+01**	**9.05E-02**	**1.9E-04**	*1.87E+01*	**1.30E+01**	**1.06E-01**	**2.2E-04**	*2.19E+01*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	1.07E+01	7.36E+00	4.86E-02	1.82E+01	1.11E+01	7.61E+00	5.02E-02	1.88E+01	1.30E+01	8.90E+00	5.88E-02	2.20E+01	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Mobile Sources Using Diesel

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---
Combustion Emissions (lb/yr)	1.04E+05	4.2E+00	8.48E-01	---	1.06E+05	4.3E+00	8.6E-01	---	1.03E+05	4.2E+00	8.4E-01	---
Combustion Emissions (ton/yr)	**5.22E+01**	**2.1E-03**	**4.2E-04**	---	**5.28E+01**	**2.1E-03**	**4.3E-04**	---	**5.15E+01**	**2.1E-03**	**4.2E-04**	---
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Combustion Emissions as CO2e (tons/yr)	5.22E+01	1.8E-01	1.1E-01	5.25E+01	5.28E+01	1.8E-01	1.1E-01	5.31E+01	5.15E+01	1.8E-01	1.1E-01	5.18E+01

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg*
Combustion Emissions (lb/yr)	1.09E+05	4.4E+00	8.8E-01	---	1.12E+05	4.6E+00	9.1E-01	---	1.32E+05	5.3E+00	1.1E+00	---	*= (Actual Diesel Usage, MMBtu/yr) x (Combustion EF, lb/*
Combustion Emissions (ton/yr)	**5.44E+01**	**2.2E-03**	**4.4E-04**	---	**5.62E+01**	**2.3E-03**	**4.6E-04**	---	**6.58E+01**	**2.7E-03**	**5.3E-04**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	5.44E+01	1.9E-01	1.2E-01	5.47E+01	5.62E+01	1.9E-01	1.2E-01	5.65E+01	6.58E+01	2.2E-01	1.4E-01	6.61E+01	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Mobile Sources Using Diesel

	2018				2019				2020			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Total Emissions (tons/yr)	**6.26E+01**	**8.6E-02**	**6.0E-04**	---	**6.32E+01**	**8.7E-02**	**6.1E-04**	---	**6.17E+01**	**8.5E-02**	**5.9E-04**	---
Total Emissions as CO2e (tons/yr)	6.26E+01	7.2E+00	1.6E-01	7.00E+01	6.32E+01	7.3E+00	1.6E-01	7.07E+01	6.17E+01	7.1E+00	1.6E-01	6.90E+01
Total Emissions as CO2e (metric tonnes/yr)	*5.68E+01*	*6.6E+00*	*1.4E-01*	*6.35E+01*	*5.73E+01*	*6.6E+00*	*1.5E-01*	*6.41E+01*	*5.60E+01*	*6.5E+00*	*1.4E-01*	*6.26E+01*

	2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**6.51E+01**	**9.0E-02**	**6.3E-04**	---	**6.73E+01**	**9.3E-02**	**6.5E-04**	---	**7.88E+01**	**1.1E-01**	**7.6E-04**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emis*
Total Emissions as CO2e (tons/yr)	6.51E+01	7.5E+00	1.7E-01	7.28E+01	6.73E+01	7.8E+00	1.7E-01	7.53E+01	7.88E+01	9.1E+00	2.0E-01	8.81E+01	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	*5.91E+01*	*6.8E+00*	*1.5E-01*	*6.61E+01*	*6.11E+01*	*7.1E+00*	*1.5E-01*	*6.83E+01*	*7.14E+01*	*8.3E+00*	*1.8E-01*	*7.99E+01*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX D-3: CALCULATIONS FOR ACTUAL GHG EMISSIONS - ONSITE MOBILE SOURCES FIRING GASOLINE

EMISSION SOURCES

GASOLINE FIRED MOBILE SOURCES	# OF SOURCES
WELDERS	3
GOLF CARTS	10
PICK-UP TRUCKS	4

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM ONSITE MOBILE SOURCES FIRING GASOLINME

0 Process Information

	2018	2019	2020	2021	2022	PROJECTED	*COMMENTS*
High Heating Value of Gasoline (MMBtu/gal)	0.125	0.125	0.125	0.125	0.125	0.125	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1.*
Actual Annual Gasoline Usage (gal/yr) =	2,883	2,586	1,540	1,901	1,940	2,134	*PROJECTED = (Actual Annual NG Usage values for 2022) x 1.10* *NOTE: Estimated increase in casting output (23%) expected to result in a 10% increase in fuel usage for this source/fuel type.*
Actual Annual Gasoline Usage (MMBtu/yr) =	3.60E+02	3.23E+02	1.93E+02	2.38E+02	2.43E+02	2.67E+02	*= (Actual Annual Gasoline Usage, gal/yr) x (HHV of Gasoline, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Gasoline

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	18,902	125	0.32	29,504	18,902	125	0.32	29,504	18,902	125	0.32	29,504	18,902	125	0.32	29,504	18,902	125	0.32	29,504	18,902	125	0.32	29,504	
Upstream Emission Factor (lb/MMBtu)	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	1.50E+04	9.92E+01	2.5E-01	2.34E+04	1.35E+04	8.90E+01	2.3E-01	2.10E+04	8.01E+03	5.30E+01	1.4E-01	1.25E+04	9.89E+03	6.54E+01	1.7E-01	1.54E+04	1.01E+04	6.68E+01	1.7E-01	1.58E+04	1.11E+04	7.34E+01	1.9E-01	1.73E+04	*= (Actual Gasoline Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**7.50E+00**	**4.96E-02**	**1.3E-04**	*1.17E+01*	**6.73E+00**	**4.45E-02**	**1.1E-04**	*1.05E+01*	**4.01E+00**	**2.65E-02**	**6.8E-05**	*6.25E+00*	**4.95E+00**	**3.27E-02**	**8.4E-05**	*7.72E+00*	**5.05E+00**	**3.34E-02**	**8.5E-05**	*7.88E+00*	**5.55E+00**	**3.67E-02**	**9.4E-05**	*8.67E+00*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	
Upstream Emissions as CO2e (tons/yr)	7.50E+00	4.17E+00	3.35E-02	1.17E+01	6.73E+00	3.74E+00	3.01E-02	1.05E+01	4.01E+00	2.23E+00	1.79E-02	6.25E+00	4.95E+00	2.75E+00	2.21E-02	7.72E+00	5.05E+00	2.80E+00	2.26E-02	7.87E+00	5.55E+00	3.08E+00	2.48E-02	8.66E+00	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Mobile Sources Using Gasoline

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	
Combustion Emission Factor (lb/MMBtu)	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg*
Combustion Emissions (lb/yr)	5.57E+04	2.38E+00	4.76E+00	---	4.99E+04	2.1E+00	4.3E+00	---	2.97E+04	1.3E+00	2.5E+00	---	3.67E+04	1.6E+00	3.1E+00	---	3.75E+04	1.6E+00	3.2E+00	---	4.12E+04	1.8E+00	3.5E+00	---	*= (Actual Gasoline Usage, MMBtu/yr) x (Combustion EF,*
Combustion Emissions (ton/yr)	**2.78E+01**	**1.2E-03**	**2.4E-03**	---	**2.50E+01**	**1.1E-03**	**2.1E-03**	---	**1.49E+01**	**6.4E-04**	**1.3E-03**	---	**1.84E+01**	**7.8E-04**	**1.6E-03**	---	**1.87E+01**	**8.0E-04**	**1.6E-03**	---	**2.06E+01**	**8.8E-04**	**1.8E-03**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	**1**	**84**	**264**	---	
Combustion Emissions as CO2e (tons/yr)	2.78E+01	1.0E-01	6.3E-01	2.86E+01	2.50E+01	9.0E-02	5.6E-01	2.56E+01	1.49E+01	5.3E-02	3.4E-01	1.53E+01	1.84E+01	6.6E-02	4.1E-01	1.88E+01	1.87E+01	6.7E-02	4.2E-01	1.92E+01	2.06E+01	7.4E-02	4.6E-01	2.11E+01	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Mobile Sources Using Gasoline

	2018				2019				2020				2021				2022				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**3.53E+01**	**5.1E-02**	**2.5E-03**	---	**3.17E+01**	**4.6E-02**	**2.2E-03**	---	**1.89E+01**	**2.7E-02**	**1.3E-03**	---	**2.33E+01**	**3.3E-02**	**1.7E-03**	---	**2.38E+01**	**3.4E-02**	**1.7E-03**	---	**2.62E+01**	**3.8E-02**	**1.9E-03**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emis*
Total Emissions as CO2e (tons/yr)	3.53E+01	4.3E+00	6.6E-01	4.03E+01	3.17E+01	3.8E+00	5.9E-01	3.61E+01	1.89E+01	2.3E+00	3.5E-01	2.15E+01	2.33E+01	2.8E+00	4.4E-01	2.66E+01	2.38E+01	2.9E+00	4.5E-01	2.71E+01	2.62E+01	3.2E+00	4.9E-01	2.98E+01	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	*3.21E+01*	*3.9E+00*	*6.0E-01*	*3.65E+01*	*2.88E+01*	*3.5E+00*	*5.4E-01*	*3.28E+01*	*1.71E+01*	*2.1E+00*	*3.2E-01*	*1.95E+01*	*2.11E+01*	*2.6E+00*	*4.0E-01*	*2.41E+01*	*2.16E+01*	*2.6E+00*	*4.0E-01*	*2.46E+01*	*2.37E+01*	*2.9E+00*	*4.4E-01*	*2.70E+01*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX D-4: CALCULATIONS FOR ACTUAL GHG EMISSIONS - OFFSITE MOBILE SOURCES FIRING DIESEL

EMISSION SOURCES

DIESEL FIRED MOBILE SOURCES	VEHICLE TYPE	CURRENT OPERATIONS VEHICLE TRIPS/MONTH	CURRENT OPERATIONS MILES /VISIT	CURRENT OPERATIONS TOTAL MILES/YR	FUTURE OPERATIONS VEHICLE TRIPS/MONTH	FUTURE OPERATIONS MILES /VISIT	FUTURE OPERATIONS TOTAL MILES/YR	*NOTES* [1]
Shipping	Tractor Trailer	230	1.0	2,760	290	1.0	3,480	*1.0 mile round trip from Gansevoort Ave and Seneca St.*
Scrap copper receiving	Tractor Trailer	220	1.3	3,432	280	1.3	4,368	*1.3 miles round trip from Gansevoort Ave and Seneca St.*
Parts/material Deliveries	Box Van/Flat Bed	10	0.7	84	11	0.7	92	*0.7 miles round trip from Gansevoort Ave and Seneca St.*
Parts/material Deliveries	Tractor Trailer	10	0.7	84	12	0.7	101	*0.7 miles round trip from Gansevoort Ave and Seneca St.*
Waste removal (WM)	Garbage Truck	4	1.1	53	4	1.1	53	*1.1 miles round trip from Gansevoort Ave and Seneca St.*
Waste removal (dumpsters)	Roll off truck	20	1.2	288	24	1.2	346	*1.2 miles round trip from Gansevoort Ave and Seneca St.*
TOTAL FOR OFFSITE SOURCES				**6,701**			**8,440**	

[1] *The intersection of Gansevoort Ave and Seneca St. is 1/4 mile from facility.*

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM OFFSITE MOBILE SOURCES FIRING DIESEL

0 Process Information

	CURRENT	PROJECTED	*COMMENTS*
Est. Miles Traveled (miles/yr) =	6,701	8,440	
Est. Fuel Efficiency for Vehicles (miles/gal) =	8	8	
Est. Qty of Diesel Used (gal/yr) =	838	1,055	*= (Est. Miles Traveled, miles/yr) / (Est. Fuel Efficiency for Vehicles, miles/gal)*
High Heating Value of Diesel (MMBtu/gal)	0.138	0.138	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1. NOTE: This value is higher than the HHV listed in New York State's "2022 GHG Report" (i.e., 0.137 MMBtu/gal), resulting in a more conservative estimate of GHG emissions.*
Est. Qty of Used (MMBtu/yr) =	116	146	*= (Est. Qty of Diesel Used (gal/yr) x (High Heating Value of Diesel, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Diesel

	CURRENT CO_2	CURRENT CH_4	CURRENT N_2O	CURRENT TOTAL CO2e (20 yr GWP)	PROJECTED CO_2	PROJECTED CH_4	PROJECTED N_2O	PROJECTED TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	14,599	119	0.25	24,638	14,599	119	0.25	24,638	
Upstream Emission Factor (lb/MMBtu)	32.156	2.62E-01	5.5E-04	*54.269*	32.156	2.62E-01	5.5E-04	*54.269*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	3.72E+03	3.03E+01	6.4E-02	6.27E+03	4.68E+03	3.82E+01	8.0E-02	7.90E+03	*= (Actual Diesel Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**1.86E+00**	**1.51E-02**	**3.2E-05**	*3.14E+00*	**2.34E+00**	**1.91E-02**	**4.0E-05**	*3.95E+00*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**1.86E+00**	**1.27E+00**	**8.40E-03**	**3.14E+00**	**2.34E+00**	**1.60E+00**	**1.06E-02**	**3.95E+00**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Mobile Sources Using Diesel

	CURRENT CO_2	CURRENT CH_4	CURRENT N_2O	CURRENT TOTAL CO2e	PROJECTED CO_2	PROJECTED CH_4	PROJECTED N_2O	PROJECTED TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	73.96	3.0E-03	6.0E-04	---	73.96	3.0E-03	6.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	162.7	6.6E-03	1.3E-03	---	162.7	6.6E-03	1.3E-03	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.88E+04	7.63E-01	1.5E-01	---	2.37E+04	9.6E-01	1.9E-01	---	*= (Actual Diesel Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**9.40E+00**	**3.8E-04**	**7.6E-05**	---	**1.18E+01**	**4.8E-04**	**9.6E-05**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**9.40E+00**	**3.2E-02**	**2.0E-02**	**9.46E+00**	**1.18E+01**	**4.0E-02**	**2.5E-02**	**1.19E+01**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Mobile Sources Using Diesel

	CURRENT				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	1.13E+01	1.6E-02	1.1E-04	---	1.42E+01	2.0E-02	1.4E-04	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	1.13E+01	1.3E+00	2.9E-02	1.26E+01	1.42E+01	1.6E+00	3.6E-02	1.59E+01	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*

Total Emissions as CO2e (metric tonnes/yr)	*1.02E+01*	*1.2E+00*	*2.6E-02*	*1.14E+01*	*1.29E+01*	*1.5E+00*	*3.3E-02*	*1.44E+01*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

FACILITY IMPACT UPON NEW YORK STATE'S CLIMATE LEADERSHIP & COMMUNITY PROTECTION ACT (CLCPA)
APPENDIX D-5: CALCULATIONS FOR ACTUAL GHG EMISSIONS - OFFSITE MOBILE SOURCES FIRING GASOLINE

EMISSION SOURCES

GASOLINE FIRED MOBILE SOURCES	VEHICLE TYPE	CURRENT OPERATIONS VEHICLE TRIPS/MONTH	CURRENT OPERATIONS MILES /VISIT	CURRENT OPERATIONS TOTAL MILES/YR	FUTURE OPERATIONS VEHICLE TRIPS/MONTH	FUTURE OPERATIONS MILES /VISIT	FUTURE OPERATIONS TOTAL MILES/YR	*NOTES* [1]
Parts/material Deliveries	box van/flat bed	10	1.0	120	11	1.0	132	*0.7 miles round trip from Gansevoort Ave and Seneca St.*

[1] *The intersection of Gansevoort Ave and Seneca St. is 1/4 mile from facility.*

CALCULATIONS FOR ACTUAL GHG EMISSIONS FROM OFFSITE MOBILE SOURCES FIRING DIESEL

0 Process Information

	CURRENT	PROJECTED	*COMMENTS*
Actual Annual Miles Traveled (mi/yr) =	120	132	
Est. Fuel Efficiency for Vehicles (miles/gal) =	8	8	
Est. Qty of Gasoline Used (gal/yr) =	15	17	*= (Est. Miles Traveled, miles/yr) / (Est. Fuel Efficiency for Vehicles, miles/gal)*
High Heating Value of Gasoline (MMBtu/gal)	0.125	0.125	*High Heating Value (HHV) from 40 CFR Part 98 Subpart C, Table C-1.*
Est. Qty of Used (MMBtu/yr) =	1.9	2.1	*= (Est. Qty of Gasoline Used (gal/yr) x (High Heating Value of Gasoline, MMBtu/gal)*

1 Actual - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Gasoline

	CURRENT CO_2	CURRENT CH_4	CURRENT N_2O	CURRENT TOTAL CO2e (20 yr GWP)	PROJECTED CO_2	PROJECTED CH_4	PROJECTED N_2O	PROJECTED TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	18,902	125	0.32	29,504	18,902	125	0.32	29,504	
Upstream Emission Factor (lb/MMBtu)	41.634	2.75E-01	7.0E-04	*64.987*	41.634	2.75E-01	7.0E-04	*64.987*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	7.81E+01	5.16E-01	1.3E-03	1.22E+02	8.59E+01	5.68E-01	1.5E-03	1.34E+02	*= (Actual Diesel Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	**3.90E-02**	**2.58E-04**	**6.6E-07**	*6.09E-02*	**4.29E-02**	**2.84E-04**	**7.3E-07**	*6.70E-02*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**3.90E-02**	**2.17E-02**	**1.74E-04**	**6.09E-02**	**4.29E-02**	**2.39E-02**	**1.92E-04**	**6.70E-02**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Actual - Direct GHG Emissions from Mobile Sources Using Gasoline

	CURRENT CO_2	CURRENT CH_4	CURRENT N_2O	CURRENT TOTAL CO2e	PROJECTED CO_2	PROJECTED CH_4	PROJECTED N_2O	PROJECTED TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	70.22	3.0E-03	6.0E-03	---	70.22	3.0E-03	6.0E-03	---	
Combustion Emission Factor (lb/MMBtu)	154.5	6.6E-03	1.3E-02	---	154.5	6.6E-03	1.3E-02	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	2.90E+02	1.2E-02	2.5E-02	---	3.19E+02	1.4E-02	2.7E-02	---	*= (Actual Diesel Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	**1.45E-01**	**6.2E-06**	**1.2E-05**	---	**1.59E-01**	**6.8E-06**	**1.4E-05**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**1.45E-01**	**5.2E-04**	**3.3E-03**	**1.49E-01**	**1.59E-01**	**5.7E-04**	**3.6E-03**	**1.63E-01**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Actual - Total GHG Emissions from Mobile Sources Using gasoline

	CURRENT				PROJECTED				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Total Emissions (tons/yr)	**1.84E-01**	**2.6E-04**	**1.3E-05**	---	**2.02E-01**	**2.9E-04**	**1.4E-05**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	1.84E-01	2.2E-02	3.4E-03	2.10E-01	2.02E-01	2.4E-02	3.8E-03	2.30E-01	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Total Emissions as CO2e (metric tonnes/yr)	*1.67E-01*	*2.0E-02*	*3.1E-03*	*1.90E-01*	*1.83E-01*	*2.2E-02*	*3.4E-03*	*2.09E-01*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/ (ton)]*

7/20/2023

APPENDIX E CALCULATIONS FOR POTENTIAL GHG EMISSION REDUCTIONS

EMISSION SOURCES

FACILITY COMBUSTION SOURCES FIRING NATURAL GAS
SEE INFO BELOW

CALCULATIONS FOR REDUCTIONS IN ACTUAL GHG EMISSIONS FROM OTHER SOURCES FIRING NATURAL GAS

0 Process Information

Project	Boilers 1 - 3: Upgrade Boiler Control System & Change Boiler Fuels	Cake Furnace: Replace Burner Control System	Cake Furnace: Install Recuperator	IGS Generator: Replace DX Gas with New Inert Gas	IGS Generator: Upgrade Boiler Controls	*COMMENTS*
Average Actual Annual Heating Value of Natural Gas (MMBtu/scf)	1.02866E-03	1.02866E-03	1.02866E-03	1.02866E-03	1.02866E-03	*= Average {Actual Heating values shown on monthly bills for 2018 - 2022}*
Projected Actual Annual Natural Gas Usage (scf/yr) =	2.1424E+08	1.3188E+08	1.3188E+08	4.00E+07	4.00E+07	*Linked from workbook tabs that calculate Projected Emissions for Source.*
2022 Actual Annual Natural Gas Usage (MMBtu/yr) =	2.2038E+05	1.3566E+05	1.3566E+05	4.11E+04	4.11E+04	*= (2022 Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*
Potential Reduction in Natural Gas Usage (%)	5%	10%	30%	100%	20%	
Estimated Reduction in Natural Gas Usage (MMBtu/yr) =	1.102E+04	1.357E+04	4.070E+04	4.113E+04	8.225E+03	*= (2022 Actual Annual Natural Gas Usage, scf/yr) x (Average Annual Actual Heating Value of Natural Gas, MMBtu/scf)*

1 Reduction in GHG Emissions - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	Boilers 1 - 3: Upgrade Boiler Control System & Change Boiler Fuels				Cake Furnace: Replace Burner Control System				Cake Furnace: Install Recuperator *(Assumes 30% Reduction in NG Usage)*			
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	12,206	350	0.14	41,671
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*
Reduction in Upstream Emissions (lb/yr)	2.96E+05	8.49E+03	3.4E+00	1.01E+06	3.65E+05	1.05E+04	4.2E+00	1.25E+06	1.09E+06	3.14E+04	1.3E+01	3.74E+06
Reduction in Upstream Emissions (ton/yr)	**1.48E+02**	**4.25E+00**	**1.7E-03**	*5.06E+02*	**1.82E+02**	**5.23E+00**	**2.1E-03**	*6.23E+02*	**5.47E+02**	**1.57E+01**	**6.3E-03**	*1.87E+03*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Upstream Emissions as CO2e (tons/yr)	**1.48E+02**	**3.57E+02**	**4.49E-01**	**5.05E+02**	**1.82E+02**	**4.39E+02**	**5.52E-01**	**6.22E+02**	**5.47E+02**	**1.32E+03**	**1.66E+00**	**1.87E+03**

	IGS Generator : Replace DX Gas with New Inert Gas				IGS Generator: Upgrade Boiler Controls				
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	*NOTES*
Upstream Emission Factor (g/MMBtu) [1]	12,206	350	0.14	41,671	12,206	350	0.14	41,671	
Upstream Emission Factor (lb/MMBtu)	26.885	7.71E-01	3.1E-04	*91.786*	26.885	7.71E-01	3.1E-04	*91.786*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Reduction in Upstream Emissions (lb/yr)	1.11E+06	3.17E+04	1.3E+01	3.77E+06	2.21E+05	6.34E+03	2.5E+00	7.55E+05	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Reduction in Upstream Emissions (ton/yr)	**5.53E+02**	**1.59E+01**	**6.3E-03**	*1.89E+03*	**1.11E+02**	**3.17E+00**	**1.3E-03**	*3.77E+02*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Upstream Emissions as CO2e (tons/yr)	**5.53E+02**	**1.33E+03**	**1.67E+00**	**1.89E+03**	**1.11E+02**	**2.66E+02**	**3.35E-01**	**3.77E+02**	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2022 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 Reduction in GHG Emissions - Direct GHG Emissions from Facility-wide Use of Natural Gas

	Boilers 1 - 3: Upgrade Boiler Control System & Change Boiler Fuels				Cake Furnace: Replace Burner Control System				Cake Furnace: Install Recuperator *(Assumes 30% Reduction in NG Usage)*			
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---
Reduction in Combustion Emissions (lb/yr)	1.29E+06	2.42E+01	2.42E+00	---	1.58E+06	3.0E+01	3.0E+00	---	4.75E+06	9.0E+01	9.0E+00	---
Reduction in Combustion Emissions (ton/yr)	**6.43E+02**	**1.2E-02**	**1.2E-03**	---	**7.92E+02**	**1.5E-02**	**1.5E-03**	---	**2.38E+03**	**4.5E-02**	**4.5E-03**	---
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**
Combustion Emissions as CO2e (tons/yr)	**6.43E+02**	**1.0E+00**	**3.2E-01**	**6.44E+02**	**7.92E+02**	**1.3E+00**	**3.9E-01**	**7.93E+02**	**2.38E+03**	**3.8E+00**	**1.2E+00**	**2.38E+03**

	IGS Generator : Replace DX Gas with New Inert Gas				IGS Generator: Upgrade Boiler Controls				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Reduction in Combustion Emissions (lb/yr)	4.80E+06	9.0E+01	9.0E+00	---	9.60E+05	1.8E+01	1.8E+00	---	*= (Actual Natural Gas Usage 2022, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Reduction in Combustion Emissions (ton/yr)	**2.40E+03**	**4.5E-02**	**4.5E-03**	---	**4.80E+02**	**9.0E-03**	**9.0E-04**	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	**1**	**84**	**264**	**---**	**1**	**84**	**264**	**---**	
Combustion Emissions as CO2e (tons/yr)	**2.40E+03**	**3.8E+00**	**1.2E+00**	**2.41E+03**	**4.80E+02**	**7.6E-01**	**2.4E-01**	**4.81E+02**	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 Reduction in GHG Emissions - Total GHG Emissions from Facility-wide Use of Natural Gas

	Boilers 1 - 3: Upgrade Boiler Control System & Change Boiler Fuels				Cake Furnace: Replace Burner Control System				Cake Furnace: Install Recuperator *(Assumes 30% Reduction in NG Usage)*				IGS Generator : Replace DX Gas with New Inert Gas				IGS Generator: Upgrade Boiler Controls				
	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	CO_2	CH_4	N_2O	TOTAL CO2e	*NOTES*
Reduction in Total Emissions (tons/yr)	**7.91E+02**	**4.3E+00**	**2.9E-03**	---	**9.74E+02**	**5.2E+00**	**3.6E-03**	---	**2.92E+03**	**1.6E+01**	**1.1E-02**	---	**2.95E+03**	**1.6E+01**	**1.1E-02**	---	**5.91E+02**	**3.2E+00**	**2.2E-03**	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Reduction in Total Emissions as CO2e (tons/yr)	7.91E+02	3.6E+02	7.7E-01	1.15E+03	9.74E+02	4.4E+02	9.5E-01	1.42E+03	2.92E+03	1.3E+03	2.8E+00	4.25E+03	2.95E+03	1.3E+03	2.9E+00	4.29E+03	5.91E+02	2.7E+02	5.7E-01	8.58E+02	*= (Upstream GHG Emissions, tons as CO2e/yr) + (Direct GHG Emissions, tons as CO2e/yr)*
Reduction in Total Emissions as CO2e (metric tonnes/yr)	*7.18E+02*	*3.2E+02*	*7.0E-01*	*1.04E+03*	*8.84E+02*	*4.0E+02*	*8.6E-01*	*1.28E+03*	*2.65E+03*	*1.2E+03*	*2.6E+00*	*3.85E+03*	*2.68E+03*	*1.2E+03*	*2.6E+00*	*3.89E+03*	*5.36E+02*	*2.4E+02*	*5.2E-01*	*7.79E+02*	*= (Total Emissions as CO2e, tons/yr) x [(0.9072 metric tonne)/(ton)]*

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RAMBOLL

EXHIBIT 2
PUBLIC PARTICIPATION PLAN

The Public Participation Plan included in this copy of the application package was updated on October 3, 2023 to address NYSDEC comments

Public Participation Plan

Revere Copper Products, Inc.: Air State Facility Permit Modification and Renewal

03 October 2023

Revere Copper Products, Inc.

Project No.: 0692098

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Document details	The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.
Document title	Public Participation Plan
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Author	ERM Consulting & Engineering, Inc.
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Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
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	01	D. Murtha		D. Murtha	09.08.2023	Complete Report
Final w/edits	01	D. Murtha		D. Murtha	10.03.2023	Complete Report

Signature Page

03 October 2023

Public Participation Plan

Revere Copper Products, Inc.: Air State Facility Permit Modification and Renewal

1 Revere Park
Rome, NY 13440

NYSDEC Facility ID Number: # 6-3013-00091

As Required by:
NYSDEC Commissioner's Policy Guidance CP-29

Submitted to:
New York State Department of Environmental Conservation
Division of Environmental Permits, Region 6
207 Genesee Street, Utica, NY 13501-2885

Prepared by:

Christine Ferry
Managing Consultant

David T. Murtha, QEP, CVI, TWIC
Consulting Director

Gary M. Keating
Partner-in-Charge

ERM Consulting & Engineering, Inc.
345 Woodcliff Drive
2nd Floor
Fairport, New York 14450

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Acronyms and Abbreviations

Name	Description
AGC	Annual Guideline Concentration
ASF	Air State Facility
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivaletns
CP-29	Commissioner Policy 29: Environmental Justice and Permitting
DAC	Disadvantaged Community
EJScreen	US EPA's Environmental Justice Screening Tool
EV	Electric Vehicle
GIS	Geographic Information System
HAP	Hazardous Air Pollutant
lbs/yr	Pounds per year
NOCA	Notice of Complete Application
NOx	Oxides of Nitrogen
NYCRR	New York Code, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
PEJA	Potential Environmental Justice Area
PM	Particulate Matter
PM10	Particulate matter with an aerometric diameter of less than 10 microns
PM2.5	Particulate matter with an aerometric diameter of less than 2.5 microns
PPP	Public Participation Plan
SGC	Short-Term Guideline Concentration
SO_2	Sulfur Dioxide
TPM	Particulate matter, total
TPY	Tons per year
VOC	Volatile Organic Compound

1. INTRODUCTION AND OBJECTIVE

This Public Participation Plan (PPP) has been prepared by Revere Copper Products, Inc. (hereinafter referred to as "Revere" or "Applicant") to fulfill and comply with the requirements of New York State Department of Environmental Conservation ("NYSDEC") Commissioner Policy 29, Environmental Justice and Permitting (CP-29). This PPP is submitted to the NYSDEC as a requirement of the proposed modification to and renewal of the Air State Facility Permit for Revere's Rome, New York manufacturing facility. Based on the location of the Applicant's facility, CP-29 requires Revere to prepare and submit this PPP to the NYSDEC Regional Permit Administrator for review, approval and implementation since it has been determined by the NYSDEC that the proposed modification and renewal of this ASF Permit could impact one or more potential environmental justice areas (PEJA) (See Figure 1).

This PPP has been developed in accordance with the procedures established in CP-29 Section V.D and it aims to help ensure meaningful and effective public participation throughout the NYSDEC's environmental permit review process. Public participation in the NYSDEC environmental permit review process requires a program of activities that provides opportunities for stakeholders to be informed about and involved in the review of a proposed permit action.

The objective of this PPP is to outline and describe the program of activities that Revere will implement to actively seek and enhance public participation during the application review process.

2. PROJECT DESCRIPTION AND PROPOSED ACTION

2.1 Project Overview

Revere Copper Products, Inc. is an employee-owned copper manufacturing company and serves the architectural, electrical, telecommunications, air conditioning, industrial machinery, equipment and other markets. An important aspect of Revere's business is the supply of copper to support the electric vehicle (EV) and electrical transmission industries. The Revere facility is located at: One Revere Park, Rome, New York 13440.

Revere proposes to modify the facility's Air State Facility (ASF) Permit to include the replacement of an existing casting furnace with a new, more energy-efficient unit that will allow Revere Copper to increase the facility's product throughput capacity by approximately 23.3% while increasing natural gas consumption by only approximately 5%. To implement the proposed project, Revere has submitted an application to the NYSDEC Regional Permit Administrator to modify and renew its ASF Permit in accordance with Title 6 of the New York Code of Rules and Regulations (6 NYCRR), Part 201-5.

2.2 Nature of the Proposed Project/Action and Purpose

Revere Copper is seeking to modify and renew the facility's ASF Permit. Revere Copper is currently operating under ASF Permit No. 6--3013-00091 as issued by the NYSDEC that was effective on November 1, 2013, and modified March 24, 2015; and set to expire October 31, 2023.

Currently, Revere Copper operates boilers, furnaces, and metal working equipment. The ASF Permit caps facility emissions for total particulates, particulate matter with an aerometric diameter of less than 10 microns (PM_0), particulate matter with an aerometric diameter of less than 2.5 ($PM_{2.5}$), oxides of nitrogen (NOx), and sulfur dioxide (SO_2). As part of the renewal application, Revere Copper is not requesting any changes to these emissions caps except for removing the emissions cap on sulfur dioxide. As discussed below, Revere Copper's change from using No. 6 oil to No. 2 oil as the backup fuel source in its boilers will reduce facility-wide potential emissions of sulfur dioxide to well below 100 tons per year.

Revere Copper is requesting to modify the permit as follows:

- The facility no longer produces or uses brass. Therefore, it is no longer subject to Title 40 of the Code of Federal Regulations (40 CFR) Part 63, Subpart TTTTTT – National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources;
- Replace No. 6 residual fuel oil with No. 2 distillate fuel oil as the backup fuel fired by the three main boilers;
- The three gas-fired boilers in Emission Unit U-COMB1 meet the definition of gas-fired boilers in 40 CFR Part 63, Subpart JJJJJJ and therefore, Subpart JJJJJJ requirements do not apply to the facility and should be removed from the permit;
- Replace an existing casting furnace with a new, similar, but more efficient induction furnace. The equipment upgrade will result in greater production at the facility and an increase in regulated air contaminants ranging from a nominal 1 - 2% up to approximately 16%, dependent upon the individual air contaminant and the changes in fuel type combusted;
- Removal of equipment and emission points no longer present at the facility.

The proposed changes to the ASF will not impact the footprint of Revere Copper and will use existing building space.

2.3 Potential Impacts

2.3.1 Facility Operations

The replacement of the existing casting furnace with a similar induction furnace will provide an estimated 23.3% increase in output casting capability. This project will create approximately 40 new, local, high-paying permanent jobs.

Switching to No. 2 Distillate fuel oil (diesel fuel) burns cleaner than No. 6 residual fuel oil and will therefore generate less overall air emissions from the three main boilers.

The other changes to the permit listed above are administrative in nature and will not impact current facility operations.

2.3.2 Air Emission Impacts

Table 1 provides a summary of the air contaminants from the Revere facility for both actual emissions as well as the potential to emit for each of the criteria and other regulated air contaminants.

Table 1. Summary of Potential and Actual Annual Emissions of Regulated Air Contaminants*

Air Contaminant	Potential Annual Emissions		Projected Actual Annual Emissions	
	(lbs/year)	(tons/year)	(lbs/year)	(tons/year)
Carbon Monoxide (CO)	187,098	93.5	49,626	24.8
Oxides of Nitrogen (NOx)	299,296	149.6	60,262	30.1
Sulfur Dioxide (SO_2)	2,601	1.3	372	0.19
Particulate Matter, total (TPM)	103,357	51.7	44,768	22.4
PM_{10}	58,857	29.4	25,576	12.8
$PM_{2.5}$	48,273	24.2	20,110	10.1
Volatile Organic Compounds (VOCs)	13,873	6.9	3,628	1.8

Air Contaminant	Potential Annual Emissions		Projected Actual Annual Emissions	
	(lbs/year)	(tons/year)	(lbs/year)	(tons/year)
Total Hazardous Air Pollutants (HAPs)	4,206	2.1	1,120	0.56

*Derived from Revere Emission Inventory_Update_0720_2023.xlsx, Appendix C, Table 2 of the revised air permit renewal application. (RAMBOLL)

Emissions capping provisions have been included in the permit modification and renewal application for emissions of NOx, SO_2, total PM, PM_{10}, and $PM_{2.5}$ to avoid triggering the Major Source thresholds for these air contaminants that would otherwise require the Revere facility to apply for a Major Source Air Operating (Title V) Permit.

Based on the information summarized in Table 1 above, and the air dispersion modeling analysis performed by RAMBOLL, the predicted offsite concentrations of all regulated air contaminants from the Revere facility operations do not result in any exceedances of the National Ambient Air Quality Standards (NAAQS) or New York’s Short-term Guideline Concentrations (SGCs) or Annual Guideline Concentrations (AGCs).

This analysis indicates that the air emissions from the Revere are protective of human health and environment surrounding the facility.

2.3.3 Traffic Impacts

The new casting furnace’s increased production capacity (up to 23.3%) will also result in an increase in deliveries to and product shipments from the facility via truck traffic. Revere has estimated that this will mean 3 more truck deliveries of raw material and supplies to the facility per day, and 3 more truck shipments of product leaving the Rome facility per day.

Similarly, the additional employee vehicle traffic from the approximately 40 additional employees across the 24-hour per day, 7 days per week shifts that Revere follows means that on average, less than 13 employee vehicles will be added to the vehicle traffic during shift changes over the three daily operating shifts.

The roadway infrastructure connecting the Revere facility to the Interstate Highway System is adequately sized and designed to handle this nominal increase in vehicle traffic.

3. STAKEHOLDER IDENTIFICATION & CONTACT LIST

A contact list consisting of the names, addresses, phone numbers, or email addresses of stakeholders to the proposed project is provided in Appendix A. The contact list includes individuals and organizations with a direct stake in the proposed project and people and individuals and organizations that have expressed interest in the proposed project or similar projects affecting the same neighborhood or community.

To develop an initial contact list, Revere used geographic information services (GIS) to identify the residential properties located within the PEJA and the Disadvantaged Communities (DAC) surrounding the Revere facility and expanded the contact list to include those residential properties located within a ½-mile radius of the facility location that could be or potentially could be affected by the facility operations. Figure 2 provides a representation of the ½ mile used to compile the contact information of residential properties surrounding the Revere facility.

In addition, local community elected and government officials, community leaders, civic and recreational organizations, environmental and religious groups were compiled through readily and publicly available online database resources and incorporated into the initial contact list.

The current contact list includes local government and elected officials; business owners, residents, and occupants; local civic, community, environmental and religious organizations; and local news media.

Revere will use this contact list to communicate and disseminate information about the proposed project and ASF Permit application review process to the affected community and stakeholders. At minimum, this includes distribution of the written information and outreach materials described in Section 5 to inform the community about upcoming public meetings and opportunities for public participation.

The contact list will be reviewed periodically and updated as appropriate throughout the ASF Permit application review process. Revere will update the contact list with any new stakeholders identified during the public meeting or execution of other PPP components. In addition, individuals and organizations will be added to the contact list upon request. Such requests should be submitted to the project liaison identified in Section 6. Other additions to the contact list may be made at the discretion of Revere or, at the request of the NYSDEC project manager, in consultation with other NYSDEC staff, as appropriate. Please refer to Appendix A for the complete contact list compiled by Revere.

4. PROJECT LIAISON

A representative from the project team will be available during business hours at:

Mr. Tim Rosbrook - Sr. Vice President of Human Resources
Revere Copper Products, Inc.
One Revere Park
Rome, New York 13440
Phone:315-338-2178
Email: trosbrook@reverecopper.com

Impacted residents and interested stakeholders can contact the project liaison listed above to provide input to the project team, discuss any issues or concerns and/or to ask questions or request information. The project liaison shall respond in a timely manner and in the manner appropriate to question or information request received. The project liaison will be responsible for tracking and documenting public input, inquiries, questions, and information requests received, along with responses provided.

5. PUBLIC OUTREACH ACTIVITIES

Revere will use a range of engagement strategies and conduct various public outreach activities to facilitate participation, involvement, and direct communication with the affected community during the permit application review process. Revere will implement the public outreach activities outlined below once this PPP has been finalized and approved by NYSDEC.

In compliance with the requirements of CP-29, Revere will hold at least one public information meeting to keep the public informed about the proposed project and the environmental permit review process. At a minimum, Revere will prepare, distribute and post written information and materials, including a meeting notice and fact sheet, to encourage dialogue and solicit input from interested stakeholders during the permit application review process. In addition, to complement the minimum requirements, Revere will send invitations to the residents and stakeholders within a ½-mile radius of the facility to ensure that the local stakeholders are adequately notified in advance of the planned meeting(s). All public outreach materials and information will be prepared and presented in an easy-to-read, understandable format, using plain language free of legal terminology, and geared towards a non-technical audience.

The public meeting notice and fact sheet will be made available and disseminated in English language. Based on Revere's efforts and review of the local demographics and Census tract data of the potential Environmental Justice (EJ) areas and Disadvantaged Communities (DACs) surrounding the facility, less than 2% of the population across the EJ/DAC Census tracts do not read and comprehend English. However, the public can contact the project liaison regarding the availability of language assistance and to request that the notice and fact sheet are translated into another language for comprehension by non-English speaking or limited proficiency stakeholders, if needed. Please refer to Appendix B for detailed information on the analysis performed regarding the need to language translation services.

5.1 Public Meeting

At the discretion of NYSDEC and, depending on the scale and nature of a project, one or more public meeting(s) must be conducted to satisfy the intent of CP-29.

A meeting is typically required near the end of the permit application review process to inform the public about: the status of, or, if applicable, the availability of, final application materials and draft permits for review; the pending NYSDEC public comment period, and the deadline to submit written comments to NYSDEC, if established; and the eventual final decision.

Public Meeting

Revere will facilitate a public meeting on Monday, November 6, 2023 from 6:00 – 7":00 PM to:

- Inform the public about the proposed project and permit application review status.
- Provide the opportunity for stakeholders to ask questions and express concerns about the project and identify how to obtain information or answers to questions after the meeting has concluded.
- Inform attendees how they may submit written comments on the permit application to the NYSDEC during the public comment period and, if available, identify any applicable deadlines.

Necessary Meeting Discussion Points and Requirements

All meetings will be facilitated by Revere and/or ERM and/or Ramboll (consultants on the project team (project personnel)) in person and via videoconferencing technology platform (e.g., MS TEAMS, ZOOM, etc.). During the meeting, Revere and/or project personnel will present a brief overview of the project, including any relevant background information, details on the permitting action, scope of work, schedule, and community impacts. The second part of the meeting will include a question-and answer-portion where the floor will be open for attendees to ask questions, make remarks, and/or express concerns. In addition, the following discussion points will be addressed:

- Provide an update on the permit application review process and identify outstanding application requirements and future milestones in the application review process.
- Make it clear that the meeting is being held prior to NYSDEC's permitting decision for the project.
- Identify the location of the online document repository and provide directions on how attendees may obtain and review materials relevant to the application, documents related to the meeting and other public participation plan components.
- Identify and provide contact information for the project liaison and announce procedures for how attendees may obtain answers to questions after the meeting has concluded and interested

stakeholders can submit questions, express concerns, or request additional information by telephone, email, and in writing.

- Announce any future outreach, opportunities for public participation, and /or required follow-up with attendees including, but not limited to: additional meetings and future mailings, including, but not limited to the Notice of Complete Application.

Attendance will be recorded during the meeting using hardcopy sign-in sheets and recording of videoconference participant identification. Revere will track the number of attendees for all meetings held during implementation of this PPP and, where feasible and applicable, identify any affiliation of participants and interests represented at the meeting. In addition, Revere will be responsible for documenting meeting notes or minutes, along with a record of comments and questions raised in the meeting and respective responses and answers provided. Attendees not identified on the contact list will have the option to be added in the event of future meetings or information sharing.

5.2 Public Meeting Notice Preparation and Distribution

Information regarding the details of the public meeting(s) and how to participate is contained in the reader-friendly meeting mailing post card and window poster notice(s) shown in Appendix C. The notice has been prepared in English and, if needed, will be translated into additional languages by a certified translator. Through this notice, the public will be invited and encouraged to attend the public meeting either in-person or virtually and scheduled on November 6, 2023 from 6:00 - 7:00 PM.

Once the PPP has been approved by NYSDEC the public meeting notice will be posted and available in the document repository described in Section 6 of this document. At least two weeks in advance of the public meeting, the notice will be published in the Daily Sentinel which is a daily newspaper printed, published, and circulated throughout the Mohawk Valley with a daily circulation of over 8,500 copies. In addition, the public meeting notice will be mailed to the stakeholders identified in the contact list in Appendix A at least two weeks prior to the planned public meeting.

5.3 Fact Sheet Preparation and Distribution

Factual information on the proposed project, including an overview, purpose statement, and potential impacts, is outlined in the reader-friendly fact sheet shown in Appendix D. In addition, the fact sheet outlines how interested stakeholders can: participate in the permit application review process; access the online document repository to review relevant application materials prior to the public meeting; and contact the project team to obtain additional information. The fact sheet has been prepared in English, if needed, will be translated into additional languages by a certified translator.

Once the PPP has been approved by NYSDEC the fact sheet will be posted and available in the online document repository described in Section 6 of this document. No later than 2 weeks prior to the public meeting, Revere will distribute the fact sheet to provide stakeholders with relevant background on the proposed project and facilitate meaningful participation during the meeting. The fact sheet will be distributed together with the public meeting notice via email, mail and/or hand delivery (door-to-door).

The fact sheet(s) will also be posted within the vicinity of the project site and visible to the public. For example, they may be posted on some streetlight lampposts or bulletin boards located in the lobby of residential complex buildings or public facilities such as libraries, schools, or community centers within the project site.

Copies of the Public Participation Plan (PPP), the Draft Modified ASF Permit application and supporting documentation can be viewed at the following locations:

Jervis Public Library
613 N Washington Street
Rome, New York 13440
Phone: (315) 336-4570

Hours of Operation:

Monday Through Thursday	8:30 AM – 8:30 PM
Friday	8:30 AM – 5:30 PM
Saturday	10:00 AM – 3:00 PM
Sunday	Closed

New York State Department of Environmental Conservation
Region 6 Utica Sub-Office
207 Genesee Street
Utica, NY 13501
(315) 793-2554
Hours of Operation:
Monday through Friday: 8:30 AM-4:45 PM
Saturday & Sunday: Closed

5.4 Distribution of Notice of Complete Application

Once NYSDEC determines the application(s) for the proposed project is complete and provides the Notice of Complete Application (NOCA) to the applicant, Revere will distribute the NOCA and draft permit, if applicable, to any identified interested parties who specifically requests a paper copy of the documents, to provide notification regarding the start of the NYSDEC public comment period and to announce the deadline for submission of written comments to NYSDEC. If the NOCA is available at the time of the meeting, Revere will distribute the NOCA at the public meeting in electronic form. If the NOCA is not available at the time of the meeting Revere will provide explicit instructions on how to access the online repository and inform the attendees that, once available, the NOCA will be posted to the online document repository and will be distributed via email or mail as soon as possible, but no later than the date that the NOCA is published by Revere in the print edition of a paid local newspaper that is circulated at least weekly and available in the municipality in which the project is located.

5.5 Additional Outreach and Materials

Revere will print and distribute posters to be placed in the windows of local businesses announcing the public meeting(s), the dates(s) and time(s) of the planned public meeting(s). Appendix E provides an sample of the poster for placement at local businesses.

Additional information about the air permit renewal process and Revere's expansion project on the NYSDEC's website by following these links:

https://www.dec.ny.gov/chemical/8569.html#Permits
https://www.dec.ny.gov/dardata/boss/afs/permits/630130009100039_r1_1.pdf
https://www.dec.ny.gov/enb/enb.html

6. DOCUMENT REPOSITORY

An online document repository has been established for the community and interested stakeholders to access and review information about the project. The online repository available at https://reverecopper.com/public-information/ will provide information and documents relating to the project and permit application.

The repository will be updated throughout the application process with project-related information and written materials (i.e., application forms and supporting materials, draft permit, fact sheet, statement of basis (where applicable), the Notice of Complete Application provided by the NYSDEC, etc.).

7. SUBMISSIONS

7.1 Progress Report

No later than two weeks following public meeting(s) described in Section 5, Revere will submit a progress report to NYSDEC in the form of a brief memorandum or cover letter. At minimum, the progress report shall:

- describe progress to-date in implementing the approved PPP, identify the components of the plan yet to be implemented, and the timeline for completion of the PPP.
- summarize the public meeting (identify the time and date, number, affiliation and diversity of attendees and interests represented) and include or append copies of the written materials (i.e. virtual public meeting notice, fact sheet) along with any documentation that supports implementation of public outreach activities described in Section V, such as: the meeting sign-in sheet, record of attendees/participants, meeting presentation, notes or minutes, summary of questions and answers, and copy of newspaper notice or other proof of publication.
- identify any language or disability assistance requests received and document any considerations or accommodations made to-date,
- summarize or include a table that documents:
    - all substantive concerns raised to-date, either during the public meeting, or, received by the project liaison, along with responses provided by Revere
    - all resolved and outstanding issues
    - explain any project, design changes and/or measures to reduce potential impacts, either as result of community/public input or NYSDEC permitting review process.

The progress report will become part of the application record and will be posted to the online document repository so that it is readily available to the public.

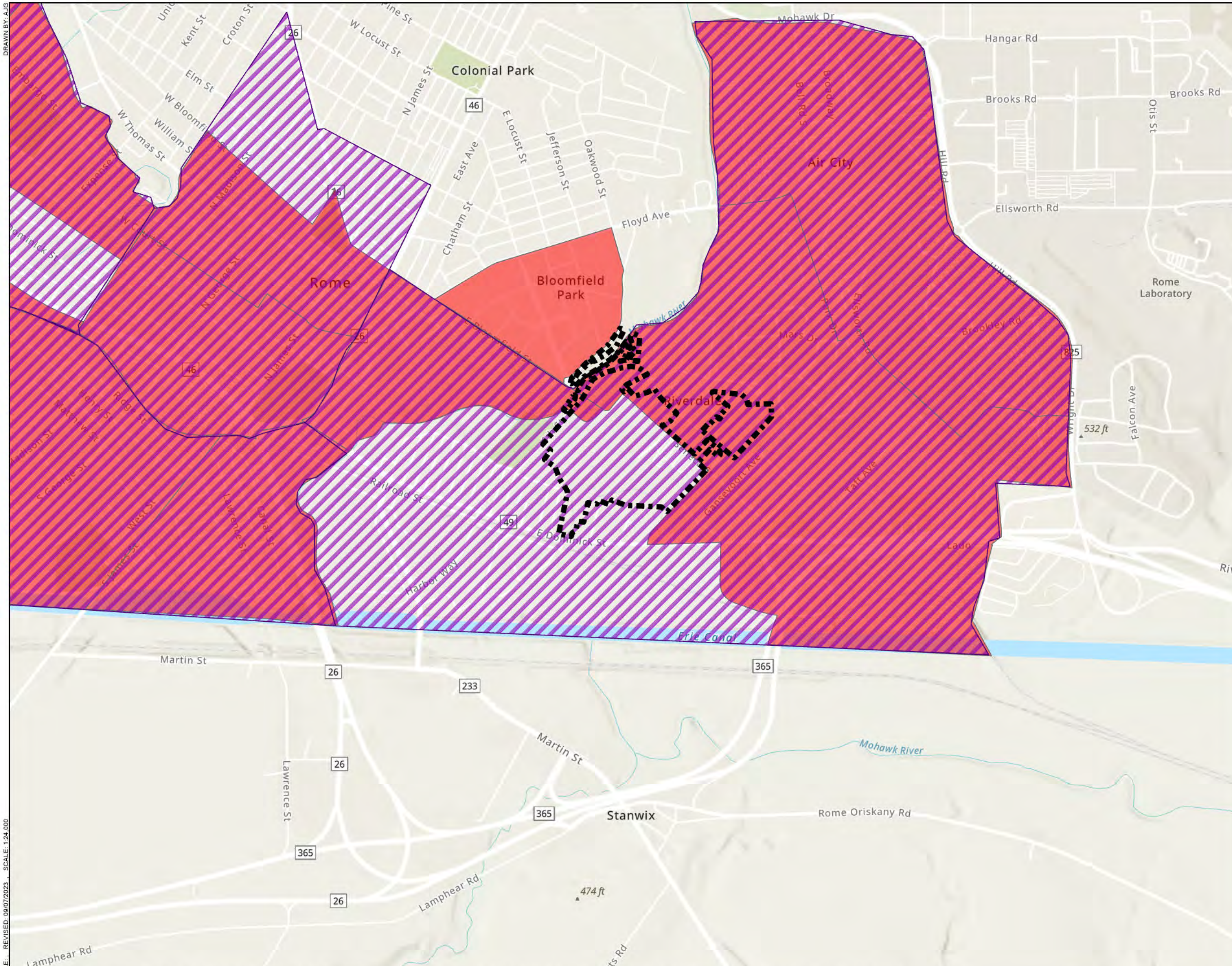
7.2 Final Summary Report and Written Certification

Upon completion of the public participation plan, Revere will submit written certification to NYSDEC to certify that it has fully executed and complied with the approved PPP. The certification shall be signed by Revere, or Revere's agent, and submitted to NYSDEC prior to a final decision on the application.

As part of the certification, Revere shall submit a final summary report documenting the implementation of this PPP. The report will summarize the activities that occurred in accordance with the PPP and will identify any substantive concerns raised by stakeholders during the public meeting, or, at any time throughout the permitting process and detail Revere's response(s) to any such concerns or questions. As applicable, the Final Summary Report may serve as the Progress report described in Section 7.1 to avoid potentially duplicative reporting. Revere will include, or append, any documentation that supports the final summary report, such as: the meeting sign-in sheet(s), record of attendees/participants, meeting presentation, notes or minutes, summary of questions and answers, and copy of newspaper notice or other proof of publication. In addition, the report will identify any changes or modifications to the proposed project that were made or considered by Revere to address or reduce concerns surrounding the permit application.

The final summary report and written certification will become part of the application record and will be posted to the online document repository so that it is readily available to the public.

FIGURES



Legend

- Property Boundary
- DAC
- Potential EJ Area

Notes:

1. New York State DEC: Critical Environmental Areas & Potential Environmental Justice Areas (2020)

2. NYSERDA: DAC (https://www.nyserda.ny.gov/ny/disadvantaged-communities)

N

0 1,000 2,000

Feet

Figure 1

Potential Environmental Justice/DAC Areas Map

Revere Copper

1 Revere Park Rome, NY 13440

Environmental Resources Management
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DRAWN BY: AJG SCALE: 1:24,000 REVISED: 09/07/2023 FILE:

Source: WGS 1984 Web Mercator Auxiliary Sphere Esri, NASA, NGA, USGS, FEMA, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, CGIAR, USGS, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Legend

- Approximate Property Boundary
- Quarter Mile Buffer
- Half Mile Buffer

Notes:

1. New York State DEC: Critical Environmental Areas & Potential Environmental Justice Areas (2020)

N

0 1,000 2,000
Feet

Figure 2
General Location and Surrounding Areas Map
Revere Copper
1 Revere Park Rome, NY 13440

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DRAWN BY: AJG

FILE: REVISED: 05/25/2023 SCALE: 1:18,000

Source: WGS 1984 Web Mercator Auxiliary Sphere Esri, CGIAR, USGS, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, Maxar

APPENDIX A CONTACT LISTS

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
1	514	Mayberry	Rd	Rome	NY	13440	Oneida
2	516	Mayberry	Rd	Rome	NY	13440	Oneida
3	518	Mayberry	Rd	Rome	NY	13440	Oneida
4	520	Mayberry	Rd	Rome	NY	13440	Oneida
5	524	Mayberry	Rd	Rome	NY	13440	Oneida
6	522	Mayberry	Rd	Rome	NY	13440	Oneida
7	528	Mayberry	Rd	Rome	NY	13440	Oneida
8	526	Mayberry	Rd	Rome	NY	13440	Oneida
9	530	Mayberry	Rd	Rome	NY	13440	Oneida
10	529	Mayberry	Rd	Rome	NY	13440	Oneida
11	527	Mayberry	Rd	Rome	NY	13440	Oneida
12	525	Mayberry	Rd	Rome	NY	13440	Oneida
13	523	Mayberry	Rd	Rome	NY	13440	Oneida
14	521	Mayberry	Rd	Rome	NY	13440	Oneida
15	517	Mayberry	Rd	Rome	NY	13440	Oneida
16	519	Mayberry	Rd	Rome	NY	13440	Oneida
17	515	Mayberry	Rd	Rome	NY	13440	Oneida
18	520	River	Rd	Rome	NY	13440	Oneida
19	518	River	Rd	Rome	NY	13440	Oneida
20	514	River	Rd	Rome	NY	13440	Oneida
21	516	River	Rd	Rome	NY	13440	Oneida
22	512	River	Rd	Rome	NY	13440	Oneida
23	513	River	Rd	Rome	NY	13440	Oneida
24	513	River	Rd	Rome	NY	13440	Oneida
25	515	River	Rd	Rome	NY	13440	Oneida
26	519	River	Rd	Rome	NY	13440	Oneida
27	517	River	Rd	Rome	NY	13440	Oneida
28	521	River	Rd	Rome	NY	13440	Oneida
29	521	River	Rd	Rome	NY	13440	Oneida
30	522	River	Rd	Rome	NY	13440	Oneida
31	527	River	Rd	Rome	NY	13440	Oneida
32	525	River	Rd	Rome	NY	13440	Oneida
33	524	River	Rd	Rome	NY	13440	Oneida
34	526	River	Rd	Rome	NY	13440	Oneida
35	528	River	Rd	Rome	NY	13440	Oneida
36	503	River	Rd	Rome	NY	13440	Oneida
37	501	River	Rd	Rome	NY	13440	Oneida
38	410	River	Rd	Rome	NY	13440	Oneida
39	412	River	Rd	Rome	NY	13440	Oneida
40	408	River	Rd	Rome	NY	13440	Oneida
41	406	River	Rd	Rome	NY	13440	Oneida
42	404	River	Rd	Rome	NY	13440	Oneida
43	402	River	Rd	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
44	400	River	Rd	Rome	NY	13440	Oneida
45	312	River	Rd	Rome	NY	13440	Oneida
46	314	River	Rd	Rome	NY	13440	Oneida
47	807	Culverton	Rd	Rome	NY	13440	Oneida
48	805	Culverton	Rd	Rome	NY	13440	Oneida
49	813	Culverton	Rd	Rome	NY	13440	Oneida
50	811	Culverton	Rd	Rome	NY	13440	Oneida
51	809	Culverton	Rd	Rome	NY	13440	Oneida
52	817	Culverton	Rd	Rome	NY	13440	Oneida
53	409	Mayberry	Rd	Rome	NY	13440	Oneida
54	407	Mayberry	Rd	Rome	NY	13440	Oneida
55	415	Mayberry	Rd	Rome	NY	13440	Oneida
56	413	Mayberry	Rd	Rome	NY	13440	Oneida
57	411	Mayberry	Rd	Rome	NY	13440	Oneida
58	417	Mayberry	Rd	Rome	NY	13440	Oneida
59	419	Mayberry	Rd	Rome	NY	13440	Oneida
60	604	Millbrook	Rd	Rome	NY	13440	Oneida
61	606	Millbrook	Rd	Rome	NY	13440	Oneida
62	608	Millbrook	Rd	Rome	NY	13440	Oneida
63	607	Millbrook	Rd	Rome	NY	13440	Oneida
64	605	Millbrook	Rd	Rome	NY	13440	Oneida
65	609	Millbrook	Rd	Rome	NY	13440	Oneida
66	613	Millbrook	Rd	Rome	NY	13440	Oneida
67	611	Millbrook	Rd	Rome	NY	13440	Oneida
68	612	Millbrook	Rd	Rome	NY	13440	Oneida
69	610	Millbrook	Rd	Rome	NY	13440	Oneida
70	504	River	Rd	Rome	NY	13440	Oneida
71	502	River	Rd	Rome	NY	13440	Oneida
72	505	River	Rd	Rome	NY	13440	Oneida
73	507	River	Rd	Rome	NY	13440	Oneida
74	509	River	Rd	Rome	NY	13440	Oneida
75	511	River	Rd	Rome	NY	13440	Oneida
76	508	River	Rd	Rome	NY	13440	Oneida
77	510	River	Rd	Rome	NY	13440	Oneida
78	506	River	Rd	Rome	NY	13440	Oneida
79	513	Mayberry	Rd	Rome	NY	13440	Oneida
80	511	Mayberry	Rd	Rome	NY	13440	Oneida
81	509	Mayberry	Rd	Rome	NY	13440	Oneida
82	507	Mayberry	Rd	Rome	NY	13440	Oneida
83	505	Mayberry	Rd	Rome	NY	13440	Oneida
84	602	Millbrook	Rd	Rome	NY	13440	Oneida
85	503	Mayberry	Rd	Rome	NY	13440	Oneida
86	600	Millbrook	Rd	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNar	PostType	ZipName	State	ZipCode	CountyName
87	536	Millbrook	Rd	Rome	NY	13440	Oneida
88	502	Mayberry	Rd	Rome	NY	13440	Oneida
89	504	Mayberry	Rd	Rome	NY	13440	Oneida
90	506	Mayberry	Rd	Rome	NY	13440	Oneida
91	508	Mayberry	Rd	Rome	NY	13440	Oneida
92	510	Mayberry	Rd	Rome	NY	13440	Oneida
93	512	Mayberry	Rd	Rome	NY	13440	Oneida
94	520	Millbrook	Rd	Rome	NY	13440	Oneida
95	518	Millbrook	Rd	Rome	NY	13440	Oneida
96	522	Millbrook	Rd	Rome	NY	13440	Oneida
97	524	Millbrook	Rd	Rome	NY	13440	Oneida
98	528	Millbrook	Rd	Rome	NY	13440	Oneida
99	526	Millbrook	Rd	Rome	NY	13440	Oneida
100	532	Millbrook	Rd	Rome	NY	13440	Oneida
101	530	Millbrook	Rd	Rome	NY	13440	Oneida
102	534	Millbrook	Rd	Rome	NY	13440	Oneida
103	527	Millbrook	Rd	Rome	NY	13440	Oneida
104	525	Millbrook	Rd	Rome	NY	13440	Oneida
105	523	Millbrook	Rd	Rome	NY	13440	Oneida
106	521	Millbrook	Rd	Rome	NY	13440	Oneida
107	519	Millbrook	Rd	Rome	NY	13440	Oneida
108	517	Millbrook	Rd	Rome	NY	13440	Oneida
109	515	Millbrook	Rd	Rome	NY	13440	Oneida
110	513	Millbrook	Rd	Rome	NY	13440	Oneida
111	511	Millbrook	Rd	Rome	NY	13440	Oneida
112	921	Cayuga	St	Rome	NY	13440	Oneida
113	919	Cayuga	St	Rome	NY	13440	Oneida
114	917	Cayuga	St	Rome	NY	13440	Oneida
115	915	Cayuga	St	Rome	NY	13440	Oneida
116	913	Cayuga	St	Rome	NY	13440	Oneida
117	529	Millbrook	Rd	Rome	NY	13440	Oneida
118	418	Mayberry	Rd	Rome	NY	13440	Oneida
119	416	Mayberry	Rd	Rome	NY	13440	Oneida
120	907	Cayuga	St	Rome	NY	13440	Oneida
121	905	Cayuga	St	Rome	NY	13440	Oneida
122	903	Cayuga	St	Rome	NY	13440	Oneida
123	904	Cayuga	St	Rome	NY	13440	Oneida
124	906	Cayuga	St	Rome	NY	13440	Oneida
125	909	Cayuga	St	Rome	NY	13440	Oneida
126	911	Cayuga	St	Rome	NY	13440	Oneida
127	910	Cayuga	St	Rome	NY	13440	Oneida
128	916	Cayuga	St	Rome	NY	13440	Oneida
129	914	Cayuga	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
130	912	Cayuga	St	Rome	NY	13440	Oneida
131	902	Cayuga	St	Rome	NY	13440	Oneida
132	406	Mayberry	Rd	Rome	NY	13440	Oneida
133	404	Mayberry	Rd	Rome	NY	13440	Oneida
134	402	Mayberry	Rd	Rome	NY	13440	Oneida
135	400	Mayberry	Rd	Rome	NY	13440	Oneida
136	310	Mayberry	Rd	Rome	NY	13440	Oneida
137	310	Mayberry	Rd	Rome	NY	13440	Oneida
138	907	Culverton	Rd	Rome	NY	13440	Oneida
139	909	Culverton	Rd	Rome	NY	13440	Oneida
140	908	Culverton	Rd	Rome	NY	13440	Oneida
141	912	Culverton	Rd	Rome	NY	13440	Oneida
142	915	Culverton	Rd	Rome	NY	13440	Oneida
143	913	Culverton	Rd	Rome	NY	13440	Oneida
144	911	Culverton	Rd	Rome	NY	13440	Oneida
145	917	Culverton	Rd	Rome	NY	13440	Oneida
146	918	Cayuga	St	Rome	NY	13440	Oneida
147	313	Gansevoor	Ave	Rome	NY	13440	Oneida
148	315	Gansevoor	Ave	Rome	NY	13440	Oneida
149	311	Gansevoor	Ave	Rome	NY	13440	Oneida
150	309	Gansevoor	Ave	Rome	NY	13440	Oneida
151	307	Gansevoor	Ave	Rome	NY	13440	Oneida
152	307	Gansevoor	Ave	Rome	NY	13440	Oneida
153	308	Gansevoor	Ave	Rome	NY	13440	Oneida
154	306	Gansevoor	Ave	Rome	NY	13440	Oneida
155	306	Gansevoor	Ave	Rome	NY	13440	Oneida
156	306	Gansevoor	Ave	Rome	NY	13440	Oneida
157	306	Gansevoor	Ave	Rome	NY	13440	Oneida
158	1014	Cayuga	St	Rome	NY	13440	Oneida
159	314	Gansevoor	Ave	Rome	NY	13440	Oneida
160	312	Gansevoor	Ave	Rome	NY	13440	Oneida
161	310	Gansevoor	Ave	Rome	NY	13440	Oneida
162	310	Gansevoor	Ave	Rome	NY	13440	Oneida
163	317	Gansevoor	Ave	Rome	NY	13440	Oneida
164	1012	Cayuga	St	Rome	NY	13440	Oneida
165	400	Gansevoor	Ave	Rome	NY	13440	Oneida
166	400	Gansevoor	Ave	Rome	NY	13440	Oneida
167	400	Gansevoor	Ave	Rome	NY	13440	Oneida
168	400	Gansevoor	Ave	Rome	NY	13440	Oneida
169	402	Gansevoor	Ave	Rome	NY	13440	Oneida
170	402	Gansevoor	Ave	Rome	NY	13440	Oneida
171	402	Gansevoor	Ave	Rome	NY	13440	Oneida
172	402	Gansevoor	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
173	407	Gansevoor	Ave	Rome	NY	13440	Oneida
174	401	Gansevoor	Ave	Rome	NY	13440	Oneida
175	319	Gansevoor	Ave	Rome	NY	13440	Oneida
176	413	Gansevoor	Ave	Rome	NY	13440	Oneida
177	408	Gansevoor	Ave	Rome	NY	13440	Oneida
178	411	Gansevoor	Ave	Rome	NY	13440	Oneida
179	409	Gansevoor	Ave	Rome	NY	13440	Oneida
180	409	Gansevoor	Ave	Rome	NY	13440	Oneida
181	409	Gansevoor	Ave	Rome	NY	13440	Oneida
182	409	Gansevoor	Ave	Rome	NY	13440	Oneida
183	404	Gansevoor	Ave	Rome	NY	13440	Oneida
184	404	Gansevoor	Ave	Rome	NY	13440	Oneida
185	406	Gansevoor	Ave	Rome	NY	13440	Oneida
186	410	Gansevoor	Ave	Rome	NY	13440	Oneida
187	412	Gansevoor	Ave	Rome	NY	13440	Oneida
188	414	Gansevoor	Ave	Rome	NY	13440	Oneida
189	125	Park	Dr	Rome	NY	13440	Oneida
190	3121	Park	Dr	Rome	NY	13440	Oneida
191	3119	Park	Dr	Rome	NY	13440	Oneida
192	965	Park	Dr	Rome	NY	13440	Oneida
193	963	Park	Dr	Rome	NY	13440	Oneida
194	3124	Park	Dr	Rome	NY	13440	Oneida
195	964	Park	Dr	Rome	NY	13440	Oneida
196	962	Park	Dr	Rome	NY	13440	Oneida
197	96	Park	Dr	Rome	NY	13440	Oneida
198	3123	Park	Dr	Rome	NY	13440	Oneida
199	97	Park	Dr	Rome	NY	13440	Oneida
200	973	Park	Dr	Rome	NY	13440	Oneida
201	970	Park	Dr	Rome	NY	13440	Oneida
202	501	Millbrook	Rd	Rome	NY	13440	Oneida
203	500	Millbrook	Rd	Rome	NY	13440	Oneida
204	503	Millbrook	Rd	Rome	NY	13440	Oneida
205	507	Millbrook	Rd	Rome	NY	13440	Oneida
206	505	Millbrook	Rd	Rome	NY	13440	Oneida
207	509	Millbrook	Rd	Rome	NY	13440	Oneida
208	508	Millbrook	Rd	Rome	NY	13440	Oneida
209	506	Millbrook	Rd	Rome	NY	13440	Oneida
210	504	Millbrook	Rd	Rome	NY	13440	Oneida
211	502	Millbrook	Rd	Rome	NY	13440	Oneida
212	510	Millbrook	Rd	Rome	NY	13440	Oneida
213	512	Millbrook	Rd	Rome	NY	13440	Oneida
214	514	Millbrook	Rd	Rome	NY	13440	Oneida
215	516	Millbrook	Rd	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
216	3122	Park	Dr	Rome	NY	13440	Oneida
217	958	Park	Dr	Rome	NY	13440	Oneida
218	1213	Cayuga	St	Rome	NY	13440	Oneida
219	1116	Cayuga	St	Rome	NY	13440	Oneida
220	1107	Cayuga	St	Rome	NY	13440	Oneida
221	1209	Cayuga	St	Rome	NY	13440	Oneida
222	1105	Cayuga	St	Rome	NY	13440	Oneida
223	1019	Cayuga	St	Rome	NY	13440	Oneida
224	1108	Cayuga	St	Rome	NY	13440	Oneida
225	1112	Cayuga	St	Rome	NY	13440	Oneida
226	1114	Cayuga	St	Rome	NY	13440	Oneida
227	277	Panesi	Ave	Rome	NY	13440	Oneida
228	225	Panesi	Ave	Rome	NY	13440	Oneida
229	212	Panesi	Ave	Rome	NY	13440	Oneida
230	208	Panesi	Ave	Rome	NY	13440	Oneida
231	210	Panesi	Ave	Rome	NY	13440	Oneida
232	7109	Herkimer	Ave	Rome	NY	13440	Oneida
233	7105	Herkimer	Ave	Rome	NY	13440	Oneida
234	7099	Herkimer	Ave	Rome	NY	13440	Oneida
235	6955	Dominick	St	Rome	NY	13440	Oneida
236	7093	Herkimer	Ave	Rome	NY	13440	Oneida
237	7093	Herkimer	Ave	Rome	NY	13440	Oneida
238	7093	Herkimer	Ave	Rome	NY	13440	Oneida
239	1207	Seneca	St	Rome	NY	13440	Oneida
240	1208	Seneca	St	Rome	NY	13440	Oneida
241	1205	Seneca	St	Rome	NY	13440	Oneida
242	1205	Seneca	St	Rome	NY	13440	Oneida
243	1205	Seneca	St	Rome	NY	13440	Oneida
244	200	Panesi	Ave	Rome	NY	13440	Oneida
245	1203	Seneca	St	Rome	NY	13440	Oneida
246	1111	Seneca	St	Rome	NY	13440	Oneida
247	1113	Seneca	St	Rome	NY	13440	Oneida
248	1113	Seneca	St	Rome	NY	13440	Oneida
249	1113	Seneca	St	Rome	NY	13440	Oneida
250	1112	Seneca	St	Rome	NY	13440	Oneida
251	1200	Seneca	St	Rome	NY	13440	Oneida
252	1202	Seneca	St	Rome	NY	13440	Oneida
253	1204	Seneca	St	Rome	NY	13440	Oneida
254	108	Panesi	Ave	Rome	NY	13440	Oneida
255	101	Panesi	Ave	Rome	NY	13440	Oneida
256	101	Panesi	Ave	Rome	NY	13440	Oneida
257	101	Panesi	Ave	Rome	NY	13440	Oneida
258	101	Panesi	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
259	1505	Dominick	St	Rome	NY	13440	Oneida
260	1503	Dominick	St	Rome	NY	13440	Oneida
261	1501	Dominick	St	Rome	NY	13440	Oneida
262	100	Panesi	Ave	Rome	NY	13440	Oneida
263	1513	Dominick	St	Rome	NY	13440	Oneida
264	1109	Oneida	St	Rome	NY	13440	Oneida
265	1111	Oneida	St	Rome	NY	13440	Oneida
266	1107	Oneida	St	Rome	NY	13440	Oneida
267	1415	Dominick	St	Rome	NY	13440	Oneida
268	1413	Dominick	St	Rome	NY	13440	Oneida
269	1409	Dominick	St	Rome	NY	13440	Oneida
270	1409	Dominick	St	Rome	NY	13440	Oneida
271	1418	Dominick	St	Rome	NY	13440	Oneida
272	1418	Dominick	St	Rome	NY	13440	Oneida
273	1416	Dominick	St	Rome	NY	13440	Oneida
274	1414	Dominick	St	Rome	NY	13440	Oneida
275	1412	Dominick	St	Rome	NY	13440	Oneida
276	1400	Dominick	St	Rome	NY	13440	Oneida
277	1212	Dominick	St	Rome	NY	13440	Oneida
278	1303	Dominick	St	Rome	NY	13440	Oneida
279	1303	Dominick	St	Rome	NY	13440	Oneida
280	1301	Dominick	St	Rome	NY	13440	Oneida
281	1215	Dominick	St	Rome	NY	13440	Oneida
282	1217	Dominick	St	Rome	NY	13440	Oneida
283	1217	Dominick	St	Rome	NY	13440	Oneida
284	1209	Dominick	St	Rome	NY	13440	Oneida
285	1211	Dominick	St	Rome	NY	13440	Oneida
286	1127	Dominick	St	Rome	NY	13440	Oneida
287	107	Locomotiv	Ave	Rome	NY	13440	Oneida
288	109	Locomotiv	Ave	Rome	NY	13440	Oneida
289	106	Locomotiv	Ave	Rome	NY	13440	Oneida
290	106	Locomotiv	Ave	Rome	NY	13440	Oneida
291	106	Locomotiv	Ave	Rome	NY	13440	Oneida
292	112	Locomotiv	Ave	Rome	NY	13440	Oneida
293	112	Locomotiv	Ave	Rome	NY	13440	Oneida
294	112	Locomotiv	Ave	Rome	NY	13440	Oneida
295	112	Locomotiv	Ave	Rome	NY	13440	Oneida
296	104	Benedict	Ave	Rome	NY	13440	Oneida
297	106	Benedict	Ave	Rome	NY	13440	Oneida
298	108	Benedict	Ave	Rome	NY	13440	Oneida
299	110	Benedict	Ave	Rome	NY	13440	Oneida
300	110	Benedict	Ave	Rome	NY	13440	Oneida
301	112	Dunn	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNar	PostType	ZipName	State	ZipCode	CountyName
302	116	Locomotiv	Ave	Rome	NY	13440	Oneida
303	114	Locomotiv	Ave	Rome	NY	13440	Oneida
304	123	Locomotiv	Ave	Rome	NY	13440	Oneida
305	117	Locomotiv	Ave	Rome	NY	13440	Oneida
306	115	Locomotiv	Ave	Rome	NY	13440	Oneida
307	115	Locomotiv	Ave	Rome	NY	13440	Oneida
308	113	Locomotiv	Ave	Rome	NY	13440	Oneida
309	111	Locomotiv	Ave	Rome	NY	13440	Oneida
310	111	Locomotiv	Ave	Rome	NY	13440	Oneida
311	111	Locomotiv	Ave	Rome	NY	13440	Oneida
312	125	Locomotiv	Ave	Rome	NY	13440	Oneida
313	120	Locomotiv	Ave	Rome	NY	13440	Oneida
314	124	Locomotiv	Ave	Rome	NY	13440	Oneida
315	114	Dunn	Ave	Rome	NY	13440	Oneida
316	118	Dunn	Ave	Rome	NY	13440	Oneida
317	118	Dunn	Ave	Rome	NY	13440	Oneida
318	120	Dunn	Ave	Rome	NY	13440	Oneida
319	120	Dunn	Ave	Rome	NY	13440	Oneida
320	122	Dunn	Ave	Rome	NY	13440	Oneida
321	122	Dunn	Ave	Rome	NY	13440	Oneida
322	122	Dunn	Ave	Rome	NY	13440	Oneida
323	126	Locomotiv	Ave	Rome	NY	13440	Oneida
324	124	Dunn	Ave	Rome	NY	13440	Oneida
325	126	Dunn	Ave	Rome	NY	13440	Oneida
326	124	Nock	St	Rome	NY	13440	Oneida
327	122	Nock	St	Rome	NY	13440	Oneida
328	120	Nock	St	Rome	NY	13440	Oneida
329	121	Nock	St	Rome	NY	13440	Oneida
330	115	Nock	St	Rome	NY	13440	Oneida
331	109	Nock	St	Rome	NY	13440	Oneida
332	111	Nock	St	Rome	NY	13440	Oneida
333	113	Nock	St	Rome	NY	13440	Oneida
334	105	Nock	St	Rome	NY	13440	Oneida
335	105	Nock	St	Rome	NY	13440	Oneida
336	105	Nock	St	Rome	NY	13440	Oneida
337	105	Nock	St	Rome	NY	13440	Oneida
338	107	Nock	St	Rome	NY	13440	Oneida
339	104	Nock	St	Rome	NY	13440	Oneida
340	1307	Dominick	St	Rome	NY	13440	Oneida
341	1309	Dominick	St	Rome	NY	13440	Oneida
342	1333	Dominick	St	Rome	NY	13440	Oneida
343	1401	Dominick	St	Rome	NY	13440	Oneida
344	1403	Dominick	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
345	1405	Dominick	St	Rome	NY	13440	Oneida
346	109	Gansevoor	Ave	Rome	NY	13440	Oneida
347	107	Gansevoor	Ave	Rome	NY	13440	Oneida
348	114	Gansevoor	Ave	Rome	NY	13440	Oneida
349	1103	Oneida	St	Rome	NY	13440	Oneida
350	1101	Oneida	St	Rome	NY	13440	Oneida
351	203	Gansevoor	Ave	Rome	NY	13440	Oneida
352	113	Gansevoor	Ave	Rome	NY	13440	Oneida
353	132	Nock	St	Rome	NY	13440	Oneida
354	132	Nock	St	Rome	NY	13440	Oneida
355	132	Nock	St	Rome	NY	13440	Oneida
356	138	Nock	St	Rome	NY	13440	Oneida
357	138	Nock	St	Rome	NY	13440	Oneida
358	138	Nock	St	Rome	NY	13440	Oneida
359	1023	Oneida	St	Rome	NY	13440	Oneida
360	1021	Oneida	St	Rome	NY	13440	Oneida
361	210	Nock	St	Rome	NY	13440	Oneida
362	210	Nock	St	Rome	NY	13440	Oneida
363	210	Nock	St	Rome	NY	13440	Oneida
364	214	Nock	St	Rome	NY	13440	Oneida
365	215	Gansevoor	Ave	Rome	NY	13440	Oneida
366	213	Gansevoor	Ave	Rome	NY	13440	Oneida
367	209	Gansevoor	Ave	Rome	NY	13440	Oneida
368	205	Gansevoor	Ave	Rome	NY	13440	Oneida
369	200	Gansevoor	Ave	Rome	NY	13440	Oneida
370	202	Gansevoor	Ave	Rome	NY	13440	Oneida
371	206	Gansevoor	Ave	Rome	NY	13440	Oneida
372	214	Gansevoor	Ave	Rome	NY	13440	Oneida
373	214	Gansevoor	Ave	Rome	NY	13440	Oneida
374	208	Gansevoor	Ave	Rome	NY	13440	Oneida
375	217	Gansevoor	Ave	Rome	NY	13440	Oneida
376	217	Gansevoor	Ave	Rome	NY	13440	Oneida
377	217	Gansevoor	Ave	Rome	NY	13440	Oneida
378	221	Gansevoor	Ave	Rome	NY	13440	Oneida
379	221	Gansevoor	Ave	Rome	NY	13440	Oneida
380	221	Gansevoor	Ave	Rome	NY	13440	Oneida
381	221	Gansevoor	Ave	Rome	NY	13440	Oneida
382	218	Gansevoor	Ave	Rome	NY	13440	Oneida
383	216	Gansevoor	Ave	Rome	NY	13440	Oneida
384	1103	Seneca	St	Rome	NY	13440	Oneida
385	305	Gansevoor	Ave	Rome	NY	13440	Oneida
386	301	Gansevoor	Ave	Rome	NY	13440	Oneida
387	301	Gansevoor	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
388	301	Gansevoor	Ave	Rome	NY	13440	Oneida
389	223	Gansevoor	Ave	Rome	NY	13440	Oneida
390	223	Gansevoor	Ave	Rome	NY	13440	Oneida
391	1009	Seneca	St	Rome	NY	13440	Oneida
392	1005	Seneca	St	Rome	NY	13440	Oneida
393	1001	Seneca	St	Rome	NY	13440	Oneida
394	1001	Seneca	St	Rome	NY	13440	Oneida
395	937	Seneca	St	Rome	NY	13440	Oneida
396	1000	Seneca	St	Rome	NY	13440	Oneida
397	1004	Seneca	St	Rome	NY	13440	Oneida
398	1004	Seneca	St	Rome	NY	13440	Oneida
399	1004	Seneca	St	Rome	NY	13440	Oneida
400	224	Nock	St	Rome	NY	13440	Oneida
401	220	Nock	St	Rome	NY	13440	Oneida
402	220	Nock	St	Rome	NY	13440	Oneida
403	220	Nock	St	Rome	NY	13440	Oneida
404	220	Nock	St	Rome	NY	13440	Oneida
405	222	Nock	St	Rome	NY	13440	Oneida
406	921	Seneca	St	Rome	NY	13440	Oneida
407	906	Culverton	Rd	Rome	NY	13440	Oneida
408	308	Mayberry	Rd	Rome	NY	13440	Oneida
409	306	Mayberry	Rd	Rome	NY	13440	Oneida
410	304	Mayberry	Rd	Rome	NY	13440	Oneida
411	310	River	Rd	Rome	NY	13440	Oneida
412	308	River	Rd	Rome	NY	13440	Oneida
413	306	River	Rd	Rome	NY	13440	Oneida
414	302	River	Rd	Rome	NY	13440	Oneida
415	304	River	Rd	Rome	NY	13440	Oneida
416	131	McAvoy	Ave	Rome	NY	13440	Oneida
417	131	McAvoy	Ave	Rome	NY	13440	Oneida
418	131	McAvoy	Ave	Rome	NY	13440	Oneida
419	125	Spadafora	Ave	Rome	NY	13440	Oneida
420	125	Spadafora	Ave	Rome	NY	13440	Oneida
421	125	Spadafora	Ave	Rome	NY	13440	Oneida
422	200	6th	St	Rome	NY	13440	Oneida
423	201	6th	St	Rome	NY	13440	Oneida
424	118	6th	St	Rome	NY	13440	Oneida
425	116	6th	St	Rome	NY	13440	Oneida
426	116	6th	St	Rome	NY	13440	Oneida
427	116	6th	St	Rome	NY	13440	Oneida
428	116	6th	St	Rome	NY	13440	Oneida
429	115	6th	St	Rome	NY	13440	Oneida
430	115	6th	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
431	115	6th	St	Rome	NY	13440	Oneida
432	117	6th	St	Rome	NY	13440	Oneida
433	119	6th	St	Rome	NY	13440	Oneida
434	119	6th	St	Rome	NY	13440	Oneida
435	119	6th	St	Rome	NY	13440	Oneida
436	119	6th	St	Rome	NY	13440	Oneida
437	121	6th	St	Rome	NY	13440	Oneida
438	125	6th	St	Rome	NY	13440	Oneida
439	125	6th	St	Rome	NY	13440	Oneida
440	125	6th	St	Rome	NY	13440	Oneida
441	125	6th	St	Rome	NY	13440	Oneida
442	123	6th	St	Rome	NY	13440	Oneida
443	123	6th	St	Rome	NY	13440	Oneida
444	123	6th	St	Rome	NY	13440	Oneida
445	120	5th	St	Rome	NY	13440	Oneida
446	124	5th	St	Rome	NY	13440	Oneida
447	118	5th	St	Rome	NY	13440	Oneida
448	118	5th	St	Rome	NY	13440	Oneida
449	114	5th	St	Rome	NY	13440	Oneida
450	119	5th	St	Rome	NY	13440	Oneida
451	113	5th	St	Rome	NY	13440	Oneida
452	111	5th	St	Rome	NY	13440	Oneida
453	109	5th	St	Rome	NY	13440	Oneida
454	107	5th	St	Rome	NY	13440	Oneida
455	105	5th	St	Rome	NY	13440	Oneida
456	103	5th	St	Rome	NY	13440	Oneida
457	104	5th	St	Rome	NY	13440	Oneida
458	108	5th	St	Rome	NY	13440	Oneida
459	112	5th	St	Rome	NY	13440	Oneida
460	113	6th	St	Rome	NY	13440	Oneida
461	109	6th	St	Rome	NY	13440	Oneida
462	109	6th	St	Rome	NY	13440	Oneida
463	105	6th	St	Rome	NY	13440	Oneida
464	105	6th	St	Rome	NY	13440	Oneida
465	103	6th	St	Rome	NY	13440	Oneida
466	707	Dominick	St	Rome	NY	13440	Oneida
467	703	Dominick	St	Rome	NY	13440	Oneida
468	705	Dominick	St	Rome	NY	13440	Oneida
469	709	Dominick	St	Rome	NY	13440	Oneida
470	101	6th	St	Rome	NY	13440	Oneida
471	711	Dominick	St	Rome	NY	13440	Oneida
472	807	Dominick	St	Rome	NY	13440	Oneida
473	805	Dominick	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
474	801	Dominick	St	Rome	NY	13440	Oneida
475	106	6th	St	Rome	NY	13440	Oneida
476	104	6th	St	Rome	NY	13440	Oneida
477	104	6th	St	Rome	NY	13440	Oneida
478	104	6th	St	Rome	NY	13440	Oneida
479	104	6th	St	Rome	NY	13440	Oneida
480	108	6th	St	Rome	NY	13440	Oneida
481	110	6th	St	Rome	NY	13440	Oneida
482	110	6th	St	Rome	NY	13440	Oneida
483	111	6th	St	Rome	NY	13440	Oneida
484	112	6th	St	Rome	NY	13440	Oneida
485	112	6th	St	Rome	NY	13440	Oneida
486	112	6th	St	Rome	NY	13440	Oneida
487	112	6th	St	Rome	NY	13440	Oneida
488	114	6th	St	Rome	NY	13440	Oneida
489	114	6th	St	Rome	NY	13440	Oneida
490	110	6th	St	Rome	NY	13440	Oneida
491	112	Columbus	Ave	Rome	NY	13440	Oneida
492	107	Columbus	Ave	Rome	NY	13440	Oneida
493	107	Columbus	Ave	Rome	NY	13440	Oneida
494	107	Columbus	Ave	Rome	NY	13440	Oneida
495	105	Columbus	Ave	Rome	NY	13440	Oneida
496	108	Columbus	Ave	Rome	NY	13440	Oneida
497	106	Columbus	Ave	Rome	NY	13440	Oneida
498	103	Spadafora	Ave	Rome	NY	13440	Oneida
499	103	Spadafora	Ave	Rome	NY	13440	Oneida
500	907	Dominick	St	Rome	NY	13440	Oneida
501	903	Dominick	St	Rome	NY	13440	Oneida
502	901	Dominick	St	Rome	NY	13440	Oneida
503	102	Columbus	Ave	Rome	NY	13440	Oneida
504	101	Columbus	Ave	Rome	NY	13440	Oneida
505	103	Columbus	Ave	Rome	NY	13440	Oneida
506	103	Columbus	Ave	Rome	NY	13440	Oneida
507	103	Columbus	Ave	Rome	NY	13440	Oneida
508	103	Columbus	Ave	Rome	NY	13440	Oneida
509	811	Dominick	St	Rome	NY	13440	Oneida
510	813	Dominick	St	Rome	NY	13440	Oneida
511	819	Dominick	St	Rome	NY	13440	Oneida
512	811	Dominick	St	Rome	NY	13440	Oneida
513	915	Dominick	St	Rome	NY	13440	Oneida
514	900	Railroad	St	Rome	NY	13440	Oneida
515	919	Dominick	St	Rome	NY	13440	Oneida
516	921	Dominick	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNam	PostType	ZipName	State	ZipCode	CountyName
517	925	Dominick	St	Rome	NY	13440	Oneida
518	1001	Dominick	St	Rome	NY	13440	Oneida
519	1009	Dominick	St	Rome	NY	13440	Oneida
520	106	McAvoy	Ave	Rome	NY	13440	Oneida
521	108	McAvoy	Ave	Rome	NY	13440	Oneida
522	108	McAvoy	Ave	Rome	NY	13440	Oneida
523	108	McAvoy	Ave	Rome	NY	13440	Oneida
524	112	McAvoy	Ave	Rome	NY	13440	Oneida
525	114	McAvoy	Ave	Rome	NY	13440	Oneida
526	107	McAvoy	Ave	Rome	NY	13440	Oneida
527	107	McAvoy	Ave	Rome	NY	13440	Oneida
528	105	McAvoy	Ave	Rome	NY	13440	Oneida
529	105	McAvoy	Ave	Rome	NY	13440	Oneida
530	105	McAvoy	Ave	Rome	NY	13440	Oneida
531	103	McAvoy	Ave	Rome	NY	13440	Oneida
532	105	Spadafora	Ave	Rome	NY	13440	Oneida
533	105	Spadafora	Ave	Rome	NY	13440	Oneida
534	105	Spadafora	Ave	Rome	NY	13440	Oneida
535	107	Spadafora	Ave	Rome	NY	13440	Oneida
536	111	McAvoy	Ave	Rome	NY	13440	Oneida
537	113	McAvoy	Ave	Rome	NY	13440	Oneida
538	113	McAvoy	Ave	Rome	NY	13440	Oneida
539	113	McAvoy	Ave	Rome	NY	13440	Oneida
540	113	McAvoy	Ave	Rome	NY	13440	Oneida
541	115	McAvoy	Ave	Rome	NY	13440	Oneida
542	115	McAvoy	Ave	Rome	NY	13440	Oneida
543	115	McAvoy	Ave	Rome	NY	13440	Oneida
544	115	McAvoy	Ave	Rome	NY	13440	Oneida
545	123	McAvoy	Ave	Rome	NY	13440	Oneida
546	121	McAvoy	Ave	Rome	NY	13440	Oneida
547	117	McAvoy	Ave	Rome	NY	13440	Oneida
548	117	McAvoy	Ave	Rome	NY	13440	Oneida
549	117	McAvoy	Ave	Rome	NY	13440	Oneida
550	117	McAvoy	Ave	Rome	NY	13440	Oneida
551	120	McAvoy	Ave	Rome	NY	13440	Oneida
552	120	McAvoy	Ave	Rome	NY	13440	Oneida
553	120	McAvoy	Ave	Rome	NY	13440	Oneida
554	122	McAvoy	Ave	Rome	NY	13440	Oneida
555	124	McAvoy	Ave	Rome	NY	13440	Oneida
556	124	McAvoy	Ave	Rome	NY	13440	Oneida
557	125	McAvoy	Ave	Rome	NY	13440	Oneida
558	130	McAvoy	Ave	Rome	NY	13440	Oneida
559	130	McAvoy	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
560	128	McAvoy	Ave	Rome	NY	13440	Oneida
561	128	McAvoy	Ave	Rome	NY	13440	Oneida
562	126	McAvoy	Ave	Rome	NY	13440	Oneida
563	126	McAvoy	Ave	Rome	NY	13440	Oneida
564	126	McAvoy	Ave	Rome	NY	13440	Oneida
565	126	McAvoy	Ave	Rome	NY	13440	Oneida
566	118	McAvoy	Ave	Rome	NY	13440	Oneida
567	118	McAvoy	Ave	Rome	NY	13440	Oneida
568	118	McAvoy	Ave	Rome	NY	13440	Oneida
569	116	McAvoy	Ave	Rome	NY	13440	Oneida
570	128	Carey	St	Rome	NY	13440	Oneida
571	123	Carey	St	Rome	NY	13440	Oneida
572	122	Carey	St	Rome	NY	13440	Oneida
573	120	Carey	St	Rome	NY	13440	Oneida
574	120	Carey	St	Rome	NY	13440	Oneida
575	120	Carey	St	Rome	NY	13440	Oneida
576	120	Carey	St	Rome	NY	13440	Oneida
577	120	Carey	St	Rome	NY	13440	Oneida
578	116	Carey	St	Rome	NY	13440	Oneida
579	116	Carey	St	Rome	NY	13440	Oneida
580	116	Carey	St	Rome	NY	13440	Oneida
581	113	Carey	St	Rome	NY	13440	Oneida
582	115	Carey	St	Rome	NY	13440	Oneida
583	117	Carey	St	Rome	NY	13440	Oneida
584	111	Carey	St	Rome	NY	13440	Oneida
585	109	Carey	St	Rome	NY	13440	Oneida
586	109	Carey	St	Rome	NY	13440	Oneida
587	109	Carey	St	Rome	NY	13440	Oneida
588	109	Carey	St	Rome	NY	13440	Oneida
589	1101	Dominick	St	Rome	NY	13440	Oneida
590	1103	Dominick	St	Rome	NY	13440	Oneida
591	110	Carey	St	Rome	NY	13440	Oneida
592	1107	Dominick	St	Rome	NY	13440	Oneida
593	1120	Dominick	St	Rome	NY	13440	Oneida
594	1030	Dominick	St	Rome	NY	13440	Oneida
595	1020	Railroad	St	Rome	NY	13440	Oneida
596	1025	Dominick	St	Rome	NY	13440	Oneida
597	1020	Dominick	St	Rome	NY	13440	Oneida
598	1000	Railroad	St	Rome	NY	13440	Oneida
599	730	Railroad	St	Rome	NY	13440	Oneida
600	720	Railroad	St	Rome	NY	13440	Oneida
601	700	Railroad	St	Rome	NY	13440	Oneida
602	612	Dominick	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
603	701	Dominick	St	Rome	NY	13440	Oneida
604	611	Dominick	St	Rome	NY	13440	Oneida
605	609	Dominick	St	Rome	NY	13440	Oneida
606	607	Dominick	St	Rome	NY	13440	Oneida
607	114	4th	St	Rome	NY	13440	Oneida
608	114	4th	St	Rome	NY	13440	Oneida
609	114	4th	St	Rome	NY	13440	Oneida
610	116	4th	St	Rome	NY	13440	Oneida
611	116	4th	St	Rome	NY	13440	Oneida
612	116	4th	St	Rome	NY	13440	Oneida
613	116	4th	St	Rome	NY	13440	Oneida
614	118	4th	St	Rome	NY	13440	Oneida
615	120	4th	St	Rome	NY	13440	Oneida
616	120	4th	St	Rome	NY	13440	Oneida
617	124	4th	St	Rome	NY	13440	Oneida
618	124	4th	St	Rome	NY	13440	Oneida
619	124	4th	St	Rome	NY	13440	Oneida
620	124	4th	St	Rome	NY	13440	Oneida
621	124	4th	St	Rome	NY	13440	Oneida
622	122	4th	St	Rome	NY	13440	Oneida
623	122	4th	St	Rome	NY	13440	Oneida
624	126	4th	St	Rome	NY	13440	Oneida
625	128	4th	St	Rome	NY	13440	Oneida
626	127	4th	St	Rome	NY	13440	Oneida
627	127	4th	St	Rome	NY	13440	Oneida
628	129	4th	St	Rome	NY	13440	Oneida
629	129	4th	St	Rome	NY	13440	Oneida
630	129	4th	St	Rome	NY	13440	Oneida
631	129	4th	St	Rome	NY	13440	Oneida
632	130	4th	St	Rome	NY	13440	Oneida
633	130	4th	St	Rome	NY	13440	Oneida
634	348	Mohawk	St	Rome	NY	13440	Oneida
635	353	Mohawk	St	Rome	NY	13440	Oneida
636	355	Mohawk	St	Rome	NY	13440	Oneida
637	351	Mohawk	St	Rome	NY	13440	Oneida
638	349	Mohawk	St	Rome	NY	13440	Oneida
639	347	Mohawk	St	Rome	NY	13440	Oneida
640	347	Mohawk	St	Rome	NY	13440	Oneida
641	347	Mohawk	St	Rome	NY	13440	Oneida
642	347	Mohawk	St	Rome	NY	13440	Oneida
643	520	Bloomfielc	St	Rome	NY	13440	Oneida
644	522	Bloomfielc	St	Rome	NY	13440	Oneida
645	524	Bloomfielc	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
646	526	Bloomfielc	St	Rome	NY	13440	Oneida
647	602	Bloomfielc	St	Rome	NY	13440	Oneida
648	600	Bloomfielc	St	Rome	NY	13440	Oneida
649	601	Bloomfielc	St	Rome	NY	13440	Oneida
650	605	Bloomfielc	St	Rome	NY	13440	Oneida
651	603	Bloomfielc	St	Rome	NY	13440	Oneida
652	606	Bloomfielc	St	Rome	NY	13440	Oneida
653	604	Bloomfielc	St	Rome	NY	13440	Oneida
654	620	Bloomfielc	St	Rome	NY	13440	Oneida
655	622	Garden	St	Rome	NY	13440	Oneida
656	620	Garden	St	Rome	NY	13440	Oneida
657	615	Bloomfielc	St	Rome	NY	13440	Oneida
658	611	Bloomfielc	St	Rome	NY	13440	Oneida
659	613	Bloomfielc	St	Rome	NY	13440	Oneida
660	607	Bloomfielc	St	Rome	NY	13440	Oneida
661	609	Bloomfielc	St	Rome	NY	13440	Oneida
662	612	Garden	St	Rome	NY	13440	Oneida
663	610	Garden	St	Rome	NY	13440	Oneida
664	614	Garden	St	Rome	NY	13440	Oneida
665	616	Garden	St	Rome	NY	13440	Oneida
666	701	Garden	St	Rome	NY	13440	Oneida
667	703	Garden	St	Rome	NY	13440	Oneida
668	705	Garden	St	Rome	NY	13440	Oneida
669	707	Garden	St	Rome	NY	13440	Oneida
670	801	Harding	Blvd	Rome	NY	13440	Oneida
671	809	Harding	Blvd	Rome	NY	13440	Oneida
672	807	Harding	Blvd	Rome	NY	13440	Oneida
673	805	Harding	Blvd	Rome	NY	13440	Oneida
674	817	Harding	Blvd	Rome	NY	13440	Oneida
675	815	Harding	Blvd	Rome	NY	13440	Oneida
676	813	Harding	Blvd	Rome	NY	13440	Oneida
677	811	Harding	Blvd	Rome	NY	13440	Oneida
678	710	Healy	Ave	Rome	NY	13440	Oneida
679	819	Harding	Blvd	Rome	NY	13440	Oneida
680	708	Healy	Ave	Rome	NY	13440	Oneida
681	706	Healy	Ave	Rome	NY	13440	Oneida
682	820	Belmont	St	Rome	NY	13440	Oneida
683	818	Belmont	St	Rome	NY	13440	Oneida
684	816	Belmont	St	Rome	NY	13440	Oneida
685	808	Belmont	St	Rome	NY	13440	Oneida
686	810	Belmont	St	Rome	NY	13440	Oneida
687	812	Belmont	St	Rome	NY	13440	Oneida
688	814	Belmont	St	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
689	819	Belmont	St	Rome	NY	13440	Oneida
690	609	Riverside	Dr	Rome	NY	13440	Oneida
691	607	Riverside	Dr	Rome	NY	13440	Oneida
692	605	Riverside	Dr	Rome	NY	13440	Oneida
693	603	Riverside	Dr	Rome	NY	13440	Oneida
694	810	Wellesley	Rd	Rome	NY	13440	Oneida
695	604	Riverside	Dr	Rome	NY	13440	Oneida
696	606	Riverside	Dr	Rome	NY	13440	Oneida
697	608	Riverside	Dr	Rome	NY	13440	Oneida
698	809	Belmont	St	Rome	NY	13440	Oneida
699	806	Belmont	St	Rome	NY	13440	Oneida
700	613	Garden	St	Rome	NY	13440	Oneida
701	611	Garden	St	Rome	NY	13440	Oneida
702	607	Garden	St	Rome	NY	13440	Oneida
703	605	Garden	St	Rome	NY	13440	Oneida
704	606	Garden	St	Rome	NY	13440	Oneida
705	604	Garden	St	Rome	NY	13440	Oneida
706	600	Garden	St	Rome	NY	13440	Oneida
707	602	Garden	St	Rome	NY	13440	Oneida
708	601	Garden	St	Rome	NY	13440	Oneida
709	603	Garden	St	Rome	NY	13440	Oneida
710	610	Grant	Pl	Rome	NY	13440	Oneida
711	606	Grant	Pl	Rome	NY	13440	Oneida
712	608	Grant	Pl	Rome	NY	13440	Oneida
713	515	Bloomfielc	St	Rome	NY	13440	Oneida
714	605	Grant	Pl	Rome	NY	13440	Oneida
715	906	Roosevelt	Ave	Rome	NY	13440	Oneida
716	908	Roosevelt	Ave	Rome	NY	13440	Oneida
717	611	Healy	Ave	Rome	NY	13440	Oneida
718	607	Healy	Ave	Rome	NY	13440	Oneida
719	609	Healy	Ave	Rome	NY	13440	Oneida
720	605	Healy	Ave	Rome	NY	13440	Oneida
721	606	Healy	Ave	Rome	NY	13440	Oneida
722	608	Healy	Ave	Rome	NY	13440	Oneida
723	610	Healy	Ave	Rome	NY	13440	Oneida
724	601	Riverside	Dr	Rome	NY	13440	Oneida
725	612	Healy	Ave	Rome	NY	13440	Oneida
726	616	Healy	Ave	Rome	NY	13440	Oneida
727	821	Belmont	St	Rome	NY	13440	Oneida
728	613	Healy	Ave	Rome	NY	13440	Oneida
729	615	Healy	Ave	Rome	NY	13440	Oneida
730	617	Healy	Ave	Rome	NY	13440	Oneida
731	623	Healy	Ave	Rome	NY	13440	Oneida

OBJECTID	AddressNumb	StreetNa	PostType	ZipName	State	ZipCode	CountyName
732	621	Healy	Ave	Rome	NY	13440	Oneida
733	619	Healy	Ave	Rome	NY	13440	Oneida
734	700	Healy	Ave	Rome	NY	13440	Oneida
735	625	Healy	Ave	Rome	NY	13440	Oneida
736	627	Healy	Ave	Rome	NY	13440	Oneida
737	907	Harding	Blvd	Rome	NY	13440	Oneida
738	915	Harding	Blvd	Rome	NY	13440	Oneida
739	909	Harding	Blvd	Rome	NY	13440	Oneida
740	911	Harding	Blvd	Rome	NY	13440	Oneida
741	921	Harding	Blvd	Rome	NY	13440	Oneida
742	917	Harding	Blvd	Rome	NY	13440	Oneida
743	923	Harding	Blvd	Rome	NY	13440	Oneida
744	925	Harding	Blvd	Rome	NY	13440	Oneida
745	927	Harding	Blvd	Rome	NY	13440	Oneida
746	910	Roosevelt	Ave	Rome	NY	13440	Oneida
747	912	Roosevelt	Ave	Rome	NY	13440	Oneida

Prefix	Salutation	First Name	Last Name	Contact Title	Contact Organization	Department/ District	Political Party	County	Street Address 1	Street Address 2
The Honorable	Mayor	Jacqueline	Izzo	Mayor	City of Rome	Mayor's Office		Oneida	198 W. Washington St.	
Mr.	Mr.	Eric	Seelig	City Clerk & Registrar	City of Rome	City Clerk's Office		Oneida	198 W. Washington St.	
Ms.	President	Stephanie	Viscelli	Common Council Presi	City of Rome	Common Council		Oneida	1734 N. George St.	
Mr.	Councillor	John	Sparace	1st Ward Councillor	City of Rome	Common Council, Ward 1		Oneida	133 Parkway	
Mr.	Councillor	John	Mortise	2nd Ward Councillor	City of Rome	Common Council, Ward 2		Oneida	6744 Route 233	
Ms.	Councillor	Kimberly	Rogers	3rd Ward Councillor	City of Rome	Common Council, Ward 3		Oneida	5171 Oswego Rd.	
Ms.	Councillor	Ramona	Smith	4th Ward Councillor	City of Rome	Common Council, Ward 4		Oneida	104 Indian Creek Ln.	
Mr.	Councillor	Frank	Anderson	5th Ward Councillor	City of Rome	Common Council, Ward 5		Oneida	1106 Cedarbrook Dr.	
Mr.	Councillor	Riccardo	Dursi Jr.	6th Ward Councillor	City of Rome	Common Council, Ward 6		Oneida	1834 N. James St.	
Mr.	Councillor	Robert	Tracy	7th Ward Councillor	City of Rome	Common Council, Ward 7		Oneida	213 W. Oak St.	
Mr.	Mr.	Mark	Domenico	Chief Code Enforceme	City of Rome	Office of Code Enforcement		Oneida	198 W. Washington St.	
Mr.	Mr.	Matthew	Andrews	Deputy Director of Cor	City of Rome	Office of Community and Economic Development		Oneida	198 W. Washington St.	
Mr.	Chief	Thomas	Lacovissi	Fire Chief	City of Rome	Fire Department		Oneida	158 Black River Blvd	
Mr.	Chief	David	Collins	Chief of Police	City of Rome	Police Department		Oneida	301 N. James St.	
Mr.	Mr.	Butch	Conover	Commissioner of Publi	City of Rome	Public Works Department		Oneida	198 W. Washington St.	
Mr.	Mr.	Joe	Surace	Appointed Assessor, RI	City of Rome	Assessor's Office		Oneida	198 W. Washington St.	
Mr.	Mr.	Anthony	Picente Jr.	County Executive	Oneida County	Office of the County Executive		Oneida	800 Park Ave	
Mr.	Mr.	Norman	Leach	County Legislator	Oneida County	Board of Legislators, District 3 (	Republican	Oneida	1842 Littlefield Rd	
Ms.	Ms.	Cynthia	Rogers-Witt	County Legislator	Oneida County	Board of Legislators, District 4	Republican	Oneida	401 E. Garden St	
Mr.	Mr.	Gerald	Fiorini	County Legislator, Chai	Oneida County	Board of Legislators, District 7 (	Republican	Oneida	1800 Bedford St	
Mr.	Mr.	George	Joseph	County Legislator, Maj	Oneida County	Board of Legislators, District 10	Republican	Oneida	7315 Merriman Rd	
Ms.	Ms.	Brenda	McMonagle	County Legislator	Oneida County	Board of Legislators, District 12	Republican	Oneida	1001 Union St	
Mr.	Mr.	Stephen	DiMaggio	County Legislator	Oneida County	Board of Legislators, District 17	Republican	Oneida	7065 Stokes Westernville Rd	
Mr.	Mr.	Mikale	Billard	County Legislator Boar	Oneida County	Board of Legislators		Oneida	800 Park Ave	
Ms.	Ms.	Mary	Finegan	County Clerk	Oneida County	Office of the County Clerk		Oneida	800 Park Ave	
Mr.	Mr.	Anthony	Carvelli	Commissioner of Finan	Oneida County	County Finance Department		Oneida	800 Park Ave	5th Floor
Mr.	Mr.	Edward	Stevens	Director of Oneida Cou	Oneida County	Department of Emergency Services		Oneida	120 Base Rd	
Mr.	Mr.	James	Genovese II	Planning Commissione	Oneida County	Department of Planning		Oneida	321 Main St	
Mr.	Mr.	James	Laramie	Public Works Commiss	Oneida County	Department of Public Works		Oneida	5999 Judd Rd	
Mr.	Mr.	Karl	Schrantz	Water Quality and Wat	Oneida County	Department of Water Quality and Water Pollution		Oneida	51 Leland Ave	PO Box 442
Mr.	Sheriff	Robert	Maciol	County Sheriff	Oneida County	Oneida County Sheriff's Office		Oneida	6065 Judd Rd	
Ms.	Ms.	Kristin	Campbell	Environment and Wate	Oneida County	Onieda County Environment and Water Resource		Oneida	321 Main St	
Ms.	Ms.	Jessica	McLaughlin	District Manager	Onieda County	Onieda County Soil & Water Conservation District		Oneida	121 2nd St	

Local Officials

City	Zipcode	State	Phone	Phone 2	Email	Email 2	Term Length	Actions / Notes
Rome	13440	NY	315-336-6000					Email contact form: https://romenewyork.com/contact-us/?recip=mayor
Rome	13440	NY	315-339-7659		eseelig@romecitygov.com			
Rome	13440	NY	315-709-9308		stephviscelli@gmail.com		1/1/2020-12/31/23	
Rome	13440	NY	315-525-0777		sparace1975@hotmail.com			
Rome	13440	NY	315-527-4056		jmkw101904@yahoo.com			
Rome	13440	NY	315-404-5322		krogers66@gmail.com			
Rome	13440	NY	315-337-4327		ruggy100@aol.com			
Rome	13440	NY	315-337-0711		fanderson002@twcny.rr.com			
Rome	13440	NY	315-335-1417		rdursi28@gmail.com			
Rome	13440	NY	315-337-8970		rtracy1@twcny.rr.com			
Rome	13440	NY	315-339-7642					Email contact form: https://romenewyork.com/contact-us/?recip=mdomenico
Rome	13440	NY	315-339-7628					Email contact form: https://romenewyork.com/contact-us/?recip=mandrews
Rome	13440	NY	315-339-7784					Email contact form: https://romenewyork.com/contact-us/?recip=TIacovissi&fd=true
Rome	13440	NY	315-339-7705		collinsd@romepd.com			
Rome	13440	NY	315-339-7635					Email contact form: https://romenewyork.com/contact-us/?recip=bconover
Rome	13440	NY	315-339-7616					Email contact from: https://romenewyork.com/contact-us/?recip=JSuraceJr
Utica	13501	NY	315-798-5800		ce@ocgov.net			
Camden	13316	NY	315-245-0256		nleach@ocgov.net			
Rome	13440	NY	315-225-4488		crogers-witt@ocgov.net			
Rome	13440	NY	315-337-9045		gfiorini@ocgov.net			
Clinton	13323	NY	315-853-3006		gjoseph@ocgov.net			
Rome	13440	NY	315-571-5819		bmcmonagle@ocgov.net			
Ava	13303	NY	315-404-1323		sdimaggio@ocgov.net			
Utica	13501	NY	315-798-5404					
Utica	13501	NY	315-798-5776		countyclerk@ocgov.net			
Utica	13501	NY	315-798-5750					
Oriskany	13424	NY	315-765-2527		911@ocgov.net			
Utica	13501	NY	315-798-5710		planning@ocgov.net			
Oriskany	13424	NY	315-793-6213		publicworks@ocgov.net			
Utica	13503	NY	315-798-5656		wpc@ocgov.net			
Oriskany	13424	NY	315-765-2200					Email contact form: http://oneidacountysheriff.us/contactus
Utica	13501	NY	315-798-5710		planning@ocgov.net			
Oriskany	13424	NY	315-736-3334		jessica.mclaughlin@oneidacountyswcd.org			

State Officials

Prefix	Salutation	First Name	Last Name	Contact Title	Contact Organization	District/Department	Counties	Political Party	Address Line	Address Line 2
The Honorable	Governor	Kathy	Hochul	Governor	New York State			Democrat	NYS State Capitol Building	
The Honorable	Lt. Governor	Antonio	Delgado	Lieutenant Gove	New York State			Democrat	NYS State Capitol Building	
Mr.	Senator	Joseph	Griffo	State Senator, A:	New York State Senate	District 53	Oneida, Madiso	Republican	172 State St, Capitol Buildin	Room 414 CAP
Mr.	Senator	Joseph	Griffo	State Senator, A:	New York State Senate	District 53	Oneida, Madiso	Republican	207 Genesee St.	Room 408
Ms.	Assemblymen	Marianne	Buttenschon	State Assemblyn	New York State Asseml	District 119	Oneida (partly)	Democrat	Legislative Office Building	Room 656
Ms.	Assemblymen	Marianne	Buttenschon	State Assemblyn	New York State Asseml	District 119	Oneida (partly)	Democrat	207 Genesee St.	Room 401

State Officials

City	Zip	State	Phone	Phone 2	Email	Term Expiration	Notes
Albany	12224	NY	518-474-8390			1/1/2027	Email form: https://www.governor.ny.gov/content/governor-contact-form
Albany	12224	NY	518-474-8390			1/1/2027	Email form: https://www.governor.ny.gov/content/governor-contact-form
Albany	12224	NY	518-455-3334		griffo@nysenate.gov	1/1/2025	
Utica	13501	NY	315-793-9072				
Albany	12248	NY	518-455-5454		buttenschonm@nyassembly.gov	1/1/2025	
Utica	13501	NY	315-732-1055				

Prefix	Salutation	First Name	Last Name	Contact Title	Contact Organization	District/Department	Counties	Political Party	Address Line	Address Line 2
Mr.	Representative	Brandon	Williams	U.S. Representativ	U.S. House of Representa	District 22		Republican	1022 Longworth HOB	
Mr.	Representative	Brandon	Williams	U.S. Representativ	U.S. House of Representa	District 22		Republican	440 South Warren St	Suite 706
Mr.	Representative	Brandon	Williams	U.S. Representativ	U.S. House of Representa	District 22		Republican	421 Broad St	Suite 7
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	Lee O'Brien Building	Room 827
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	322 Hart SOB	
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	100 South Clinton St	Room 841
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	145 Pinelawn Rd	Room 300N
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	One Park Place	Suite 100
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	15 Henry St	Room 100 A-F
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	780 Third Ave	Suite 2301
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	100 State St	Room 3040
Mr.	Senator	Charles	Schumer	U.S. Senator, Majo	U.S. Senate			Democrat	130 South Elmwood A	Room 660
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	478 Russell	
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	11A Clinton Ave	Room 821
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	726 Exchange St	Suite 511
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	155 Pinelawn Rd	Suite 250N
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	PO Box 749	
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	PO Box 273	
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	780 Third Ave	Suite 2601
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	100 State St	Room 4195
Ms.	Senator	Kirsten	Gillibrand	U.S. Senator	U.S. Senate			Democrat	100 South Clinton St	Room 1470

City	Zip	State	Phone	Phone 2	Email	Term Expiration	Notes
Washington	20515	DC	202-225-3701			1/3/2025	Email contact form: https://brandonwilliams.house.gov/forms/writeyourrep/?zip5=13440&zip4=
Syracuse	13202	NY	315-233-4333			1/3/2025	
Utica	13501	NY	315-732-0713			1/3/2025	
Albany	12207	NY	518-431-4070			1/3/2029	Email contact form: https://www.schumer.senate.gov/contact/message-chuck
Washington	20510	DC	202-224-6542			1/3/2029	
Syracuse	13261	NY	315-423-5471			1/3/2029	
Melville	11747	NY	631-753-0978			1/3/2029	
Peekskill	10566	NY	914-734-1532			1/3/2029	
Binghampton	13901	NY	607-772-6792			1/3/2029	
New York	11017	NY	212-486-4430			1/3/2029	
Rochester	14614	NY	585-263-5866			1/3/2029	
Buffalo	14202	NY	716-846-4111			1/3/2029	
Washington	20510	DC	202-224-4451			1/3/2025	Email contact form: https://www.gillibrand.senate.gov/contact/email-me/
Albany	12207	NY	518-431-0120			1/3/2025	
Buffalo	14210	NY	716-854-9725			1/3/2025	
Melville	11747	NY	631-249-2825			1/3/2025	
Yonkers	10710	NY	845-875-4585			1/3/2025	
Lowville	13367	NY	315-376-6118			1/3/2025	
New York	10017	NY	212-688-6262			1/3/2025	
Rochester	14614	NY	585-263-6250			1/3/2025	
Syracuse	13261	NY	315-448-0470			1/3/2025	

Local Organizations

Prefix	First Name	Last Name	Primary Title	Primary Organization	Primary Division	Street Address
Mr.	John	Calabrese	Chairman of Board of Directors	Rome Area Chamber of Commerce		139 W Dominick St
Ms.	Kristen	Skobla	President	Rome Area Chamber of Commerce		139 W Dominick St
Ms.	Sandra	Soroka	Executive Director	Neighborhood Center Inc.		199 W Dominick St
Mr.	Victor	Fariello Jr.	Executive Director	Rome Community Foundation		301 N Washington St
Ms.	Darci	Byrne	Chief Operating Officer	Kenmax Foundation		337 Mohawk St
Mr.	Matt	Miller	Executive Director	Rome Rescue Mission		413 E Dominick St
Ms.	Amy	Turner	Executive Director	Mohawk Valley Community Action Agen	Rome Community Action Access Point	203 W Liberty St
Mr.	Timothy	Birnie	President	Rome & Clean		415 N Madison St
Ms.	Kelly	Blazosky	President	Onieda County Tourism		PO Box 551
Ms.	Mary Beth	McEwen	Executive Director	Cornell Cooperative Extension Oneida County		121 Second St
Mr.	John	Wagner	County Farm Bureau Relations & Development	Onieda County Farm Bureau		159 Wolf Rd
Mr.	Steven	Bulger	CEO/ Executive Director	Integrated Community Alternatives Network (ICAN)		310 Main St
Ms.	Alicia	Fernandez Dicks	President/ CEO	The Community Foundation of Herkimer and Oneida Counties		2608 Genesee St
Ms.	Amanda	Larson	President/ Trustee	The Gorman Foundation		1081 Northside Shoppi
				Copper City Community Connection		305 E Locust St
Dr.	Andrew	Drozd	Executive Director/ Chairman of the Board	Project Fibonacci Foundation Inc		PO Box 424
Mr.	Jason	Tockey	Executive Director	Rome Art and Community Center		308 W Bloomfield St
Mr.	Victor	Pearlman	Executive Director	Jewish Community Federation		2310 Oneida St
Mr.	Raymond	Durso Jr.	Chairman	The Gensis Group of Mohawk Valley Reg	Chamber Alliance of Mohawk Valley	100 Seymour Rd
Mr.	Steve	Dimeo	President	Mohawk Valley EDGE		584 Phoenix Dr
Ms.	Suzanne	Carvelli	President/ Community Volunteer	Rome College Foundation		139 W Dominick St
				Rome Historical Society		200 Church St
Mr.	Bryce	Baldwin	Executive Director	Rome Community Job Fairs		
Mr.	Chester	DiBari III	Executive Director	Rome Health Foundation		107 E Chestnut St
Mr.	Matthew	Caracas	CEO/ Executive Director	United Way of Mohawk Valley		258 Genesee St

Street Address 2	City	State	Zip	Phone	Phone 2	Email	Notes
Suite 2	Rome	NY	13440	315-337-1700		jcalabrese@fsource.org	
Suite 2	Rome	NY	13440	315-337-1700		kristen@romechamber.com	
Suite 2	Rome	NY	13440	315-272-2600		sandys@neighborhoodctr.org	
PO Box 609	Rome	NY	13442	315-356-4739	315-723-7285	VFariello@romecommunityfoundation.org	
	Rome	NY	13440	520-780-7141		darci@kenmaxfoundation.com	
PO Box 337	Rome	NY	13440	315-337-2516		mmiller@romemission.org	
	Rome	NY	13440	315-624-9930			Email contact form: https://www.mvcaa.com/contact
	Rome	NY	13440	315-796-7663			Webpage with email contact form currently down
	Utica	NY	13503	315-724-7221	315-939-9561	Kelly@oneidacountytourism.com	
	Oriskany	NY	13424	315-736-3394 ext. 101		mm822@cornell.edu	
Suite 300	Albany	NY	12205	315-761-9770		jwagner@nyfb.org	
	Utica	NY	13501	315-731-2603	315-792-9039	sbulger@ican.family	
	Utica	NY	13502	315-735-8212		adicks@foundationhoc.org	
ng Center	Oneida	NY	13421	315-363-0170			Email contact form: http://gormanfoundation.org/contact/
	Rome	NY	13440	315-337-8230			Email contact form: https://coppercitycommunityconnection.com/contact-us/
	Rome	NY	13442	315-334-1163		info@projectfibonacci.org	
	Rome	NY	13440	315-336-1040		executivedirector@romeart.org	
	Utica	NY	13501	315-733-2343		victor@jccutica.net	
	Utica	NY	13502	315-792-7187			Email contact form: https://thegenesisgroup.org/contact-us/
	Rome	NY	13441	315-338-0393		sjdimeo@mvedge.org	
	Rome	NY	13440	315-337-1700		info@RomeCollegeFoundation.com	
	Rome	NY	13440	315-336-5870		info@romehistoricalsociety.org	
	Rome	NY	13440	315-240-1262		bryce@romejobsfairs.org	
Suite 100	Rome	NY	13440	315-338-7181		foundation@romehealth.org	
	Utica	NY	13502	315-733-4691 ext. 231		matthewc@unitedwaymv.org	

Religious Organizations

Primary Organization	Prefix	First Name	Last Name	Primary Title	Street Address	City	State	Zip
River of Life Christian Church					705 Hickory St	Rome	NY	13440
Life Church					1110 Black River Blvd	Rome	NY	13440
Resurrection Life Church					628 Floyd Ave	Rome	NY	13440
Transfiguration of Our Lord Parish	Mr.	Tom	Carinci	Parish Facilities	111 Ridge St	Rome	NY	13440
Church of Christ					734 Hickory St	Rome	NY	13440
Rome Wesleyan Church	Pastor	James	Swanson	Pastor	317 W Embargo St	Rome	NY	13440
New Testament Church					6772 Lamphear Rd	Rome	NY	13440
Redeemer Church Rome Campus	Pastor	Mark	Schilling	Pastor	129 N Washington St	Rome	NY	13440
Rome Alliance Church					920 Turin St	Rome	NY	13440
All Saints Parish Polish National	Very Reverend	Marian	Pociecha	Pastor	801 Hickory St	Rome	NY	13440
Trinity Church					215 W Court St	Rome	NY	13440
Catholic Church of St. John the Baptist	Pastor	Paul	Angelicchio	Pastor	210 E Dominick St	Rome	NY	13440
Zion Episcopal Church	Ms.	Jane	Padrón	Warden	140 W Liberty St	Rome	NY	13440
Mt Calvary Baptist Church	Reverend	Tommy	Jackson Sr.	Pastor	203 Erie Blvd E	Rome	NY	13440
St. Mary of the Assumption Oratory	Very Reverend	Sean	O'Brien	Pastor	210 W Liberty St	Rome	NY	13440
Friendship Baptist Church					4964 Rome-New Lond	Rome	NY	13440
Grace Baptist Church	Pastor	Trent	Williams	Pastor	8553 Turin Rd	Rome	NY	13440
God's Missionary Church	Pastor	Matthew	Kilgore	Pastor	207 N Madison St	Rome	NY	13440
St. Paul's Roman Catholic Church					1807 Bedford St	Rome	NY	13440
Rome First United Methodist Church	Pastor	Sherry	Mahar	Pastor	400 N George St	Rome	NY	13440
First Presbyterian Church	Reverend	Edwina	Landry	Pastor	108 W Court St	Rome	NY	13440
New Hope Baptist Church	Pastor	Cindy	Makarchuk	Pastor	321 W Bloomfield St	Rome	NY	13440
Floyd United Methodist Church					8398 New Floyd Rd	Rome	NY	13440
Christ Church	Pastor	Aaron	Goerner	Pastor	8470 New Floyd Rd	Rome	NY	13440
Delta United Methodist Church	Pastor	Sherry	Mahar	Pastor	6285 Hawkins Corners	Rome	NY	13440
Bartlett Baptist Church					5639 Bartlett Rd	Rome	NY	13440
House of God					6852 Lowell Rd	Rome	NY	13440

Note: No other temples, mosques, synagogues, etc. exist within the bounds of Rome; these other religious buildings can be found closest in Utica, NY

Phone	Phone 2	Email	Notes
315-271-4260		webmaster@riverofliferome.org	
315-339-0242		info@lifechurchny.com	
315-339-6318			Email contact form: http://www.rezlifeny.org/contact
315-337-0990			
315-337-2160			
315-980-0020	315-337-9976	PastorJames@romewes.org	
315-339-6542			Email contact form: http://www.newtestamentchurch.tv/contact.asp
315-792-4748			Email contact form: https://www.myredeemerchurch.com/contact-us/
315-336-3483			
315-337-2382			Email contact form: https://www.allsaintsny.org/contact-us/
315-336-2833			
315-337-0990			Pastor for Transfiguration of Our Lord Parish as well, staff members are aligned with both churches
315-336-5170		secretary@zionrome.org	
315-337-0674		mtcalvaryrome1@gmail.com	
315-336-5072		smsprectory@twcny.rr.com	
315-336-2963		office@fbcromeny.org	
315-336-3341		twilliams@gbcromeny.com	
315-281-4681			Email contact form: https://godsmissionarychurch.org/contact-us/
315-336-3082		StPaulsRome@syrdio.org	
315-336-1740	315-338-4463	pastorsherrym@gmail.com	
315-336-1389		firstpresrome@gmail.com	
315-337-5608			Email contact form: https://floydumc.org/contact-us
315-865-4027			
315-734-0568			Email contact form: https://christchurchreformed.com/contact-us/
315-336-1940		delta_umc@yahoo.com	Same Pastor as Rome First United Methodist Church, no church affiliation to eachother
315-334-5551			
315-337-5635			

Primary Organization	Prefix	First Name	Last Name	Primary Title	Street Address	Street Address 2	City
The Oneida Daily Dispatch	Ms.	Karen	Alvord	General Manager	PO Box 4470		Kingston
Rome Daily Sentinel	Mr.	Bradley	Waters	Publisher	111 Langley Rd		Rome
The Syncopated Times	Mr.	Joe	Bebco	Publisher	1809 Whitesboro St		Utica
Utica Observer Dispatch	Mr.	Edward	Harris	Reporter	70 Genesee St		Utica
Utica Phoenix					1113 Linwood Pl		Utica
In Good Health - Mohawk Valley's Healthcare Newspaper	Mr.	Wagner	Dotto	Publisher	4 Riverside Dr	Suite 251	Utica
WKAL TalkRadio 1450					1721 Black River Blvd		Rome
Townsquare Media	Ms.	Karen	Carey	Market President	9418 River Rd		Marcy
MIX 102.5					520 Seneca St	Suite 101	Utica
The Answer Broadcasting	Ms.	Julie	Tanner	Station Manager	PO Box 337		Oriskany
WKTV News Channel 2					5936 Smith Hill Rd		Utica
Eyewitness News Channel 20					5956 Smith Hill Rd		Utica

State	Zip	Phone	Phone 2	Email	Notes							
NY	12401	315-231-5136	315-363-5100	kalvord@adtaxi.com								
NY	13441	315-337-4000 ext. 234		BWaters@RNYmedia.com								
NY	13502	315-507-5490		Joe.SyncopatedTimes@gmail.com								
NY	13501			eharris@uticaod.com								
NY	13501	315-797-2417		uticaphoenix@gmail.com								
NY	13502	315-749-7070		wdotto@twcny.rr.com								
NY	13440	315-533-2795		traffic@wkal1450.com	Part of Mohawk Valley Radio Group							
NY	13502	315-768-9500		karen.carey@townsquaremedia.com	Media Company owns: WODZ Oldiez 96.1, Lite 98.7, Big Frog 104, WIBX 106.9							
NY	13502	315-797-1330		mixpd@galaxymediapartners.com								
NY	13424			theanswerbroadcasting@gmail.com								
NY	13501	315-768-2264	315-733-0404	programming@wktv.com								
NY	13502	315-272-1331										

APPENDIX B EJ/DAC DATA

EJ/DAC Data for Revere Copper Products Public Participation Plan

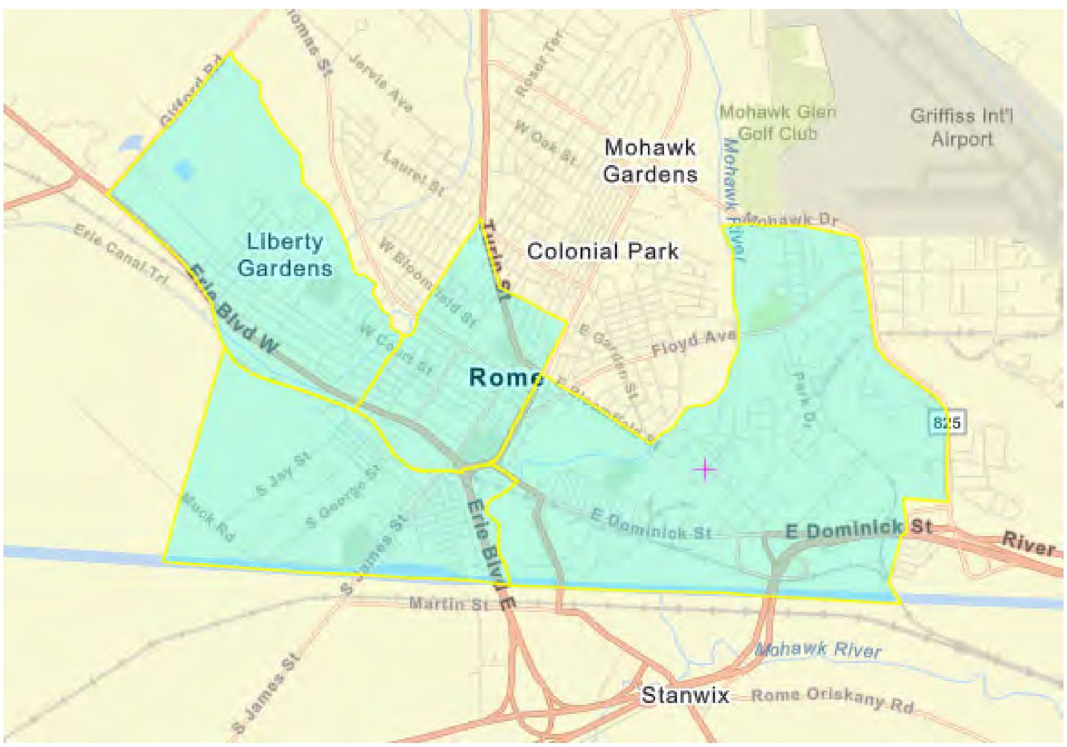
Client Name: Revere Copper Products, inc.
Address: One Revere Park
Rome, New York 13440
County: Oneida County

New York State is undertaking the most ambitious effort in the U.S. to meet the challenge of climate change. New York's Climate Act recognizes that climate change doesn't affect all communities equally. The Climate Act charged the Climate Justice Working Group (CJWG) with the development of criteria to identify disadvantaged communities to ensure that frontline and otherwise underserved communities benefit from the state's historic transition to cleaner, greener sources of energy, reduced pollution and cleaner air, and economic opportunities.

The CJWG finalized the disadvantaged communities criteria on March 27, 2023. The criteria contain 45 indicators related to "Environmental and Climate Change Burdens and Risks" and "Population Characteristics and Health Vulnerabilities".

Communities (Census Tracts) near the project site that meet the disadvantaged communities criteria include:

- 36065021900 (southwestern tract)
- 36065022000 (northwestern tract)
- **36065022500 (eastern tract – contains project site)**
- 36065026300 (north central tract)



The CJWG identifies Census Tract 36065022500, which contains the project site, as a disadvantaged community. Listed below are statistics for minority status, low-income status, English language proficiency and other dominant languages spoken within the Census Tract.

Notes on data provided: Population by Language Spoken at Home is available at the census tract summary level and up. Data may not sum to totals due to rounding. Hispanic population can be of any race.

People of Color and Low-Income Population by Census Tract

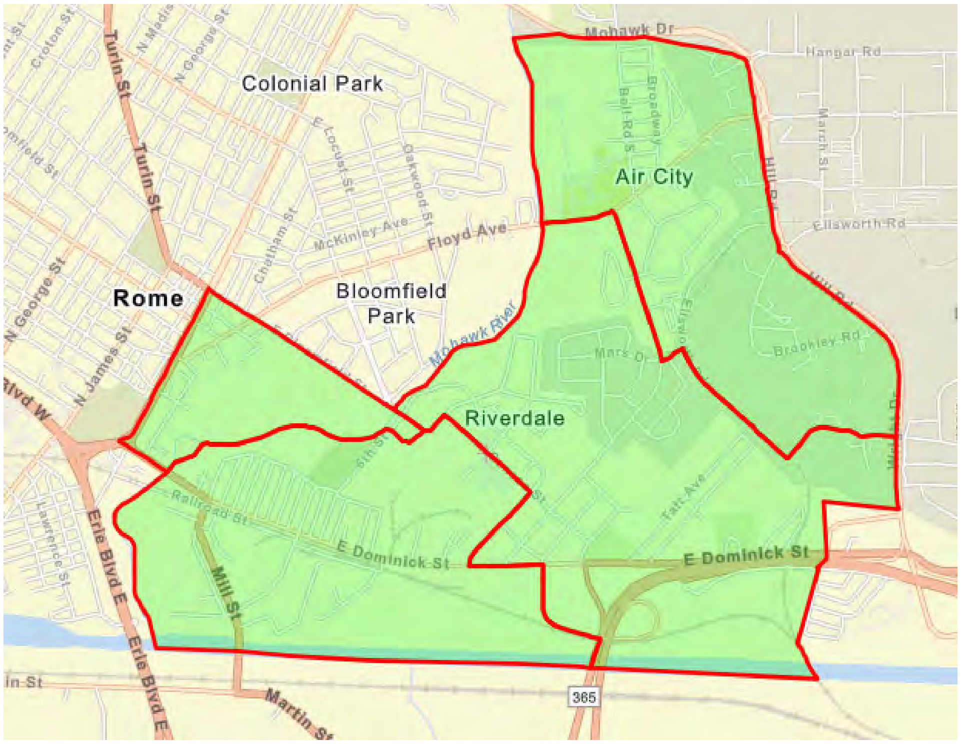
Area	Population	Low-income population (%)	People of color population (%)	Hispanic population (%)	Population by race (%)	
*Census Tract 36065022500	4,542	44	18	6	White:	85
					Black:	4
					American Indian:	0
					Asian:	1
					Pacific Islander:	0
					Other:	0
					Two or More:	9

Source: U.S. Census Bureau, American Community Survey (ACS) 2016-2020
**Indicates area contains project site*

English Proficiency and Language Spoken at Home by Census Tract

Area	Population Age 5+ Years by Ability to Speak English (%)		Population by Language Spoken at Home (%)	
*Census Tract 36065022500	Speak only English	96	English:	96
	Speak English "very well"	3	Spanish:	1
	Speak English "well"	1	French, Haitian, Cajun:	0
	Speak English "not well"	0	German, West Germanic:	0
	Speak English "not at all"	1	Russian, Polish, Slavic:	1
			Other Indo-European:	0
			Korean:	0
			Chinese, Mandarin, Cantonese:	1
			Vietnamese:	0
			Tagalog, Filipino:	0
			Other Asian and Pacific Island:	0
			Arabic:	0
			Other, Unspecified:	1

Source: U.S. Census Bureau, American Community Survey (ACS) 2016-2020
**Indicates area contains project site*



Within Census Tract 36065022500, there are four Census Block Groups (CBGs). Listed below are statistics for minority status, low-income status and English language proficiency for each CBG within Census Tract 36065022500.

- **360650225001 (southwestern CBG – contains project site)**
- 360650225002 (northwestern CBG)
- 360650225003 (northeastern CBG)
- 360650225004 (southeastern CBG)

People of Color and Low-Income Population by CBG

Area	Population	Low-income population (%)	People of color population (%)	Hispanic population (%)	Population by race (%)	
*CBG 360650225001	758	46	21	14	White:	92
					Black:	4
					American Indian:	0
					Asian:	0
					Pacific Islander:	0
					Other:	0
					Two or More:	4

Area	Population	Low-income population (%)	People of color population (%)	Hispanic population (%)	Population by race (%)	
CBG 360650225002	835	45	12	4	White: Black: American Indian: Asian: Pacific Islander: Other: Two or More:	92 3 0 0 0 0 6
CBG 360650225003	1,691	45	22	3	White: Black: American Indian: Asian: Pacific Islander: Other: Two or More:	78 6 0 1 0 1 14
CBG 360650225004	1,258	41	14	4	White: Black: American Indian: Asian: Pacific Islander: Other: Two or More:	87 2 0 4 0 0 7

Source: U.S. Census Bureau, American Community Survey (ACS) 2016-2020
*Indicates area contains project site

English Proficiency and Language Spoken at Home by CBG

Area	Population Age 5+ Years by Ability to Speak English (%)	
*CBG 360650225001	Speak only English Speak English “very well” Speak English ”well” Speak English “not well” Speak English “not at all”	96 4 0 0 0
CBG 360650225002	Speak only English Speak English “very well” Speak English ”well” Speak English “not well” Speak English “not at all”	100 0 0 0 0
CBG 360650225003	Speak only English Speak English “very well” Speak English ”well” Speak English “not well” Speak English “not at all”	91 3 3 0 3

Area	Population Age 5+ Years by Ability to Speak English (%)	
CBG 360650225004	Speak only English	97
	Speak English “very well”	3
	Speak English ”well”	3
	Speak English “not well”	0
	Speak English “not at all”	0

Source: U.S. Census Bureau, American Community Survey (ACS) 2016-2020
**Indicates area contains project site*

Sources:
New York State Energy Research and Development Authority, Disadvantaged Communities website
https://www.nyserda.ny.gov/ny/Disadvantaged-Communities

USEPA’s EJScreen website
https://www.epa.gov/ejscreen

APPENDIX C PUBLIC MEETING NOTICE

Revere Copper Products, Inc. invites you to a public meeting regarding an air permit modification application for its Rome facility. In addition to seeking to renew its existing air permit, Revere proposes to modify the permit by replacing an existing casting furnace with a new, similar, but more efficient induction furnace. The equipment upgrade will result in greater production at the facility and an increase in regulated air contaminants ranging from a nominal 1 - 2% up to approximately 16%, dependent upon the individual air contaminant and the changes in fuel type burned.

The public meeting will be held on Monday, November 6, 2023 from 6:00 - 7: 00 PM

At: **The YMCA of the Greater Tri-Valley**
301 W Bloomfield Street
Rome, NY 13440

Additional information about the meeting can be found on our Website at:

https://reverecopper.com/public-information/

U.S. Mail
Permit
No. XX

One Revere Park
Rome, New York 13440

Addressee
Street Address
City, State, Zip code

APPENDIX D FACT SHEET

Revere Copper Products, Inc.
Air Permit Renewal Fact Sheet

About Revere Copper Products' Air Permit Renewal

In New York, owners and/or operators of many air emissions sources are required to obtain an air permit or registration authorizing the construction and operation of the sources. Revere Copper Products, Inc. (Revere) operates air emissions sources at its Rome facility, These air emissions sources include such equipment as furnaces, boilers, rolling mills and other metal processing equipment. Currently, Revere operates these sources under an existing Air State Facility (ASF) Permit No. 6-3013-00091/00039 issued on November 1, 2013 by the New York State Department of Environmental Conservation (NYSDEC). The ASF Permit is valid for 10 years and has an expiration date of October 31, 2023, but in accordance with NYSDEC regulations (6 NYCRR 201), on February 8, 2023 Revere Copper products submitted a timely application to the NYSDEC to renew its ASF Permit. The application also proposed to modify the ASF Permit to include the replacement of an existing casting furnace with a new, energy- and fuel-efficient furnace that will allow Revere to increase the facility's product throughput capacity by approximately 23.3% while increasing natural gas consumption by only approximately 22%. The equipment upgrade will result in greater production at the facility and an increase in regulated air contaminants ranging from a nominal 1 - 2% up to approximately 16%, dependent upon the individual air contaminant and the changes in fuel type combusted. In addition, Revere will be replacing the No. 6 Fuel Oil that it uses as a backup fuel in its boilers with No. 2 Fuel Oil – a fuel that burns cleaner with lower emissions.

Project Benefits

The replacement furnace project (the "Project") will create approximately 40 new, local, high-paying permanent jobs, and up to 41 indirect jobs during construction and operations.

Approximately 63.8% of Revere's copper production is used in electric vehicles, charging stations, grid upgrades and electric transmission facilities, helping New York State and the US ensure a successful green transition.

The increased production capacity will benefit the local communities with increased revenue paid through product sales and income tax payments provided by Revere and its employees. Mohawk Valley Economic Development expects that this additional employment growth at Revere will produce approximately $23 Million in additional economic activity in the local community.

Safety

The safety of the public, Revere's employees, and impacts on the environment are all top priorities for Revere. The facility will comply with the applicable local, state and federal standards and requirements. Revere's facility is designed and equipped with state-of-the science safety and security systems to ensure that employees and visitors to the plant, and the local community are protected.

Environment and Community

A greener, healthier and more sustainable future relies on the use of copper.

It's role in renewable energy is growing as we look toward more affordable and cleaner ways to produce electricity. It's recyclable properties and minimal impact on the environment make copper instrumental in developing sustainable cities and communities. Copper's inherent high efficiency in conductive applications can help reduce greenhouse gas emissions and significantly reduce the world's carbon footprint.

Revere and its employees are active participants and contributors in many community campaigns and events. Bringing positive changes to the communities in which we live and work, as well as national and global communities, is important to us. We believe it fosters a deeper sense of unity and purpose and reflects our long-standing values as a company.

REVERE

Revere Copper Products, Inc.
Air Permit Renewal Fact Sheet

Project Timeline

The ASF Permit renewal and modification application was submitted to the NYSDEC in February 2023 and is currently under review by the NYSDEC Division of Air Resources, and the Division of Environmental Permits.

Revere Copper is hosting a public to give the public the opportunity to learn more about the expansion project and air permit renewal schedule. The public meeting will be on meeting on **Monday, November 6, 2023 from 6:00 – 7:00 PM at:**

The YMCA of the Greater Tri-Valley
301 W Bloomfield Street
Rome, New York 13440
Phone: (315) 336-3500

For More Information

Copies of the Public Participation Plan (PPP), the Draft Modified ASF Permit and supporting documentation can be viewed at the following locations:

Jervis Public Library
613 N Washington Street
Rome, New York 13440
Phone: (315) 336-4570
Hours of Operation:

Monday through Thursday:	8:30 AM – 8:30 PM
Friday:	8:30 AM – 5:30 PM
Saturday:	10:00 AM – 3:00 PM
Sunday:	Closed

New York State Department of Environmental Conservation
Region 6 Utica Sub-Office
207 Genesee Street
Utica, NY 13501
(315) 793-2554
Hours of Operation:

Monday through Friday:	8:30 AM-4:45 PM
Saturday & Sunday:	Closed

To learn more about Revere Copper Products, Inc. visit our website at:

https://reverecopper.com/public-information/

You can learn more about the New York State Air Permit Renewal process and Revere's expansion project on the NYSDEC's website by following these links:

https://www.dec.ny.gov/chemical/8569.html#Permits

https://www.dec.ny.gov/dardata/boss/afs/permits/630130009100039_r1_1.pdf

https://www.dec.ny.gov/enb/enb.html

APPENDIX E SAMPLE WINDOW POSTER

Revere Copper Products, Inc.
Permit Modification/Renewal

Revere Copper Products, Inc. is hosting a Public Meeting for our neighbors to learn more about the proposed modification and renewal of its existing air permit for its Rome facility.

The Public Meeting will be held on:

Monday, November 6, 2023 from 6:00 - 7: 00 PM

Location:

The YMCA of the Greater Tri-Valley

301 W Bloomfield Street
Rome, New York 13440

Additional information about the meeting can be found on our Website at:

https://reverecopper.com/public-information/

03 October 2023

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EXHIBIT 3
ALLIANCE SOURCE TESTING PROGRAM AND RESULTS

July 18, 2023

David Ozog
Environmental Manager
Revere Copper Products Inc.
One Revere Park
Rome, NY 13440
315-338-2160 (direct)
DOzog@reverecopper.com

RE: Investigative Testing
Five (5) Process Exhausts
Alliance Project No. 2023-2747

Dear Mr. Ozog,

Alliance Technical Group, LLC (Alliance) conducted investigative testing at the Revere Copper Products facility located in Rome, New York. Testing concluded of determining the emission rates of filterable and condensable particulate matter (PM) for five (5) process exhausts, with additional copper (Cu) testing at the exhaust of the 1515 Overhauler, at the facility.

Please find attached summaries of the testing results along with a copy of the field data collected during the testing. Please contact me at (315) 289-9433 or via email at jeff.gorman@alliancetg.com if you have any questions or need additional information.

Sincerely,
Alliance Technical Group, LLC

Jeffrey Gorman

Jeff Gorman, QSTI
Operations Manager- New York

Enclosure

Table 1
Summary of Results – 2056 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/1/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	37,889	37,403	37,572	37,621
Stack Conditions dscfm	34,603	34,469	34,238	34,437
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0039	0.0030	0.0030
Emission Rate, lb/hr	0.64	1.2	0.88	0.89
Condensable Particulate Matter Data				
Concentration, grain/dscf	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Emission Rate, lb/hr	0.079	0.16	0.095	0.11

Table 2
Summary of Results – 2443 Melting Furnace

Run Number	Run 1	Run 2	Run 3	Average
Date	**6/2/23**	**6/2/23**	**6/2/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	36,188	36,524	36,786	36,499
Stack Conditions dscfm	33,277	33,054	33,130	33,154
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Emission Rate, lb/hr	0.25	0.22	0.14	0.20
Condensable Particulate Matter Data				
Concentration, grain/dscf	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Emission Rate, lb/hr	0.14	0.12	0.14	0.13

CORPORATE OFFICE
255 Grant St. SE, Suite 600
Decatur, AL 35601
256.351.0121

www.alliancetechnicalgroup.com

Alliance TECHNICAL GROUP

Table 3
Summary of Results – 1715 Overhauler

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/30/23**	**5/31/23**	**5/31/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	39,813	39,971	36,697	38,827
Stack Conditions dscfm	39,075	38,880	35,533	37,829
Filterable Particulate Matter Data				
Concentration, grain/dscf	0.0035	0.013	0.0064	0.0075
Emission Rate, lb/hr	1.2	4.2	1.9	2.4
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0022	0.0017	7.9E-04	0.0016
Emission Rate, lb/hr	0.75	0.55	0.24	0.52
Copper Data				
Concentration, ug/dscm	2,538	--	--	2,538
Emission Rate, lb/hr	0.37	--	--	0.37

Table 4
Summary of Results – 1723 Reversing Mill

Run Number	Run 1	Run 2	Run 3	Average
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	25,441	23,155	22,064	23,554
Stack Conditions dscfm	24,404	21,982	20,736	22,374
Filterable Particulate Matter Data				
Concentration, grain/dscf	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Emission Rate, lb/hr	0.18	0.18	0.11	0.16
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0011	0.0012	9.0E-04	0.0011
Emission Rate, lb/hr	0.23	0.22	0.16	0.20

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TECHNICAL GROUP

Table 5
Summary of Results – 1721 First Run Down Mill

Run Number	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	**5/31/23**	**6/1/23**	**6/1/23**	**--**
Volumetric Flow Rate				
Stack Conditions, acfm	60,905	61,226	61,870	61,334
Stack Conditions dscfm	57,917	58,539	58,671	58,376
Filterable Particulate Matter Data				
Concentration, grain/dscf	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Emission Rate, lb/hr	0.33	0.27	0.19	0.26
Condensable Particulate Matter Data				
Concentration, grain/dscf	0.0018	0.0010	6.5E-04	0.0011
Emission Rate, lb/hr	0.88	0.51	0.33	0.57

Field Data

Emission Calculations

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min	(θ)	90.0	90.0	90.0	90.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	57.339	57.472	59.538	58.116
Meter Temperature, °F	(Tm)	69.2	78.5	92.1	79.9
Meter Temperature, °R	(Tm)	528.9	538.2	551.8	539.6
Meter Orifice Pressure, in. WC	(ΔH)	1.333	1.350	1.400	1.361
Volume H_2O Collected, mL	(Vlc)	19.1	20.4	24.7	21.4
Nozzle Diameter, in	(Dn)	0.212	0.212	0.212	0.212
Area of Nozzle, ft^2	(An)	0.0002	0.0002	0.0002	0.0002
Filterable PM Mass, mg	(Mn)	<u>3.3</u>	<u>2.8</u>	<u>1.8</u>	2.6
Condensable PM Mass, mg	(M_{CPM})	1.8	1.6	1.8	1.7
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	57.740	56.839	57.459	57.346
Standard Water Volume, ft^3	(Vwstd)	0.901	0.962	1.165	1.009
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
Meter Pressure, in Hg	(Pm)	30.11	30.09	30.10	30.10
Volume at Nozzle, ft^3	(Vn)	62.789	62.805	63.797	63.13
Isokinetic Sampling Rate, (%)	(I)	98.8	97.9	98.8	98.5
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.8	-0.4	0.0	0.1
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.8E-04	7.6E-04	4.8E-04	7.1E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.25	0.22	0.14	0.20
Condensable PM Concentration, grain/dscf	(C_{CPM})	4.8E-04	4.3E-04	4.8E-04	4.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.14	0.12	0.14	0.13
Total PM Concentration, grain/dscf	(C_{TPM})	0.0014	0.0012	9.7E-04	0.0012
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.39	0.34	0.27	0.33

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

Emission Calculations

Location Revere Copper - Rome, NY
Source 2443 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/2/23	6/2/23	6/2/23	--
Start Time		7:50	9:42	11:39	--
Stop Time		8:20	11:12	13:09	--
Run Time, min		90.0	90.0	90.0	90.0
VELOCITY HEAD, in. WC					
Point 1		0.70	0.58	0.64	0.64
Point 2		0.69	0.66	0.66	0.67
Point 3		0.68	0.69	0.69	0.69
Point 4		0.68	0.72	0.72	0.71
Point 5		0.68	0.78	0.78	0.75
Point 6		0.68	0.84	0.84	0.79
Point 7		0.68	0.78	0.78	0.75
Point 8		0.68	0.70	0.70	0.69
Point 9		0.68	0.54	0.54	0.59
Point 10		0.54	0.54	0.54	0.54
Point 11		0.70	0.70	0.70	0.70
Point 12		0.76	0.70	0.70	0.72
Point 13		0.62	0.62	0.62	0.62
Point 14		0.64	0.64	0.64	0.64
Point 15		0.72	0.72	0.72	0.72
Point 16		0.76	0.76	0.76	0.76
Point 17		0.80	0.80	0.80	0.80
Point 18		0.80	0.80	0.80	0.80
Point 19		0.76	0.76	0.76	0.76
Point 20		0.68	0.68	0.68	0.68
Point 21		0.56	0.56	0.68	0.60
Point 22		0.58	0.58	0.58	0.58
Point 23		0.66	0.68	0.68	0.67
Point 24		0.70	0.68	0.68	0.69
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.826	0.828	0.833	0.829
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.01	29.99	30.00	30.00
Static Pressure, in. WC	(Pg)	0.21	0.21	0.21	0.21
Stack Pressure, in. Hg	(Ps)	30.03	30.01	30.02	30.02
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	107.3	115.3	116.4	113.0
Temperature, °R	(Ts)	567.0	575.0	576.1	572.698
Moisture Fraction Measured	(BWSmsd)	0.015	0.017	0.020	0.017
Moisture Fraction @ Saturation	(BWSsat)	0.080	0.100	0.103	0.094
Moisture Fraction	(BWS)	0.015	0.017	0.020	0.017
O_2 Concentration, %	(O_2)	18.1	18.1	18.1	18.1
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.04	29.04	29.04	29.04
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.87	28.86	28.82	28.85
Velocity, ft/sec	(Vs)	48.0	48.4	48.8	48.4
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	36,188	36,524	36,786	36,499
At Standard Conditions, dscfm	(Qs)	33,277	33,054	33,130	33,154

Emission Calculations

Location	Revere Copper - Rome, NY
Source	2056 Metling Furnace
Project No.	AST-2023-2747
Parameter	PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min	(θ)	240.0	240.0	240.0	240.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	184.136	181.174	183.960	183.090
Meter Temperature, °F	(Tm)	96.5	87.1	97.7	93.8
Meter Temperature, °R	(Tm)	556.2	546.8	557.3	553.4
Meter Orifice Pressure, in. WC	(ΔH)	1.794	1.773	1.782	1.783
Volume H_2O Collected, mL	(Vlc)	34.6	46.6	51.5	44.2
Nozzle Diameter, in	(Dn)	0.220	0.220	0.220	0.220
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	24.2	44.0	33.6	33.9
Condensable PM Mass, mg	(M_{CPM})	3.0	5.9	3.6	4.2
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	173.571	172.671	172.014	172.752
Standard Water Volume, ft^3	(Vwstd)	1.632	2.198	2.429	2.086
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
Meter Pressure, in Hg	(Pm)	30.24	30.06	30.06	30.12
Volume at Nozzle, ft^3	(Vn)	190.051	187.363	188.760	188.72
Isokinetic Sampling Rate, (%)	(I)	97.4	97.3	97.6	97.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	0.6	0.2	0.4	0.4
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0022	0.0039	0.0030	0.0030
Filterable PM Emission Rate, lb/hr	(PMR)	0.64	1.2	0.88	0.89
Condensable PM Concentration, grain/dscf	(C_{CPM})	2.7E-04	5.3E-04	3.2E-04	3.7E-04
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.079	0.16	0.095	0.11
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0045	0.0033	0.0034
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.72	1.3	1.0	1.0

Emission Calculations

Location Revere Copper - Rome, NY
Source 2056 Metling Furnace
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		6/1/23	6/2/23	6/2/23	--
Start Time		13:54	8:10	13:35	--
Stop Time		18:04	13:12	17:46	--
Run Time, min		240.0	240.0	240.0	240.0
VELOCITY HEAD, in. WC					
Point 1		0.72	0.70	0.73	0.72
Point 2		0.72	0.70	0.73	0.72
Point 3		0.71	0.69	0.74	0.71
Point 4		0.71	0.70	0.74	0.72
Point 5		0.75	0.69	0.73	0.72
Point 6		0.69	0.67	0.73	0.70
Point 7		0.70	0.69	0.71	0.70
Point 8		0.72	0.65	0.73	0.70
Point 9		0.76	0.70	0.74	0.73
Point 10		0.76	0.70	0.73	0.73
Point 11		0.78	0.75	0.75	0.76
Point 12		0.79	0.77	0.74	0.77
Point 13		0.85	0.78	0.72	0.78
Point 14		0.83	0.78	0.71	0.77
Point 15		0.88	0.82	0.78	0.83
Point 16		0.85	0.80	0.79	0.81
Point 17		0.85	0.83	0.80	0.83
Point 18		0.85	0.85	0.83	0.84
Point 19		0.85	0.85	0.85	0.85
Point 20		0.88	0.85	0.87	0.87
Point 21		0.86	0.85	0.88	0.86
Point 22		0.86	0.84	0.84	0.85
Point 23		0.83	0.85	0.85	0.84
Point 24		0.84	0.86	0.85	0.85
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.879	0.873	0.872	0.875
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.11	29.93	29.93	29.99
Static Pressure, in. WC	(Pg)	0.60	0.55	0.60	0.58
Stack Pressure, in. Hg	(Ps)	30.15	29.97	29.97	30.03
Stack Cross-sectional Area, ft^2	(As)	12.31	12.31	12.31	12.31
Temperature, °F	(Ts)	117.2	106.7	112.4	112.1
Temperature, °R	(Ts)	576.9	566.3	572.0	571.746
Moisture Fraction Measured	(BWSmsd)	0.009	0.013	0.014	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.105	0.078	0.092	0.092
Moisture Fraction	(BWS)	0.009	0.013	0.014	0.012
O_2 Concentration, %	(O_2)	18.7	18.7	18.8	18.7
CO_2 Concentration, %	(CO_2)	2.0	2.0	2.0	2.0
Molecular Weight, lb/lb-mole (dry)	(Md)	29.07	29.07	29.07	29.07
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.97	28.93	28.92	28.94
Velocity, ft/sec	(Vs)	51.3	50.7	50.9	51.0
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	37,889	37,403	37,572	37,621
At Standard Conditions, dscfm	(Qs)	34,603	34,469	34,238	34,437

Emission Calculations

Location	**Revere Copper - Rome, NY**
Source	**1721 First Run Down Mill**
Project No.	**AST-2023-2747**
Parameter	**PM/CPM**

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min	(θ)	80.0	80.0	80.0	80.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Meter Correction Factor	(Y)	1.003	1.003	1.003	1.003
Orifice Calibration Value	(ΔH @)	1.850	1.850	1.850	1.850
Meter Volume, ft^3	(Vm)	55.620	53.918	55.245	54.928
Meter Temperature, °F	(Tm)	91.7	70.4	82.0	81.4
Meter Temperature, °R	(Tm)	551.4	530.0	541.7	541.0
Meter Orifice Pressure, in. WC	(ΔH)	1.503	1.503	1.541	1.516
Volume H_2O Collected, mL	(Vlc)	7.4	18.1	17.5	14.3
Nozzle Diameter, in	(Dn)	0.247	0.247	0.247	0.247
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.3</u>	<u>1.9</u>	<u>1.3</u>	1.8
Condensable PM Mass, mg	(M_{CPM})	6.2	3.6	2.3	4.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	53.998	54.360	54.508	54.288
Standard Water Volume, ft^3	(Vwstd)	0.349	0.854	0.825	0.676
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
Meter Pressure, in Hg	(Pm)	30.26	30.21	30.21	30.23
Volume at Nozzle, ft^3	(Vn)	56.783	56.853	57.478	57.04
Isokinetic Sampling Rate, (%)	(I)	99.0	98.6	98.7	98.8
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	1.2	0.1	0.2	0.5
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	6.6E-04	5.4E-04	3.7E-04	5.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.33	0.27	0.19	0.26
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0018	0.0010	6.5E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.88	0.51	0.33	0.57
Total PM Concentration, grain/dscf	(C_{TPM})	0.0024	0.0016	0.0010	0.0017
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.2	0.78	0.51	0.83

Underlined values were below the MDL; MDL used for calculation purposes.

Emission Calculations

Location	**Revere Copper - Rome, NY**
Source	**1721 First Run Down Mill**
Project No.	**AST-2023-2747**
Parameter	**PM/CPM**

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		14:35	7:50	9:50	--
Stop Time		16:03	9:15	11:15	--
Run Time, min		80.0	80.0	80.0	80.0
VELOCITY HEAD, in. WC					
Point 1		0.39	0.47	0.48	0.45
Point 2		0.40	0.47	0.48	0.45
Point 3		0.38	0.49	0.48	0.45
Point 4		0.39	0.45	0.45	0.43
Point 5		0.39	0.43	0.44	0.42
Point 6		0.38	0.39	0.41	0.39
Point 7		0.38	0.36	0.37	0.37
Point 8		0.36	0.36	0.34	0.35
Point 9		0.44	0.35	0.38	0.39
Point 10		0.45	0.38	0.39	0.41
Point 11		0.42	0.39	0.39	0.40
Point 12		0.40	0.40	0.39	0.40
Point 13		0.39	0.38	0.40	0.39
Point 14		0.37	0.38	0.39	0.38
Point 15		0.36	0.36	0.35	0.36
Point 16		0.35	0.34	0.34	0.34
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.625	0.631	0.635	0.630
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.15	30.10	30.10	30.12
Static Pressure, in. WC	(Pg)	-0.20	-0.20	-0.20	-0.20
Stack Pressure, in. Hg	(Ps)	30.14	30.09	30.09	30.10
Stack Cross-sectional Area, ft^2	(As)	28.27	28.27	28.27	28.27
Temperature, °F	(Ts)	95.6	86.7	91.5	91.3
Temperature, °R	(Ts)	555.3	546.4	551.2	550.941
Moisture Fraction Measured	(BWSmsd)	0.006	0.015	0.015	0.012
Moisture Fraction @ Saturation	(BWSsat)	0.056	0.042	0.049	0.049
Moisture Fraction	(BWS)	0.006	0.015	0.015	0.012
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.77	28.67	28.67	28.70
Velocity, ft/sec	(Vs)	35.9	36.1	36.5	36.2
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	60,905	61,226	61,870	61,334
At Standard Conditions, dscfm	(Qs)	57,917	58,539	58,671	58,376

Emission Calculations

Location Revere Copper - Rome, NY
Source 1723 Reversing Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min	(θ)	60.0	60.0	57.5	59.2
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Meter Correction Factor	(Y)	0.997	0.997	0.997	0.997
Orifice Calibration Value	(ΔH @)	1.568	1.568	1.568	1.568
Meter Volume, ft^3	(Vm)	51.374	47.447	43.281	47.367
Meter Temperature, °F	(Tm)	89.5	94.9	96.9	93.8
Meter Temperature, °R	(Tm)	549.1	554.6	556.6	553.4
Meter Orifice Pressure, in. WC	(ΔH)	2.046	1.683	1.504	1.745
Volume H_2O Collected, mL	(Vlc)	18.5	14.4	13.3	15.4
Nozzle Diameter, in	(Dn)	0.215	0.215	0.215	0.215
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	<u>2.8</u>	<u>2.8</u>	<u>1.7</u>	2.4
Condensable PM Mass, mg	(M_{CPM})	3.5	3.5	2.4	3.1
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	49.926	45.496	41.238	45.554
Standard Water Volume, ft^3	(Vwstd)	0.872	0.679	0.627	0.726
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
Meter Pressure, in Hg	(Pm)	30.35	30.24	30.16	30.25
Volume at Nozzle, ft^3	(Vn)	52.047	47.924	43.878	47.95
Isokinetic Sampling Rate, (%)	(I)	95.6	96.7	97.0	96.4
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.8	-0.5	0.1	-0.7
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	8.7E-04	9.5E-04	6.4E-04	8.2E-04
Filterable PM Emission Rate, lb/hr	(PMR)	0.18	0.18	0.11	0.16
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0011	0.0012	9.0E-04	0.0011
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.23	0.22	0.16	0.20
Total PM Concentration, grain/dscf	(C_{TPM})	0.0019	0.0021	0.0015	0.0019
Total PM Emission Rate, lb/hr	(ER_{TPM})	0.41	0.40	0.27	0.36

Underlined values contain one or more fractions below MDL; MDL used for calculation purposes.

Alliance TECHNICAL GROUP

Emission Calculations

Location Revere Copper - Rome, NY
Source 1723 Reversing Mill
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/31/23	6/1/23	6/1/23	--
Start Time		10:40	12:55	15:58	--
Stop Time		12:17	14:05	17:05	--
Run Time, min		60.0	60.0	57.5	59.2
VELOCITY HEAD, in. WC					
Point 1		1.30	1.10	1.10	1.17
Point 2		1.30	1.10	1.10	1.17
Point 3		1.30	1.10	1.10	1.17
Point 4		1.30	1.10	1.10	1.17
Point 5		1.10	1.10	1.10	1.10
Point 6		1.10	1.10	1.10	1.10
Point 7		1.10	1.10	0.86	1.02
Point 8		1.10	1.10	0.87	1.02
Point 9		1.10	1.10	0.87	1.02
Point 10		0.85	0.79	0.87	0.84
Point 11		0.85	0.79	0.74	0.79
Point 12		0.85	0.80	0.71	0.79
Point 13		1.20	0.80	0.74	0.91
Point 14		1.20	0.81	0.72	0.91
Point 15		1.20	0.80	0.68	0.89
Point 16		1.20	0.80	0.66	0.89
Point 17		1.10	0.80	0.67	0.86
Point 18		1.20	0.80	0.67	0.89
Point 19		1.10	0.80	0.67	0.86
Point 20		1.10	0.80	0.67	0.86
Point 21		1.05	0.78	0.67	0.83
Point 22		1.05	0.80	0.61	0.82
Point 23		1.00	0.80	0.66	0.82
Point 24		1.00	0.80	--	0.90
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	1.052	0.952	0.902	0.969
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.20	30.12	30.05	30.12
Static Pressure, in. WC	(Pg)	0.16	0.16	0.16	0.16
Stack Pressure, in. Hg	(Ps)	30.21	30.13	30.06	30.14
Stack Cross-sectional Area, ft^2	(As)	7.07	7.07	7.07	7.07
Temperature, °F	(Ts)	86.3	91.9	96.0	91.4
Temperature, °R	(Ts)	545.9	551.5	555.7	551.045
Moisture Fraction Measured	(BWSmsd)	0.017	0.015	0.015	0.016
Moisture Fraction @ Saturation	(BWSsat)	0.041	0.050	0.057	0.049
Moisture Fraction	(BWS)	0.017	0.015	0.015	0.016
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.65	28.68	28.67	28.67
Velocity, ft/sec	(Vs)	60.0	54.6	52.0	55.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	25,441	23,155	22,064	23,554
At Standard Conditions, dscfm	(Qs)	24,404	21,982	20,736	22,374

Emission Calculations

Location Revere Copper - Rome, NY
Source 1715 Overhauler
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min	(θ)	60.0	60.0	60.0	60.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Meter Correction Factor	(Y)	0.983	0.983	0.983	0.983
Orifice Calibration Value	(ΔH @)	1.866	1.866	1.866	1.866
Meter Volume, ft^3	(Vm)	62.536	64.137	59.104	61.926
Meter Temperature, °F	(Tm)	79.0	84.1	88.7	84.0
Meter Temperature, °R	(Tm)	538.7	543.8	548.4	543.6
Meter Orifice Pressure, in. WC	(ΔH)	3.613	3.612	3.133	3.453
Volume H_2O Collected, mL	(Vlc)	35.5	35.2	36.1	35.6
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft^2	(An)	0.0003	0.0003	0.0003	0.0003
Filterable PM Mass, mg	(Mn)	14.0	50.8	23.5	29.4
Condensable PM Mass, mg	(M_{CPM})	8.9	6.7	2.9	6.2
Copper Mass, ug	(M_{Cu})	4,400.0	--	--	4,400.0
ISOKINETIC DATA					
Standard Meter Volume, ft^3	(Vmstd)	61.230	62.190	56.765	60.062
Standard Water Volume, ft^3	(Vwstd)	1.676	1.660	1.702	1.680
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
Meter Pressure, in Hg	(Pm)	30.43	30.42	30.38	30.41
Volume at Nozzle, ft^3	(Vn)	62.592	63.934	58.726	61.75
Isokinetic Sampling Rate, (%)	(I)	96.3	98.3	98.1	97.6
DGM Calibration Check Value, (+/- 5%)	(Y_{qa})	-1.6	-0.1	-0.1	-0.6
EMISSION CALCULATIONS					
Filterable PM Concentration, grain/dscf	(C_s)	0.0035	0.013	0.0064	0.0075
Filterable PM Emission Rate, lb/hr	(PMR)	1.2	4.2	1.9	2.4
Condensable PM Concentration, grain/dscf	(C_{CPM})	0.0022	0.0017	7.9E-04	0.0016
Condensable PM Emission Rate, lb/hr	(ER_{CPM})	0.75	0.55	0.24	0.52
Total PM Concentration, grain/dscf	(C_{TPM})	0.0058	0.014	0.0072	0.0091
Total PM Emission Rate, lb/hr	(ER_{TPM})	1.9	4.8	2.2	3.0
Copper Concentration, ug/dscm	(C_{Cu})	2,538	--	--	2,538
Copper Emission Rate, lb/hr	(ER_{Cu})	0.37	--	--	0.37

Emission Calculations

Location Revere Copper - Rome, NY
Source 1715 Overhauler
Project No. AST-2023-2747
Parameter PM/CPM

Run Number		Run 1	Run 2	Run 3	Average
Date		5/30/23	5/31/23	5/31/23	--
Start Time		14:41	10:21	12:19	--
Stop Time		9:55	11:36	13:24	--
Run Time, min		60.0	60.0	60.0	60.0
VELOCITY HEAD, in. WC					
Point 1		0.94	0.86	1.10	0.97
Point 2		0.96	0.79	1.10	0.95
Point 3		0.68	0.77	1.00	0.82
Point 4		0.83	0.77	1.00	0.87
Point 5		0.86	0.77	1.05	0.89
Point 6		0.78	0.80	1.05	0.88
Point 7		1.00	0.77	1.00	0.92
Point 8		1.00	0.75	0.55	0.77
Point 9		1.00	0.90	0.59	0.83
Point 10		0.95	0.88	0.50	0.78
Point 11		1.00	0.78	0.56	0.78
Point 12		1.05	0.80	0.50	0.78
Point 13		0.50	0.80	1.05	0.78
Point 14		0.56	0.79	1.05	0.80
Point 15		0.50	1.00	1.00	0.83
Point 16		0.48	1.05	1.00	0.84
Point 17		1.00	1.00	1.05	1.02
Point 18		1.10	1.10	0.52	0.91
Point 19		1.10	1.10	0.42	0.87
Point 20		1.00	0.95	0.46	0.80
Point 21		1.05	0.95	0.45	0.82
Point 22		1.00	0.90	0.46	0.79
Point 23		1.05	0.95	0.46	0.82
Point 24		1.05	1.00	0.46	0.84
CALCULATED DATA					
Square Root of ΔP, (in. WC)$^{1/2}$	(ΔP)	0.938	0.939	0.860	0.912
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	30.16	30.15	30.15	30.15
Static Pressure, in. WC	(Pg)	-0.50	-0.60	-0.65	-0.58
Stack Pressure, in. Hg	(Ps)	30.12	30.11	30.10	30.11
Stack Cross-sectional Area, ft^2	(As)	12.57	12.57	12.57	12.57
Temperature, °F	(Ts)	69.0	72.0	73.6	71.5
Temperature, °R	(Ts)	528.6	531.7	533.3	531.184
Moisture Fraction Measured	(BWSmsd)	0.027	0.026	0.029	0.027
Moisture Fraction @ Saturation	(BWSsat)	0.023	0.026	0.027	0.026
Moisture Fraction	(BWS)	0.023	0.026	0.027	0.026
O_2 Concentration, %	(O_2)	20.9	20.9	20.9	20.9
CO_2 Concentration, %	(CO_2)	0.0	0.0	0.0	0.0
Molecular Weight, lb/lb-mole (dry)	(Md)	28.84	28.84	28.84	28.84
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.58	28.56	28.54	28.56
Velocity, ft/sec	(Vs)	52.8	53.0	48.7	51.5
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	39,813	39,971	36,697	38,827
At Standard Conditions, dscfm	(Qs)	39,075	38,880	35,533	37,829

Laboratory Data

Alliance Technical Group, LLC
Analytical Services
214 Central Circle
Decatur, AL 35603
(256) 351-0121
www.stacktest.com

Analytical Laboratory Report

Revere Copper Products Inc.
One Revere Park
Rome, New York 13440

Project No. 2023-2747-A LS

Version No. LT 2022-00_23.0

Certification Statement

Alliance Analytical Services, LLC (AAS) has completed the analysis as described in this report. Results apply only to the source(s) tested and operating condition(s) for the specific test date(s) and time(s) identified within this report. All results are intended to be considered in their entirety, and AAS is not responsible for use of less than the complete test report without written consent. This report shall not be reproduced in full or in part without written approval from the customer.

To the best of my knowledge and abilities, all information, facts and test data are correct. Data presented in this report has been checked for completeness and is accurate, error-free and legible. Any deviations or problems are detailed in the relevant sections on the test report.

This document was prepared in portable document format (.pdf) and contains pages as identified in the bottom footer of this document.

Validation Signature

The analytical data and all QC contained within this report was reviewed and validated by the following individual.

John Lawrence

Digitally signed by John Lawrence
DN: OU=Alliance Analytical Services, O=Alliance Technical Group, CN=John Lawrence, E=John.Lawrence@AllianceTG.com
Reason: I have reviewed this document
Location:
Date: 2023.06.14 10:16:02-05'00'
Foxit PDF Editor Version: 12.1.2

John Lawrence Laboratory Manager	Date

Analytical Method(s):	*Method 5 - Determination of Particulate Matter Emissions From Stationary Sources*
Filterable	The filter(s) were oven dried and desiccated per the method until a final weight was obtained. The liquid fractions were extracted if required, evaporated and cooled until a final weight was obtained. These fractions were summed together to provide the total Filterable Particulate Matter collected.
MDL	The Minimum Detection Level (MDL) is 0.5 mg per fraction. If the measured result for a fraction is less than the MDL, the MDL was used in ensuing calculations.
Blank Correction	If blank correction is performed, only blank values returned higher than the MDL are used. If a blank returns a value less than the MDL, no correction is included.
Custody:	The samples were received by John Lawrence on 06/12/23 in Decatur, AL. The samples were received in good condition with proper Chain-of-Custody documentation. No apparent container problems were noted upon receipt. Prior to analysis, the samples were kept secure with access limited to authorized personnel of AAS.
Number of Samples:	31
Labeling:	Acceptable
Analyst:	Rebecca Pope- Laboratory Analyst
Equipment:	Ohaus Balance PX224, S/N B919636400. This scale was used for analytical determinations. A&D Weighing AND EJ-1500, S/N 5A2845843. This scale was only used to measure the total mass of rinse collected. Analysis was performed on the same balance as the associated tare. Quincy Lab Inc oven, 40CG, SN G4-007640.
Lab Reagents:	Acetone Lot Number: 223196
QC Notes:	The samples met the minimum criteria established by the relevant method.
Reporting Notes:	This edition of the lab report only includes the method 5 samples. The method 202 samples will be reported in the "B" edition of the lab report. Overhauler rinse run 2 had more PM present than runs 1 and 3.
Certifications:	Primary Accreditation: Louisiana Environmental Laboratory Accreditation Program (LELAP) Agency Interest (AI) No. 194891 Certificate: 05054, Expiration Date: 6/30/23 Secondary Accreditation: Texas Commission on Environmental Quality Certificate: T104704540-23-8, Expiration Date: 2/29/24 Virginia Environmental Laboratory Accreditation Program (VELAP) VA Laboratory ID: 460299, Certificate: 12183 Expiration Date: 9/14/2023
State Registrations:	PADEP # 68-04598

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Front Half Filter			
Lab ID	8100	8101	8102
Field ID	Reversing Mill-Run 1	Reversing Mill-Run 2	Reversing Mill-Run 3
Filter ID	19346-A	20760-A	20762-A
Filter Tare Weight, g	0.5284	0.4172	0.4201
Date - Oven	6/12/23	6/12/23	6/12/23
Time - Oven	9:00	9:00	9:00
Date of Weighing	6/12/23	6/12/23	6/12/23
Time of Weighing	12:01	12:02	12:03
Filter Weight, g	0.5285	0.4175	0.4203
Filter PM Mass, mg*	**0.5**	**0.5**	**0.5**

Front Half Rinse						
Lab ID	8115		8116		8117	
Field ID	Reversing Mill-Run 1		Reversing Mill-Run 2		Reversing Mill-Run 3	
Beaker ID	8115		8116		8117	
Beaker tare, g	3.9942		3.9872		4.0036	
Field Vessel with Acetone, g	248.5		211.2		257.8	
Empty Field Vessel,g	179.1		178.0		178.0	
Acetone Mass, g	69.4		33.2		79.8	
Date - Dessicator	6/12/23		6/12/23		6/12/23	
Time - Dessicator	13:00		13:00		13:00	
Date of Weighing	6/13/23	6/14/23	6/13/23	6/14/23	6/13/23	6/14/23
Time of Weighing	13:01	7:05	13:02	7:06	13:03	7:07
Weight, g	3.9963	3.9966	3.9896	3.9895	4.0047	4.0049
Rinse PM Mass, mg*	**2.3**		**2.3**		**1.2**	
Blank Corrected	No					
Total Filterable PM Mass, mg	**2.8**		**2.8**		**1.7**	

*The total results have been calculated based on MDL values for any sample fractions which were below the MDL.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Front Half Filter			
Lab ID	8103	8104	8105
Field ID	FR Down Mill-Run 1	FR Down Mill-Run 2	FR Down Mill-Run 3
Filter ID	20767-A	20766-A	19729-A
Filter Tare Weight, g	0.4248	0.4247	0.5226
Date - Oven	6/12/23	6/12/23	6/12/23
Time - Oven	9:00	9:00	9:00
Date of Weighing	6/12/23	6/12/23	6/12/23
Time of Weighing	12:04	12:05	12:06
Filter Weight, g	0.4249	0.4247	0.5227
Filter PM Mass, mg*	**0.5**	**0.5**	**0.5**

Front Half Rinse						
Lab ID	8118		8119		8120	
Field ID	FR Down Mill-Run 1		FR Down Mill-Run 2		FR Down Mill-Run 3	
Beaker ID	8118		8119		8120	
Beaker tare, g	3.9825		4.0036		3.9920	
Field Vessel with Acetone, g	234.9		246.1		245.3	
Empty Field Vessel,g	179.6		179.3		179.3	
Acetone Mass, g	55.3		66.8		66.0	
Date - Dessicator	5/17/18		5/17/18		5/17/18	
Time - Dessicator	13:00		13:00		13:00	
Date of Weighing	6/13/23	6/14/23	6/13/23	6/14/23	6/13/23	6/14/23
Time of Weighing	13:04	7:08	13:05	7:09	13:06	7:10
Weight, g	3.9841	3.9844	4.0049	4.0050	3.9929	3.9928
Rinse PM Mass, mg*	**1.8**		**1.4**		**0.8**	
Blank Corrected	No					
Total Filterable PM Mass, mg	**2.3**		**1.9**		**1.3**	

*The total results have been calculated based on MDL values for any sample fractions which were below the MDL.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Front Half Filter						
Lab ID	8106		8107		8108	
Field ID	Furnace 39-Run 1		Furnace 39-Run 2		Furnace 39-Run 3	
Filter ID	20765-A		20770-A		20773-A	
Filter Tare Weight, g	0.4182		0.4309		0.4153	
Date - Oven	6/12/23		6/12/23		6/12/23	
Time - Oven	9:00		9:00		9:00	
Date of Weighing	6/12/23		6/12/23		6/12/23	
Time of Weighing	12:07		12:08		12:09	
Filter Weight, g	0.4184		0.4312		0.4155	
Filter PM Mass, mg*	**0.5**		**0.5**		**0.5**	
Front Half Rinse						
Lab ID	8121		8122		8123	
Field ID	Furnace 39-Run 1		Furnace 39-Run 2		Furnace 39-Run 3	
Beaker ID	8121		8122		8123	
Beaker tare, g	3.9684		4.2562		4.2570	
Field Vessel with Acetone, g	261.9		249.9		253.3	
Empty Field Vessel,g	178.4		178.6		179.0	
Acetone Mass, g	83.5		71.3		74.3	
Date - Dessicator	6/12/23		6/12/23		6/12/23	
Time - Dessicator	13:00		13:00		13:00	
Date of Weighing	6/13/23	6/14/23	6/13/23	6/14/23	6/13/23	6/14/23
Time of Weighing	13:07	7:11	13:08	7:12	13:09	7:13
Weight, g	3.9711	3.9713	4.2584	4.2585	4.2583	4.2582
Rinse PM Mass, mg*	**2.8**		**2.3**		**1.3**	
Blank Corrected	No					
Total Filterable PM Mass, mg	**3.3**		**2.8**		**1.8**	

*The total results have been calculated based on MDL values for any sample fractions which were below the MDL.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Front Half Filter			
Lab ID	8109	8110	8111
Field ID	Furnace 40-Run 1	Furnace 40-Run 2	Furnace 40-Run 3
Filter ID	20764-A	20769-A	20771-A
Filter Tare Weight, g	0.4219	0.4324	0.4262
Date - Oven	6/12/23	6/12/23	6/12/23
Time - Oven	9:00	9:00	9:00
Date of Weighing	6/12/23	6/12/23	6/12/23
Time of Weighing	12:10	12:11	12:12
Filter Weight, g	0.4341	0.4604	0.4435
Filter PM Mass, mg*	**12.2**	**28.0**	**17.3**

Front Half Rinse						
Lab ID	8124		8125		8126	
Field ID	Furnace 40-Run 1		Furnace 40-Run 2		Furnace 40-Run 3	
Beaker ID	8124		8125		8126	
Beaker tare, g	4.1017		4.0949		4.1063	
Field Vessel with Acetone, g	258.8		235.1		245.2	
Empty Field Vessel,g	179.0		179.0		178.8	
Acetone Mass, g	79.8		56.1		66.4	
Date - Dessicator	6/12/23		6/12/23		6/12/23	
Time - Dessicator	13:00		13:00		13:00	
Date of Weighing	6/13/23	6/14/23	6/13/23	6/14/23	6/13/23	6/14/23
Time of Weighing	13:10	7:14	13:11	7:15	13:12	7:16
Weight, g	4.1136	4.1139	4.1109	4.1110	4.1226	4.1225
Rinse PM Mass, mg*	**12.0**		**16.0**		**16.3**	
Blank Corrected	No					
Total Filterable PM Mass, mg	**24.2**		**44.0**		**33.6**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Front Half Filter						
Lab ID	8112		8113		8114	
Field ID	Overhauler-Run 1		Overhauler-Run 2		Overhauler-Run 3	
Filter ID	19728-A		20763-A		20761-A	
Filter Tare Weight, g	0.5189		0.4226		0.4170	
Date - Oven	6/12/23		6/12/23		6/12/23	
Time - Oven	9:00		9:00		9:00	
Date of Weighing	6/12/23		6/12/23		6/12/23	
Time of Weighing	12:13		12:14		12:15	
Filter Weight, g	0.5249		0.4316		0.4230	
Filter PM Mass, mg*	**6.0**		**9.0**		**6.0**	
Front Half Rinse						
Lab ID	8127		8128		8129	
Field ID	Overhauler-Run 1		Overhauler-Run 2		Overhauler-Run 3	
Beaker ID	8127		8128		8129	
Beaker tare, g	4.1201		4.1474		4.1063	
Field Vessel with Acetone, g	254.1		264.8		253.3	
Empty Field Vessel,g	178.4		178.2		178.7	
Acetone Mass, g	75.7		86.6		74.6	
Date - Dessicator	6/12/23		6/12/23		6/12/23	
Time - Dessicator	13:00		13:00		13:00	
Date of Weighing	6/13/23	6/14/23	6/13/23	6/14/23	6/13/23	6/14/23
Time of Weighing	13:13	7:17	13:14	7:18	13:15	7:19
Weight, g	4.1280	4.1282	4.1893	4.1892	4.1236	4.1240
Rinse PM Mass, mg*	**8.0**		**41.8**		**17.5**	
Blank Corrected	No					
Total Filterable PM Mass, mg	**14.0**		**50.8**		**23.5**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-A
Method	EPA Method 5

Blank Rinse		
Lab ID	8130	
Field ID	Acetone Blank	
Beaker ID	8130	
Beaker tare, g	4.0745	
Field Vessel with Acetone, g	308.1	
Empty Field Vessel, g	178.6	
Acetone Mass, g	129.5	
Date - Dessicator	6/12/23	
Time - Dessicator	13:00	
Date of Weighing	6/13/23	6/14/23
Time of Weighing	13:16	7:20
Weight, g	4.0747	4.0751
Measured Blank Mass, mg	**0.4**	
Blank Mass, mg*	**0.4**	
Blank Mass, mg/g	**0.0031**	

Alliance SOURCE TESTING

Chain-Of-Custody

Version No. LT 2017-01_17.0

Alliance Source Testing, LLC - Lab Services
214 Central Circle SW Decatur, AL 35603
Phone (256) 351-0121 Fax (256) 351-0121

Client Name Revere Copper Products

City, State Rome, NY

Source Reversing Mill, First Run Down Mill, Furnace 39 & 40

Project No 23-2747

Turn Around Time ☑ Standard ☐ Expedited ____ days

Blank Manuf./Lot # Acetone Lot #

Blank Manuf./Lot # Hexane Lot # 218363

						Method/Media													
						Method 5				Method 17		Method 201A				Method 202			
Sample ID	Number of Containers	Date Collected	Time Recovered	Collector Initials	HOLD	Filter Number - 83mm Quartz	Filter Number - 83mm Teflon	Probe Nozzle Rinse - Acetone	Probe Nozzle Rinse - 1-bromopropane	Filter Number - 47mm Quartz	Nozzle Rinse - Acetone	PM 2.5 Filter Number- 47mm Quartz	PM 2.5 Rinse - Acetone	PM 10 Filter Number- 47mm Quartz	PM 10 Rinse - Acetone	CPM Filter - 83mm Teflon	Condensate Catch - DIUF	Solvent Rinse - Acetone/Hexane
M5 - Reversing Mill - Run 1	2	5/31/23	15:15	SW		19346-A		✓								✓	✓	✓
M5 - Reversing Mill - Run 2	2	6/1/23	16:30	SW		20760-A		✓								✓	✓	✓
M5 - Reversing Mill - Run 3	2	6/1/23	18:15	SW		20762-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 1	2	5/31/23	17:30	SW		20767-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 2	2	6/1/23	12:30	SW		20766-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 3	2	6/1/23	14:15	SW		19729-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 1	2	6/2/23	11:00	SW		20765-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 2	2	6/2/23	12:45	SW		20770-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 3	2	6/2/23	14:45	SW		20773-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 1	2	6/1/23	~1700	SW		20764-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 2	2	6/2/23	~1200	SW		20769-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 3	2	6/2/23	~1800	SW		20771-A		✓								✓	✓	✓

Relinquished By Steven Milo Date 6/6/23

Received By [illegible] Date 6-12-23

Sample Container Recieved Temperature (°F) 75.0

Page 1 of 2

Notes

AST Office: SYR

After gravimetric analysis, send filter to MVA for PSD analysis. In lieu of PSD analysis, one filter from the Overlander will be analyzed for copper via M29 procedures.

Alliance SOURCE TESTING

Chain-Of-Custody

Version No. LT 2017-01_17.0

Alliance Source Testing, LLC - Lab Services
214 Central Circle SW Decatur, AL 35603
Phone (256) 351-0121 Fax (256) 351-0121

Client Name: Revere Copper Products

City, State: Rome, NY

Source: Cast Shop Vacuum & Overhauler

Project No.: 23-2747

Turn Around Time: ✓ Standard ☐ Expedited ____ days

Blank Manuf./Lot #: Acetone Lot #

Blank Manuf./Lot #: Hexane Lot # 218363

Sample ID	Number of Containers	Date Collected	Time Recovered	Collector Initials	HOLD	Method 5: Filter Number - 83mm Quartz	Method 5: Filter Number - 83mm Teflon	Method 5: Probe Nozzle Rinse - Acetone	Method 5: Probe Nozzle Rinse - 1-bromopropane	Method 17: Filter Number - 47mm Quartz	Method 17: Nozzle Rinse - Acetone	Method 201A: PM 2.5 Filter Number- 47mm Quartz	Method 201A: PM 2.5 Rinse - Acetone	Method 201A: PM 10 Filter Number - 47mm Quartz	Method 201A: PM 10 Rinse - Acetone	Method 202: CPM Filter - 83mm Teflon	Method 202: Condensate Catch - DIUF	Method 202: Solvent Rinse - Acetone/Hexane
M5 - Overhauler - Run 1	2	5/31/23	11:30	SW		19728-A		✓								✓	✓	✓
M5 - Overhauler - Run 2	2	5/31/23	13:00	SW		20763-A		✓								✓	✓	✓
M5 - Overhauler - Run 3	2	5/31/23	15:00	SW		20761-A		✓								✓	✓	✓
M5 Acetone Blank	1	6/5/23	~1800	JS				✓										
M202 - FT Proof Blank	2	6/5/23	~1800	JS													✓	✓
M202 - FT Reagent Blank	3	6/5/23	~1800	JS												✓	✓	✓

Relinquished By: Steven Milo Date: 6/6/23

Received By: [signature] Date: 6-12-23

Sample Container Recieved Temperature (°F): 75.0

Page 2 of 2

Notes

AST Office: SYR

After gravimetric analysis, send filter to MVA for PSD analysis. In lieu of PSD analysis, one filter from the Overlander will be analyzed for copper via M29 procedures.

Weigh-Tec
4615 Marsha Ave
Decatur, Al. 35603

Weigh-Tec
Scale Test / Calibration Report
ISO/IEC 17025:2017 Accredited

Rev: 8/1/19 Cal. Rep. 4
Accreditation# 74114
Report Number: AST-0622-001

Customer		Location			Cal. Date	Expiration Date
Alliance Source Testing		**214 Central Circle SW Decatur, AL 35603**			**6/29/2022**	**6/23**
ID	Manufactuer	Model	Serial	Description	Capacity	Min. Grad.
	Ohaus	PA214	B919636400	Balance Room	210 g	0.0001g

REPEATABILITY TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000
5	0.0001	5.0000	0.0000	5	0.0001	5.0000	0.0000
0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000

SHIFT TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000

STRAIN TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0.2	0.0001	0.2000	0.0000	0.2	0.0001	0.2000	0.0000
1	0.0001	1.0000	0.0000	1	0.0001	1.0000	0.0000
5	0.0001	5.0004	0.0004	5	0.0001	5.0000	0.0000
50	0.0003	50.0006	0.0006	50	0.0003	50.0001	0.0001
150	0.0003	150.0008	0.0008	150	0.0003	150.0001	0.0001

TOLERANCE

Tolerance: NIST HB44		Class: I	
AS FOUND		**AS LEFT**	
In Tolerance	Out of Tolerance	In Tolerance	Out of Tolerance
	YES	**YES**	

ENVIROMENT		
Enviromental Conditions Have Been Met?	**YES**	Exceptions and Conditions Needing Attention:

CALIBRATION STANDARDS USED		***Expanded uncertainty (U) expressed at approximatley 95% with K=2 factor**	
Unit # (s)	Kits: 202002 LB / 2288 KG	N.I.S.T. Traceability (Exp 2/2023)	Measurement Uncertainty
50's (3-1 Thru 3-10), 1k's and 2k'sCast		05142102, GA24327, 02172206, 05142101, LA21-635	0.00011g

INVOLVED PARTIES

Technician(s)	License Number(s)	Customer Representative
Chad Sain	502908	**John Lawrence**
Test Method: Customer Stated Weight Increments	*Authorized by: Dawn Freeman QA Manager on 7-5-22*	

P.O. Box 266 Decatur, Al. Phone 1-800-461-4153

Weigh-Tec
4615 Marsha Ave
Decatur, Al. 35603

Weigh-Tec
Scale Test / Calibration Report
ISO/IEC 17025:2017 Accredited

Rev: 8/1/19 Cal. Rep. 4
Accreditation# 74114

Report Number: AST-0622-003

Customer		Location			Cal. Date	Expiration Date
Alliance Source Testing		214 Central Circle SW Decatur, AL 35603			6/29/2022	6/23
ID	Manufactuer	Model	Serial	Description	Capacity	Min. Grad.
	A&D	EJ-1500	5A2845843	LAB	1500 g	0.1g

REPEATABILITY TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0	0.0	0.0	0.0	0	0.0	0.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
0	0.0	0.0	0.0	0	0.0	0.0	0.0

SHIFT TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0

STRAIN TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
20	0.1	20.0	0.0	20	0.1	20.0	0.0
100	0.1	100.0	0.0	100	0.1	100.0	0.0
200	0.1	200.0	0.0	200	0.1	200.0	0.0
500	0.1	500.0	0.0	500	0.1	500.0	0.0
1000	0.1	1000.0	0.0	1000	0.1	1000.0	0.0

TOLERANCE

Tolerance: NIST HB-44		Class: I	
AS FOUND		AS LEFT	
In Tolerance	Out of Tolerance	In Tolerance	Out of Tolerance
YES		YES	

ENVIROMENT		
Enviromental Conditions Have Been Met?	YES	Exceptions and Conditions Needing Attention:

CALIBRATION STANDARDS USED		*Expanded uncertainty (U) expressed at approximatley 95% with K=2 factor	
Unit # (s)	Kits: 202002 LB / 2288 KG	N.I.S.T. Traceability (Exp 2/2023)	Measurement Uncertainty
50's (3-1 Thru 3-10), 1k's and 2k'sCast		05142102, GA24327, 02172206, 05142101, LA21-635	0.11g

INVOLVED PARTIES

Technician(s)	License Number(s)	Customer Representative
	502908	John Lawrence
Test Method: Customer Stated Weight Increments	*Authorized by: Dawn Freeman QA Manager on 7-5-22*	

P.O. Box 266 Decatur, Al. Phone 1-800-461-4153

Filter ID	Weight 1 (g)	Date	Initials	Oven ID	Oven Temp	Thermometer
19320-A	0.5157	09/16/22	JRL	S/N G4-007640	105° C	379437
19321-A	0.5229	09/16/22	JRL	S/N G4-007640	105° C	379437
19322-A	0.5274	09/16/22	JRL	S/N G4-007640	105° C	379437
19323-A	0.5235	09/16/22	JRL	S/N G4-007640	105° C	379437
19324-A	0.5233	09/16/22	JRL	S/N G4-007640	105° C	379437
19325-A	0.5136	09/16/22	JRL	S/N G4-007640	105° C	379437
19326-A	0.5200	09/16/22	JRL	S/N G4-007640	105° C	379437
19327-A	0.5164	09/16/22	JRL	S/N G4-007640	105° C	379437
19328-A	0.5168	09/16/22	JRL	S/N G4-007640	105° C	379437
19329-A	0.5154	09/16/22	JRL	S/N G4-007640	105° C	379437
19330-A	0.5108	09/16/22	JRL	S/N G4-007640	105° C	379437
19331-A	0.5114	09/16/22	JRL	S/N G4-007640	105° C	379437
19332-A	0.5112	09/16/22	JRL	S/N G4-007640	105° C	379437
19333-A	0.5286	09/16/22	JRL	S/N G4-007640	105° C	379437
19334-A	0.5166	09/16/22	JRL	S/N G4-007640	105° C	379437
19335-A	0.5179	09/16/22	JRL	S/N G4-007640	105° C	379437
19336-A	0.5205	09/16/22	JRL	S/N G4-007640	105° C	379437
19337-A	0.5159	09/16/22	JRL	S/N G4-007640	105° C	379437
19338-A	0.5189	09/16/22	JRL	S/N G4-007640	105° C	379437
19339-A	0.5186	09/16/22	JRL	S/N G4-007640	105° C	379437
19340-A	0.5135	09/16/22	JRL	S/N G4-007640	105° C	379437
19341-A	0.5156	09/16/22	JRL	S/N G4-007640	105° C	379437
19342-A	0.5201	09/16/22	JRL	S/N G4-007640	105° C	379437
19343-A	0.5232	09/16/22	JRL	S/N G4-007640	105° C	379437
19344-A	0.5269	09/16/22	JRL	S/N G4-007640	105° C	379437
19345-A	0.5206	09/16/22	JRL	S/N G4-007640	105° C	379437
19346-A	0.5284	09/16/22	JRL	S/N G4-007640	105° C	379437
19347-A	0.5217	09/16/22	JRL	S/N G4-007640	105° C	379437
19348-A	0.5199	09/16/22	JRL	S/N G4-007640	105° C	379437
19349-A	0.5184	09/16/22	JRL	S/N G4-007640	105° C	379437
19350-A	0.5177	09/16/22	JRL	S/N G4-007640	105° C	379437
19351-A	0.5218	09/16/22	JRL	S/N G4-007640	105° C	379437
19352-A	0.5229	09/16/22	JRL	S/N G4-007640	105° C	379437
19353-A	0.5159	09/16/22	JRL	S/N G4-007640	105° C	379437
19354-A	0.5228	09/16/22	JRL	S/N G4-007640	105° C	379437
19355-A	0.5204	09/16/22	JRL	S/N G4-007640	105° C	379437
19356-A	0.5150	09/16/22	JRL	S/N G4-007640	105° C	379437
19357-A	0.5190	09/16/22	JRL	S/N G4-007640	105° C	379437
19358-A	0.5285	09/16/22	JRL	S/N G4-007640	105° C	379437
19359-A	0.5238	09/16/22	JRL	S/N G4-007640	105° C	379437

Filter ID	Weight 1 (g)	Date	Initials	Oven ID	Oven Temp	Thermometer
20760-A	0.4172	04/19/23	JRL	S/N G4-007640	105° C	379437
20761-A	0.4170	04/19/23	JRL	S/N G4-007640	105° C	379437
20762-A	0.4201	04/19/23	JRL	S/N G4-007640	105° C	379437
20763-A	0.4226	04/19/23	JRL	S/N G4-007640	105° C	379437
20764-A	0.4219	04/19/23	JRL	S/N G4-007640	105° C	379437
20765-A	0.4182	04/19/23	JRL	S/N G4-007640	105° C	379437
20766-A	0.4247	04/19/23	JRL	S/N G4-007640	105° C	379437
20767-A	0.4248	04/19/23	JRL	S/N G4-007640	105° C	379437
20768-A	0.4258	04/19/23	JRL	S/N G4-007640	105° C	379437
20769-A	0.4324	04/19/23	JRL	S/N G4-007640	105° C	379437
20770-A	0.4309	04/19/23	JRL	S/N G4-007640	105° C	379437
20771-A	0.4262	04/19/23	JRL	S/N G4-007640	105° C	379437
20772-A	0.4226	04/19/23	JRL	S/N G4-007640	105° C	379437
20773-A	0.4153	04/19/23	JRL	S/N G4-007640	105° C	379437
20774-A	0.4172	04/19/23	JRL	S/N G4-007640	105° C	379437
20775-A	0.4156	04/19/23	JRL	S/N G4-007640	105° C	379437
20776-A	0.4156	04/19/23	JRL	S/N G4-007640	105° C	379437
20777-A	0.4157	04/19/23	JRL	S/N G4-007640	105° C	379437
20778-A	0.4144	04/19/23	JRL	S/N G4-007640	105° C	379437
20779-A	0.4105	04/19/23	JRL	S/N G4-007640	105° C	379437
20780-A	0.4155	04/19/23	JRL	S/N G4-007640	105° C	379437
20781-A	0.4082	04/19/23	JRL	S/N G4-007640	105° C	379437
20782-A	0.4089	04/19/23	JRL	S/N G4-007640	105° C	379437
20783-A	0.4117	04/19/23	JRL	S/N G4-007640	105° C	379437
20784-A	0.4089	04/19/23	JRL	S/N G4-007640	105° C	379437
20785-A	0.4113	04/19/23	JRL	S/N G4-007640	105° C	379437
20786-A	0.4091	04/19/23	JRL	S/N G4-007640	105° C	379437
20787-A	0.4092	04/19/23	JRL	S/N G4-007640	105° C	379437
20788-A	0.4281	04/19/23	JRL	S/N G4-007640	105° C	379437
20789-A	0.4294	04/19/23	JRL	S/N G4-007640	105° C	379437
20790-A	0.4254	04/19/23	JRL	S/N G4-007640	105° C	379437
20791-A	0.4237	04/19/23	JRL	S/N G4-007640	105° C	379437
20792-A	0.4162	04/19/23	JRL	S/N G4-007640	105° C	379437
20793-A	0.4130	04/19/23	JRL	S/N G4-007640	105° C	379437
20794-A	0.4149	04/19/23	JRL	S/N G4-007640	105° C	379437
20795-A	0.4140	04/19/23	JRL	S/N G4-007640	105° C	379437
20796-A	0.4161	04/19/23	JRL	S/N G4-007640	105° C	379437
20797-A	0.4171	04/19/23	JRL	S/N G4-007640	105° C	379437
20798-A	0.4106	04/19/23	JRL	S/N G4-007640	105° C	379437
20799-A	0.4127	04/19/23	JRL	S/N G4-007640	105° C	379437

Filter ID	Weight 1 (g)	Date	Initials	Oven ID	Oven Temp	Thermometer
19720-A	0.5184	11/10/22	JRL	S/N G4-007640	105° C	379437
19721-A	0.5125	11/10/22	JRL	S/N G4-007640	105° C	379437
19722-A	0.5185	11/10/22	JRL	S/N G4-007640	105° C	379437
19723-A	0.5113	11/10/22	JRL	S/N G4-007640	105° C	379437
19724-A	0.5178	11/10/22	JRL	S/N G4-007640	105° C	379437
19725-A	0.5182	11/10/22	JRL	S/N G4-007640	105° C	379437
19726-A	0.5212	11/10/22	JRL	S/N G4-007640	105° C	379437
19727-A	0.5187	11/10/22	JRL	S/N G4-007640	105° C	379437
19728-A	0.5189	11/10/22	JRL	S/N G4-007640	105° C	379437
19729-A	0.5226	11/10/22	JRL	S/N G4-007640	105° C	379437
19730-A	0.5199	11/10/22	JRL	S/N G4-007640	105° C	379437
19731-A	0.5147	11/10/22	JRL	S/N G4-007640	105° C	379437
19732-A	0.5149	11/10/22	JRL	S/N G4-007640	105° C	379437
19733-A	0.5214	11/10/22	JRL	S/N G4-007640	105° C	379437
19734-A	0.5117	11/10/22	JRL	S/N G4-007640	105° C	379437
19735-A	0.5195	11/10/22	JRL	S/N G4-007640	105° C	379437
19736-A	0.5157	11/10/22	JRL	S/N G4-007640	105° C	379437
19737-A	0.5177	11/10/22	JRL	S/N G4-007640	105° C	379437
19738-A	0.5187	11/10/22	JRL	S/N G4-007640	105° C	379437
19739-A	0.5175	11/10/22	JRL	S/N G4-007640	105° C	379437
19740-A	0.5207	11/10/22	JRL	S/N G4-007640	105° C	379437
19741-A	0.5139	11/10/22	JRL	S/N G4-007640	105° C	379437
19742-A	0.5212	11/10/22	JRL	S/N G4-007640	105° C	379437
19743-A	0.5116	11/10/22	JRL	S/N G4-007640	105° C	379437
19744-A	0.5203	11/10/22	JRL	S/N G4-007640	105° C	379437
19745-A	0.5172	11/10/22	JRL	S/N G4-007640	105° C	379437
19746-A	0.5213	11/10/22	JRL	S/N G4-007640	105° C	379437
19747-A	0.5170	11/10/22	JRL	S/N G4-007640	105° C	379437
19748-A	0.5202	11/10/22	JRL	S/N G4-007640	105° C	379437
19749-A	0.5218	11/10/22	JRL	S/N G4-007640	105° C	379437
19750-A	0.5201	11/10/22	JRL	S/N G4-007640	105° C	379437
19751-A	0.5177	11/10/22	JRL	S/N G4-007640	105° C	379437
19752-A	0.5154	11/10/22	JRL	S/N G4-007640	105° C	379437
19753-A	0.5257	11/10/22	JRL	S/N G4-007640	105° C	379437
19754-A	0.5150	11/10/22	JRL	S/N G4-007640	105° C	379437
19755-A	0.5197	11/10/22	JRL	S/N G4-007640	105° C	379437
19756-A	0.5193	11/10/22	JRL	S/N G4-007640	105° C	379437
19757-A	0.5183	11/10/22	JRL	S/N G4-007640	105° C	379437
19758-A	0.5152	11/10/22	JRL	S/N G4-007640	105° C	379437
19759-A	0.5163	11/10/22	JRL	S/N G4-007640	105° C	379437

This is the last page of the report.

Alliance Technical Group, LLC
Analytical Services
214 Central Circle
Decatur, AL 35603
(256) 351-0121
www.stacktest.com

Analytical Laboratory Report

Revere Copper Products Inc.
One Revere Park
Rome, New York 13440

Project No. 2023-2747-B LS

Version No. LT 2022-00_23.0

Certification Statement

Alliance Analytical Services, LLC (AAS) has completed the analysis as described in this report. Results apply only to the source(s) tested and operating condition(s) for the specific test date(s) and time(s) identified within this report. All results are intended to be considered in their entirety, and AAS is not responsible for use of less than the complete test report without written consent. This report shall not be reproduced in full or in part without written approval from the customer.

To the best of my knowledge and abilities, all information, facts and test data are correct. Data presented in this report has been checked for completeness and is accurate, error-free and legible. Any deviations or problems are detailed in the relevant sections on the test report.

This document was prepared in portable document format (.pdf) and contains pages as identified in the bottom footer of this document.

Validation Signature

The analytical data and all QC contained within this report was reviewed and validated by the following individual.

John Lawrence

Digitally signed by John Lawrence
DN: OU=Alliance Analytical Services, O=Alliance Technical Group, CN=John Lawrence, E =John.Lawrence@AllianceTG.com
Reason: I have reviewed this document
Location:
Date: 2023.06.19 14:15:51-05'00'
Foxit PDF Editor Version: 12.1.2

John Lawrence
Laboratory Manager

Date

Analytical Method(s):	*Method 202 - Dry Impinger Method for Determining Condensable Particulate Matter Emissions From Stationary Sources*
Condensable	The filter(s) were cut up and extracted per the method. The organic extract was added to the organic rinse, and the inorganic extract was added to the inorganic rinse. The inorganic fraction was extracted with solvent per the method. Extracts were combined with the organic rinse. The organic and inorganic fractions were evaporated and desiccated until a final weight was obtained.
MDL	The Minimum Detection Level (MDL) is 0.5 mg per fraction. If the measured result for a fraction is less than the MDL, the MDL was used in ensuing calculations.
Blank Correction	If blank correction is performed, only blank values returned higher than the MDL are used. If a blank returns a value less than the MDL, no correction is included.
Custody:	The samples were received by John Lawrence on 06/12/23 in Decatur, AL. The samples were received in good condition with proper Chain-of-Custody documentation. No apparent container problems were noted upon receipt. Prior to analysis, the samples were kept secure with access limited to authorized personnel of AAS.
Number of Samples:	50
Labeling:	Acceptable
Analyst:	Rebecca Pope- Laboratory Analyst
Equipment:	Ohaus Balance PX224, S/N B919636400. This scale was used for analytical determinations. A&D Weighing AND EJ-1500, S/N 5A2845843. This scale was only used to measure the total mass of rinse collected. Analysis was performed on the same balance as the associated tare. Quincy Lab Inc oven, 40CG, SN G4-007640.
Lab Reagents:	Acetone Lot Number: 223196 Hexane Lot Number: 223251
QC Notes:	The samples met the minimum criteria established by the relevant method.
Reporting Notes:	This edition of the lab report only includes the method 202 samples. The method 5 samples were reported in the "A" edition of the lab report.
Certifications:	Primary Accreditation: Louisiana Environmental Laboratory Accreditation Program (LELAP) Agency Interest (AI) No. 194891 Certificate: 05054, Expiration Date: 6/30/23 Secondary Accreditation: Texas Commission on Environmental Quality Certificate: T104704540-23-8, Expiration Date: 2/29/24 Virginia Environmental Laboratory Accreditation Program (VELAP) VA Laboratory ID: 460299, Certificate: 12183 Expiration Date: 9/14/2023
State Registrations:	PADEP # 68-04598

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter						
Lab ID	8131		8132		8133	
Field ID	Reversing Mill-Run 1		Reversing Mill-Run 2		Reversing Mill-Run 3	
Organic Fraction						
Lab ID	8146		8147		8148	
Field ID	Reversing Mill-Run 1		Reversing Mill-Run 2		Reversing Mill-Run 3	
Beaker ID	8146		8147		8148	
Beaker tare, g	4.0858		4.0867		4.0810	
Field Vessel w/ Solvent, g	436.6		447.6		492.6	
Empty Field Vessel, g	284.4		286.9		284.5	
Solvent Mass, g	152.2		160.7		208.1	
Date - Dessicator	6/13/23		6/13/23		6/13/23	
Time - Dessicator	12:00		12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:01	7:21	12:02	7:22	12:03	7:23
Weight, g	4.0894	4.0892	4.0900	4.0902	4.0835	4.0832
Organic Condensable Mass, mg*	**3.5**		**3.4**		**2.3**	
Inorganic Fraction						
Lab ID	8161		8162		8163	
Field ID	Reversing Mill-Run 1		Reversing Mill-Run 2		Reversing Mill-Run 3	
Beaker ID	G2842		G2843		G2844	
Beaker tare, g	42.2759		41.0205		40.3001	
Field Vessel w/ Water, g	602.1		624.9		578.0	
Empty Field Vessel, g	288.3		284.0		285.9	
Water Mass, g	313.8		340.9		292.1	
Date - Dessicator	6/16/23		6/16/23		6/16/23	
Time - Dessicator	10:00		10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:00	13:01	7:01	13:02	7:02	13:03
Weight, g	42.2780	42.2777	41.0225	41.0227	40.3021	40.3022
Inorganic Condensable Mass, mg*	**2.0**		**2.1**		**2.0**	
Blank Corrected	Yes					
Total Condensable PM Mass, mg	**3.5**		**3.5**		**2.4**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter						
Lab ID	8134		8135		8136	
Field ID	FR Down Mill-Run 1		FR Down Mill-Run 2		FR Down Mill-Run 3	
Organic Fraction						
Lab ID	8149		8150		8151	
Field ID	FR Down Mill-Run 1		FR Down Mill-Run 2		FR Down Mill-Run 3	
Beaker ID	8149		8150		8151	
Beaker tare, g	4.0796		4.0925		4.0775	
Field Vessel w/ Solvent, g	404.1		400.7		450.0	
Empty Field Vessel, g	285.4		289.5		286.6	
Solvent Mass, g	118.7		111.2		163.4	
Date - Dessicator	6/13/23		6/13/23		6/13/23	
Time - Dessicator	12:00		12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:04	7:24	12:05	7:25	12:06	7:26
Weight, g	4.0830	4.0831	4.0963	4.0962	4.0805	4.0809
Organic Condensable Mass, mg*	**3.4**		**3.7**		**3.2**	
Inorganic Fraction						
Lab ID	8164		8165		8166	
Field ID	FR Down Mill-Run 1		FR Down Mill-Run 2		FR Down Mill-Run 3	
Beaker ID	G2845		G2846		G2847	
Beaker tare, g	40.3669		40.8900		38.6463	
Field Vessel w/ Water, g	565.1		503.7		580.5	
Empty Field Vessel, g	289.2		287.2		290.3	
Water Mass, g	275.9		216.5		290.2	
Date - Dessicator	6/16/23		6/16/23		6/16/23	
Time - Dessicator	10:00		10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:03	13:04	7:04	13:05	7:05	13:06
Weight, g	40.3716	40.3717	40.8919	40.8918	38.6472	38.6476
Inorganic Condensable Mass, mg*	**4.8**		**1.9**		**1.1**	
Blank Corrected	Yes					
Total Condensable PM Mass, mg	**6.2**		**3.6**		**2.3**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter						
Lab ID	8137		8138		8139	
Field ID	Furnace 39-Run 1		Furnace 39-Run 2		Furnace 39-Run 3	
Organic Fraction						
Lab ID	8152		8153		8154	
Field ID	Furnace 39-Run 1		Furnace 39-Run 2		Furnace 39-Run 3	
Beaker ID	8152		8153		8154	
Beaker tare, g	4.0899		4.0880		4.4540	
Field Vessel w/ Solvent, g	465.0		473.7		417.3	
Empty Field Vessel, g	284.6		287.0		286.2	
Solvent Mass, g	180.4		186.7		131.1	
Date - Dessicator	6/13/23		6/13/23		6/13/23	
Time - Dessicator	12:00		12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:07	7:27	12:08	7:28	12:09	7:29
Weight, g	4.0927	4.0928	4.0906	4.0904	4.4562	4.4565
Organic Condensable Mass, mg*	**2.9**		**2.5**		**2.4**	
Inorganic Fraction						
Lab ID	8167		8168		8169	
Field ID	Furnace 39-Run 1		Furnace 39-Run 2		Furnace 39-Run 3	
Beaker ID	G2848		G2849		G2850	
Beaker tare, g	40.8075		38.4875		42.8784	
Field Vessel w/ Water, g	617.6		588.9		567.5	
Empty Field Vessel, g	287.0		284.9		287.0	
Water Mass, g	330.6		304.0		280.5	
Date - Dessicator	6/16/23		6/16/23		6/16/23	
Time - Dessicator	10:00		10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:06	13:07	7:07	13:08	7:08	13:09
Weight, g	40.8082	40.8086	38.4884	38.4888	42.8796	42.8800
Inorganic Condensable Mass, mg*	**0.9**		**1.1**		**1.4**	
Blank Corrected	Yes					
Total Condensable PM Mass, mg	**1.8**		**1.6**		**1.8**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter						
Lab ID	8140		8141		8142	
Field ID	Furnace 40-Run 1		Furnace 40-Run 2		Furnace 40-Run 3	
Organic Fraction						
Lab ID	8155		8156		8157	
Field ID	Furnace 40-Run 1		Furnace 40-Run 2		Furnace 40-Run 3	
Beaker ID	8155		8156		8157	
Beaker tare, g	4.3865		4.3918		3.9984	
Field Vessel w/ Solvent, g	486.2		451.3		381.6	
Empty Field Vessel, g	290.2		289.2		288.2	
Solvent Mass, g	196.0		162.1		93.4	
Date - Dessicator	6/13/23		6/13/23		6/13/23	
Time - Dessicator	12:00		12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:10	7:30	12:11	7:31	12:12	7:32
Weight, g	4.3898	4.3897	4.3988	4.3984	4.0020	4.0018
Organic Condensable Mass, mg*	**3.3**		**6.8**		**3.5**	
Inorganic Fraction						
Lab ID	8170		8171		8172	
Field ID	Furnace 40-Run 1		Furnace 40-Run 2		Furnace 40-Run 3	
Beaker ID	G2851		G2852		G2853	
Beaker tare, g	40.8312		41.9771		40.3893	
Field Vessel w/ Water, g	628.3		545.2		426.1	
Empty Field Vessel, g	290.1		286.4		289.2	
Water Mass, g	338.2		258.8		136.9	
Date - Dessicator	6/16/23		6/16/23		6/16/23	
Time - Dessicator	10:00		10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:09	13:10	7:10	13:11	7:11	13:12
Weight, g	40.8327	40.8331	41.9780	41.9784	40.3912	40.3916
Inorganic Condensable Mass, mg*	**1.7**		**1.1**		**2.1**	
Blank Corrected	Yes					
Total Condensable PM Mass, mg	**3.0**		**5.9**		**3.6**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter						
Lab ID	8143		8144		8145	
Field ID	Overhauler-Run 1		Overhauler-Run 2		Overhauler-Run 3	
Organic Fraction						
Lab ID	8158		8159		8160	
Field ID	Overhauler-Run 1		Overhauler-Run 2		Overhauler-Run 3	
Beaker ID	8158		8159		8160	
Beaker tare, g	3.8880		3.8495		3.8363	
Field Vessel w/ Solvent, g	431.6		482.1		480.5	
Empty Field Vessel, g	287.8		285.0		285.1	
Solvent Mass, g	143.8		197.1		195.4	
Date - Dessicator	6/13/23		6/13/23		6/13/23	
Time - Dessicator	12:00		12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:13	7:33	12:14	7:34	12:15	7:35
Weight, g	3.8975	3.8974	3.8566	3.8567	3.8406	3.8403
Organic Condensable Mass, mg*	**9.5**		**7.2**		**4.1**	
Inorganic Fraction						
Lab ID	8173		8174		8175	
Field ID	Overhauler-Run 1		Overhauler-Run 2		Overhauler-Run 3	
Beaker ID	G2854		G2855		G2856	
Beaker tare, g	42.6684		39.0073		40.6435	
Field Vessel w/ Water, g	620.1		674.6		631.1	
Empty Field Vessel, g	286.6		286.4		288.0	
Water Mass, g	333.5		388.2		343.1	
Date - Dessicator	6/16/23		6/16/23		6/16/23	
Time - Dessicator	10:00		10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:12	13:13	7:13	13:14	7:14	13:15
Weight, g	42.6696	42.6701	39.0086	39.0090	40.6441	40.6445
Inorganic Condensable Mass, mg*	**1.4**		**1.5**		**0.8**	
Blank Corrected	Yes					
Total Condensable PM Mass, mg	**8.9**		**6.7**		**2.9**	

*All fractions were analyzed and returned values greater than the MDL of 0.5 mg.

Client	Revere Copper Products Inc.
City, State	Rome, NY
Project No.	AST-2023-2747-B
Method	US EPA Method 202

Teflon Filter Blanks				
	Field Train Blank		**Proof Blank**	
Lab ID	8176		N/A	
Field ID	Field Train Blank		N/A	
Organic Fraction Blanks				
	Field Train Blank		**Proof Blank**	
Lab ID	8177		8179	
Field ID	Field Train Blank		Proof Blank	
Beaker ID	8177		8179	
Beaker tare, g	3.8391		3.9007	
Field Vessel w/ Solvent, g	322.8		320.6	
Empty Field Vessel, g	177.8		178.6	
Solvent Mass, g	145.0		142.0	
Date - Dessicator	6/13/23		6/13/23	
Time - Dessicator	12:00		12:00	
Date of Weighing	6/14/23	6/15/23	6/14/23	6/15/23
Time of Weighing	12:16	7:36	12:17	7:37
Weight, g	3.8410	3.8407	3.9021	3.9024
Measured Organic Mass, mg	**1.7**		**1.5**	
Organic Mass, mg*	**1.7**		**1.5**	
Inorganic Fraction Blanks				
	Field Train Blank		**Proof Blank**	
Lab ID	8178		8180	
Field ID	Field Train Blank		Proof Blank	
Beaker ID	G2857		G2858	
Beaker tare, g	40.1622		41.4997	
Field Vessel w/ Water, g	528.0		483.5	
Empty Field Vessel, g	282.9		287.6	
Water Mass, g	245.1		195.9	
Date - Dessicator	6/16/23		6/16/23	
Time - Dessicator	10:00		10:00	
Date of Weighing	6/19/23	6/19/23	6/19/23	6/19/23
Time of Weighing	7:15	13:16	7:16	13:17
Weight, g	40.1628	40.1632	41.5004	41.5008
Measured Inorganic Mass, mg	**0.8**		**0.9**	
Inorganic Mass, mg*	**0.8**		**0.9**	

Alliance SOURCE TESTING

Chain-Of-Custody

Version No. LT 2017-01_17.0

Alliance Source Testing, LLC - Lab Services
214 Central Circle SW Decatur, AL 35603
Phone (256) 351-0121 Fax (256) 351-0121

Client Name Revere Copper Products

City, State Rome, NY

Source Reversing Mill, First Run Down Mill, Furnace 39 & 40

Project No 23-2747

Turn Around Time ✓ Standard ☐ Expedited ___ days

Blank Manuf./Lot # Acetone Lot #

Blank Manuf./Lot # Hexane Lot # 218363

						Method/Media: Method 5				Method 17		Method 201A				Method 202		
Sample ID	Number of Containers	Date Collected	Time Recovered	Collector Initials	HOLD	Filter Number - 83mm Quartz	Filter Number - 83mm Teflon	Probe Nozzle Rinse - Acetone	Probe Nozzle Rinse - 1-bromopropane	Filter Number - 47mm Quartz	Nozzle Rinse - Acetone	PM 2.5 Filter Number- 47mm Quartz	PM 2.5 Rinse - Acetone	PM 10 Filter Number- 47mm Quartz	PM 10 Rinse - Acetone	CPM Filter - 83mm Teflon	Condensate Catch - DIUF	Solvent Rinse - Acetone/Hexane
M5 - Reversing Mill - Run 1	2	5/31/23	15:15	SW		19346-A		✓								✓	✓	✓
M5 - Reversing Mill - Run 2	2	6/1/23	16:30	SW		20760-A		✓								✓	✓	✓
M5 - Reversing Mill - Run 3	2	6/1/23	18:15	SW		20762-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 1	2	5/31/23	17:30	SW		20767-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 2	2	6/1/23	12:30	SW		20766-A		✓								✓	✓	✓
M5 - First Run Down Mill - Run 3	2	6/1/23	14:15	SW		19729-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 1	2	6/2/23	11:00	SW		20765-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 2	2	6/2/23	12:45	SW		20770-A		✓								✓	✓	✓
M5 - Furnace 39 - Run 3	2	6/2/23	14:45	SW		20773-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 1	2	6/1/23	~1700	SW		20764-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 2	2	6/2/23	~1200	SW		20769-A		✓								✓	✓	✓
M5 - Furnace 40 - Run 3	2	6/2/23	~1800	SW		20771-A		✓								✓	✓	✓

Relinquished By Steven Milo Date 6/6/23

Received By [signature] Date 6-12-23

Sample Container Recieved Temperature (°F) 75.0

Page 1 of 2

Notes

AST Office: SYR

After gravimetric analysis, send filter to MVA for PSD analysis. In lieu of PSD analysis, one filter from the Overlander will be analyzed for copper via M29 procedures.

Alliance SOURCE TESTING

Chain-Of-Custody

Version No. LT 2017-01_17.0

Alliance Source Testing, LLC - Lab Services
214 Central Circle SW Decatur, AL 35603
Phone (256) 351-0121 Fax (256) 351-0121

Client Name: Revere Copper Products
City, State: Rome, NY
Source: Cast Shop Vacuum & Overhauler
Project No.: 23-2747

Turn Around Time: ✓ Standard ☐ Expedited ____ days
Blank Manuf./Lot #: Acetone Lot #
Blank Manuf./Lot #: Hexane Lot # 218363

						Method/Media												
						Method 5				Method 17		Method 201A				Method 202		
Sample ID	Number of Containers	Date Collected	Time Recovered	Collector Initials	HOLD	Filter Number - 83mm Quartz	Filter Number - 83mm Teflon	Probe Nozzle Rinse - Acetone	Probe Nozzle Rinse - 1-bromopropane	Filter Number - 47mm Quartz	Nozzle Rinse - Acetone	PM 2.5 Filter Number- 47mm Quartz	PM 2.5 Rinse - Acetone	PM 10 Filter Number- 47mm Quartz	PM 10 Rinse - Acetone	CPM Filter - 83mm Teflon	Condensate Catch - DIUF	Solvent Rinse - Acetone/Hexane
M5 - Overhauler - Run 1	2	5/31/23	11:30	SW		19728-A		✓								✓	✓	✓
M5 - Overhauler - Run 2	2	5/31/23	13:00	SW		20763-A		✓								✓	✓	✓
M5 - Overhauler - Run 3	2	5/31/23	15:00	SW		20761-A		✓								✓	✓	✓
- M5 Acetone Blank	1	6/5/23	~1800	JS				✓										
M202 - FT Proof Blank	2	6/5/23	~1800	JS													✓	✓
M202 -FT Reagent Blank	3	6/5/23	~1800	JS												✓	✓	✓

Relinquished By: Steven Milo Date: 6/6/23
Received By: [signature] Date: 6-12-23
Sample Container Recieved Temperature (°F): 75.0
Page 2 of 2

Notes
AST Office: SYR
After gravimetric analysis, send filter to MVA for PSD analysis. In lieu of PSD analysis, one filter from the Overlander will be analyzed for copper via M29 procedures.

Weigh-Tec
4615 Marsha Ave
Decatur, Al. 35603

Weigh-Tec
Scale Test / Calibration Report
ISO/IEC 17025:2017 Accredited

Rev: 8/1/19 Cal. Rep. 4
Accreditation# 74114

Report Number: AST-0622-001

Customer		Location			Cal. Date	Expiration Date
Alliance Source Testing		**214 Central Circle SW Decatur, AL 35603**			**6/29/2022**	**6/23**
ID	Manufactuer	Model	Serial	Description	Capacity	Min. Grad.
	Ohaus	PA214	B919636400	Balance Room	210 g	0.0001g

REPEATABILITY TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000
5	0.0001	5.0000	0.0000	5	0.0001	5.0000	0.0000
0	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000

SHIFT TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000
5	0.0001	5.0001	0.0001	5	0.0001	5.0000	0.0000

STRAIN TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0.2	0.0001	0.2000	0.0000	0.2	0.0001	0.2000	0.0000
1	0.0001	1.0000	0.0000	1	0.0001	1.0000	0.0000
5	0.0001	5.0004	0.0004	5	0.0001	5.0000	0.0000
50	0.0003	50.0006	0.0006	50	0.0003	50.0001	0.0001
150	0.0003	150.0008	0.0008	150	0.0003	150.0001	0.0001

TOLERANCE

Tolerance: NIST HB44		Class: I	
AS FOUND		**AS LEFT**	
In Tolerance	Out of Tolerance	In Tolerance	Out of Tolerance
	YES	**YES**	

ENVIROMENT		
Enviromental Conditions Have Been Met?	**YES**	Exceptions and Conditions Needing Attention:

CALIBRATION STANDARDS USED		*Expanded uncertainty (U) expressed at approximatley 95% with K=2 factor	
Unit # (s)	Kits: 202002 LB / 2288 KG	N.I.S.T. Traceability (Exp 2/2023)	Measurement Uncertainty
50's (3-1 Thru 3-10), 1k's and 2k'sCast		05142102, GA24327, 02172206, 05142101, LA21-635	0.00011g

INVOLVED PARTIES

Technician(s)	License Number(s)	Customer Representative
Chad Sain	502908	**John Lawrence**
Test Method: Customer Stated Weight Increments	*Authorized by: Dawn Freeman QA Manager on 7-5-22*	

P.O. Box 266 Decatur, Al. Phone 1-800-461-4153

Weigh-Tec
4615 Marsha Ave
Decatur, Al. 35603

Weigh-Tec
Scale Test / Calibration Report
ISO/IEC 17025:2017 Accredited

Rev: 8/1/19 Cal. Rep. 4
Accreditation# 74114

Report Number: AST-0622-003

Customer	Location	Cal. Date	Expiration Date
Alliance Source Testing	**214 Central Circle SW Decatur, AL 35603**	**6/29/2022**	**6/23**

ID	Manufactuer	Model	Serial	Description	Capacity	Min. Grad.
	A&D	EJ-1500	5A2845843	LAB	1500 g	0.1g

REPEATABILITY TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
0	0.0	0.0	0.0	0	0.0	0.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
0	0.0	0.0	0.0	0	0.0	0.0	0.0

SHIFT TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0
20	0.1	20.0	0.0	20	0.1	20.0	0.0

STRAIN TEST

As Found				As Left			
Test Wt.	Tolerance	Indication	Error	Test Wt.	Tolerance	Indication	Error
20	0.1	20.0	0.0	20	0.1	20.0	0.0
100	0.1	100.0	0.0	100	0.1	100.0	0.0
200	0.1	200.0	0.0	200	0.1	200.0	0.0
500	0.1	500.0	0.0	500	0.1	500.0	0.0
1000	0.1	1000.0	0.0	1000	0.1	1000.0	0.0

TOLERANCE

Tolerance: NIST HB-44		Class: I	
AS FOUND		**AS LEFT**	
In Tolerance	Out of Tolerance	In Tolerance	Out of Tolerance
YES		**YES**	

ENVIROMENT		
Enviromental Conditions Have Been Met?	**YES**	Exceptions and Conditions Needing Attention:

CALIBRATION STANDARDS USED		*Expanded uncertainty (U) expressed at approximatley 95% with K=2 factor	
Unit # (s)	Kits: 202002 LB / 2288 KG	N.I.S.T. Traceability (Exp 2/2023)	Measurement Uncertainty
50's (3-1 Thru 3-10), 1k's and 2k'sCast		05142102, GA24327, 02172206, 05142101, LA21-635	0.11g

INVOLVED PARTIES

Technician(s)	License Number(s)	Customer Representative
	502908	**John Lawrence**
Test Method: Customer Stated Weight Increments	*Authorized by: Dawn Freeman QA Manager on 7-5-22*	

This report shall not be reproduced, except in full, without the written approval of Weigh-Tec
P.O. Box 266 Decatur, Al. Phone 1-800-461-4153

This is the last page of the report.

Alliance Source Testing, LLC
Analytical Lab Services
4500 Ball Rd NE
Circle Pines, MN 55014
(763) 786-6020
www.stacktest.com

Analytical Laboratory Report

Revere

EPA Methods 29

Project No. AST-2023-2747

Version No. LT 2018-00_18.1

Certification Statement

Alliance Source Testing, LLC (AST) has completed the analysis as described in this report. Results apply only to the source(s) tested and operating condition(s) for the specific test date(s) and time(s) identified within this report. All results are intended to be considered in their entirety, and AST is not responsible for use of less than the complete test report without written consent. This report shall not be reproduced in full or in part without written approval from the customer.

To the best of my knowledge and abilities, all information, facts and test data are correct. Data presented in this report has been checked for completeness and is accurate, error-free and legible. Any deviations or problems are detailed in the relevant sections on the test report.

This document was prepared in portable document format (.pdf) and contains pages as identified in the bottom footer of this document.

Validation Signature

The analytical data and all QC contained within this report was reviewed and validated by the following individual.

Gregg Holman MSP Laboratory Manager	Date
Hailee Bonds MSP QC Officer	Date

Analytical Methods: Method 29 - Metals Emissions from Stationary Sources

MDL ICP Metals: The Method Detection Limit (MDL) is specified below per the analyte at the instrument. If the measured concentration for a fraction is less than the MDL, the <MDL was used in ensuing calculations. If the concentration is >MDL but <RL the value is flagged with a "J".

Analyte	Reporting Limit Units (ug/mL)	Method Detection Limit Units (ug/mL)
Copper	0.020	0.010

Blank Correction: No blank correct was perform unless otherwise noted.

Custody: The samples were received by Blake Messer on 6/22/2023 at AAS, Circle Pines, Minnesota. The samples were received in good condition with proper Chain-of-Custody documentation. No apparent container problems were noted upon receipt. Prior to analysis, the samples were kept secure with access limited to authorized personnel of AAS.

Labeling: Acceptable

Approval by: Gregg Holman - Laboratory Manager

Equipment: Perkin Elmer Optima 8300 (ICP01), SN:78S1401226

QC Notes: The samples met the minimum criteria established by the relevant method.

Data Qualifiers None

Reporting Notes: Incorrect solution was added to the instrument spike so no copper was added.

ALLIANCE ANALYTICAL SERVICES
(763)786-6020

Copper by ICP Reporting Form

Client: Revere
Sample Type: M29, Filter
Digestion Method: M-29

Due Date: 7/7/23
Analyst's Initials: TB
Analytical Method: EPA 6010D

AST Log # 232747	Run	Prep Date	Analysis Date	Instru. Reading (ug/mL)	Instru. RL (ug/mL)	Instru. MDL (ug/mL)	Dilution	Total Volume of part 1 (mL)	Amount of 1A Digested (mL)	Final Volume of Digestate (1A) (mL)	Reported Result: MDL (Total ug)	Reported Result: Reporting Limit (Total ug)	Reported Result: Analytical Results (Total ug)
-01	1	7/3/23	7/3/23	21.99	0.020	0.010	2	100	100	100	2.0	4.0	4400
Method Blank		7/3/23	7/3/23	0.010 <	0.020	0.010	2	100	100	100	2.0	4.0	2.0 <

Comments:

15274

MVA SCIENTIFIC CONSULTANTS

Full Service Analytical Microscopy Laboratory

CHAIN OF CUSTODY

Project No. or Identification AST-2023-2747

Client Sample ID	MVA ID*	Comments / Analytical Requests
Filter # 19346-A	AJ0999	PSD Analysis
Filter # 20760-A	AJ1000	
Filter # 20762-A	AJ1001	
Filter # 20767-A	AJ1002	
Filter # 20766-A	AJ1003	
Filter # 19729-A	AJ1004	
Filter # 20765-A	AJ1005	
Filter # 20770-A	AJ1006	
Filter # 20773-A	AJ1007	
Filter # 20764-A	AJ1008	
Filter # 20769-A	AJ1009	
Filter # 20771-A	AJ1010	
** Filter # 19728-A	AJ1011	* Copper via M29 * -01
Filter # 20763-A	AJ1012	PSD Analysis
Filter # 20761-A	AJ1013	PSD Analysis
** Sent to Greg Holman 6/20/2023		Please send Results + OAF
via FedEx		to: SYRReports@stacktest.com

Relinquished by (sign): John Lawrence	Relinquished by (sign):
Via: Fed Ex	Via:
Date: 6-15-23 Printed Name: John Lawrence	Date: Printed Name:
Company: Alliance Source Testing	Company:

Received by (sign): Melissa A Holman	Received by (sign): [signature]
Date: 6/16/23 Printed Name: Melissa Holman	Date: 06/22/23 Printed Name: Blake Messer
Company: MVA Scientific Consultants	Company: Alliance

Last Page of Report

EXHIBIT 4
EMERGENCY GENERATOR CERTIFICATION

	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **2023 MODEL YEAR** **CERTIFICATE OF CONFORMITY** **WITH THE CLEAN AIR ACT**	**OFFICE OF TRANSPORTATION** **AND AIR QUALITY** **ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Generac Power Systems, Inc. (U.S. Manufacturer or Importer) **Certificate Number: PGNXB14.22C1-025**	**Effective Date:** **09/01/2022** **Expiration Date:** **12/31/2023**	**Byron J. Bunker, Division Director** **Compliance Division**	**Issue Date:** **09/01/2022** **Revision Date:** **N/A**

Manufacturer: Generac Power Systems, Inc.
Engine Family: PGNXB14.22C1
Mobile/Stationary Certification Type: Stationary
Fuel : Natural Gas (CNG/LNG)
Emission Standards :
Part 60 Subpart JJJJ Table 1
VOC (g/Hp-hr) : 1.0
NOx (g/Hp-hr) : 2.0
CO (g/Hp-hr) : 4.0
Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

EXHIBIT 5
DEGREASER SDS EXCERPTS

Storage P403 + P405 + P235 Store locked up in a well-ventilated place. Keep cool.

Disposal P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight percent
Distillates, petroleum, hydrotreated light	64742-47-8	100

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 4 FIRST AID MEASURES

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen. Call a physician immediately.

Ingestion If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES

Fire/explosion NFPA Class IIIA combustible liquid.

Suitable extinguishing media Water spray or fog, foam, dry chemical, CO2

Protective equipment and precautions for firefighters Wear self-contained breathing apparatus and protective suit.

Further information Keep containers and surroundings cool with water spray.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Japan. Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan. Industrial Safety & Health Law (ISHL) Inventory	Listed
Canada. Domestic Substances List (DSL) Inventory	Listed
Canadian Non-Domestic Substance Listing (NDSL)	Not listed
European Inventory of Existing Commercial Chemical Substances (EINECS) Listing	Listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS)	Listed
Korea. Existing Chemicals Inventory (KECI)	Listed
China. Inventory of Existing Chemical Substances (IECSC)	Listed
Mexico. National Inventory of Chemical Substances (INSQ)	Listed
New Zealand. Inventory of Chemicals (NZIoC)	Listed
Switzerland. Inventory of Notified New Substances (CHINV)	Listed
Taiwan. National Existing Chemical Inventory (NECI)	Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Air Resources Board - Compliant

California Prop. 65

Components	CAS-No.
None	

New York

Exempt under 6 NYCRR – Subpart 226-1, Contains less than 25 g/L of VOC.

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

	Health	Flammability	Physical Hazard/ Instability
HMIS®	1	2	0
NFPA	1	2	0

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Solvents and Petroleum Service, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

EXHIBIT 6
ANNEALER FLUIDS SDS EXCERPTS

AMERICAN REFINING GROUP, INC.

Safety Data Sheet

Prepared according to GHS

1. Identification

Product Name	**Navi-Guard Roll Oil 135**
Product Code	**7700**
Recommended Use	**Rolling Oil**
Company	American Refining Group, Inc. 77 North Kendall Avenue Bradford, PA 16701 www.amref.com msds@amref.com
Emergency Telephone Number(s)	Chemtrec 1-800-424-9300 (24 HRS) ARG: 814-368-1297 (24 HRS)

2. Hazards Identification

GHS Classification	Aspiration Hazard Category 1
Signal Word	DANGER!
Hazard Statements	May be fatal if swallowed and enters airways
Other Hazard Information	Not applicable
GHS Pictogram	
Precautionary Statements	**If swallowed:** immediately call a poison center or doctor. **Do NOT induce vomiting.** **Store Locked up** **Dispose of contents in accordance with local/regional/national/ international regulations**

3. Composition / Information on Ingredients

CAS No.	Component	Common Name	Percent
64742-56-9	Distillates (petroleum), solvent-dewaxed light paraffinic	Light Lube Neutral	65-75

4. First Aid Measures

Eyes	Check for and remove any contact lenses. Flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Get medical attention if irritation develops.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Polyethylene glycol MW 200	25322-68-3	30 - 60
Azole Derivative	Proprietary	30 - 60
Diethylene Glycol	111-46-6	1 - 5

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.

Skin contact: Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.

Eye contact: In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion: Get immediate medical attention. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Symptoms: See Section 11.

Notes to physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear full protective clothing. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.

Clean-up methods: Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

	Keep cool. Store locked up.
Disposal:	Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Petroleum Distillates	Proprietary	60 - 100
2-Butoxyethanol	111-76-2	1 - 5

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation:	If symptoms are experienced, remove source of contamination or move victim to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	For skin contact flush with large amounts of water. If adverse health effects develop seek medical attention.
Eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. If symptoms develop and persist, get medical attention.
Ingestion:	Drink 1-2 glasses of water, seek medical advice. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk.
Symptoms:	See Section 11.
Notes to physician:	This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	Vapors are heavier than air and may travel to ignition sources and flash back. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition.
Hazardous combustion products:	Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Eliminate ignition sources including sources of electrical, static or frictional sparks. Ventilated area.

WALLOVER 40

 # 001804

Material Safety Data Sheet

Wallover Oil Company	WOCO PREMIUM 40
Manufacturer	Identity (Trade Name As Used On Label)
21845 Drake Rd.	HYPR40
Address	MSDS Number *
Strongsville, Ohio 44149	
	CAS Number*
(440) 238-9250	04/07/09
Phone Number (For Information)	Date Prepared
(330) 385-9336	Frank Frazee
Emergency Phone Number	Prepared By*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS - Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%*	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Petroleum distillates (Mineral Oil)	100	5 mg/m3	5 mg/m3	STEL 10 mg/m3
Non-Hazardous Ingredients				
TOTAL	100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Pt	N.D.	Specific Gravity (H2O = 1)	0.83
Vapor Pressure (mm)	Nil	Melting Pt	N.A.
Vapor Density (Air=1)	N.A.	Evaporation Rate (water =1)	Nil
Solubility in Water	Negligible	Water Reactive	No

Appearance and Odor: Transparent light yellow oily liquid.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point & Method Used	>250 °F (COC)	Flammability Limits in Air, % by Volume			
Extinguisher Media	Foam, dry chemical or CO2 preferred	LEL	N.D.	UEL	N.D.

Special Fire Fighting Procedures: Wear self contained breathing apparatus. Avoid use of solid water streams.

Unusual Fire and Explosion Hazards: None known.

*Optional N.A. = Not Applicable N.D. = Not Determined