STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE

PERMIT TO CONSTRUCT / MODIFY AIR CONTAMINANT SOURCE(S)

Permit Number: 979077

Facility (Permittee): Heraeus Metal Processing, LLC

Facility ID: 65-0049

Facility Address: 1975 Knoxville Highway, Wartburg
Morgan

Facility Classification: Title V

Federal Requirements: Case by Case MACT

Facility Description: Precious Metals Reclamation Facility

Permit 979077 consisting of 28 pages is hereby issued November 18, 2021, pursuant to the Tennessee Air Quality Act and by the Technical Secretary, Tennessee Air Pollution Control Board, Department of Environment and Conservation. This permit supersedes all previously issued permits for this/these source(s). This permit expires on November 17, 2023. The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations (TAPCR).

Michelle W. Owenby
Technical Secretary
Tennessee Air Pollution Control Board

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

Section I – Sources Included in this Construction Permit

FACILITY DESCRIPTION			
Source Number	**Source Description**	**Status**	**Control Device/Equipment**
14	Smelter	New	Lime Injected Baghouse
15	Calciner, ball mills, and blender	New	Baghouse
16	Hammer mill	New	Baghouse
17	Silos, and Day Bins	New	Bin Vents

Section II – Permit Record

Permit Type	Description of Permit Action	Issue Date
New	Initial construction permit issuance	November 18, 2021

Section III - General Permit Conditions

G1. Responsible Person

The application that was utilized in the preparation of this construction permit is dated May 25, 2021 and is signed by Norbert Ritschel, Senior Vice President and Plant Manager, the Responsible Person for the permittee. The Responsible Person may be the owner, president, vice-president, general partner, plant manager, environmental/health/safety coordinator, or other person that is able to represent and bind the facility in environmental permitting affairs. If this Responsible Person terminates their employment or is assigned different duties and is no longer the person to represent and bind the permittee in environmental permitting affairs, the new Responsible Person for the permittee shall notify the Technical Secretary of the change in writing. The Notification shall include the name and title of the new Responsible Person assigned by the permittee to represent and bind the permittee in environmental permitting affairs, and the date the new Responsible Person was assigned these duties.

Should a change in the Responsible Person occur, the new Responsible Person must submit the Notification provided in Appendix 1 of this permit no later than 30 days after the change. A separate notification shall be submitted for each subsequent change in Responsible Person.

TAPCR 1200-03-09-.03(8)

G2. Application and Agreement Letters

This source shall operate in accordance with the terms of this permit, the information submitted in the approved permit application referenced in **Condition G1**, and any documented agreements made with the Technical Secretary.

TAPCR 1200-03-09-.01(1)(d)

G3. Submittals

Unless otherwise specified within this permit, the permittee shall submit all plans, checklists, certifications, notifications, test protocols, reports, applications, and fees to the attention of the following Division Programs at the addresses indicated in the table below:

Permitting Program	Compliance Validation Program	Field Services Program
• Notifications • Startup certifications • Applications • NSPS reports • MACT/GACT/NESHAP reports • Fees • Emission statements • Construction permit extension requests	• Test protocols • Emission test reports • Visible emission evaluation reports	• Semiannual reports • Annual compliance status reports
Division of Air Pollution Control William R. Snodgrass TN Tower, 15th Floor 312 Rosa L. Parks Avenue Nashville, TN 37243 Air.Pollution.Control@tn.gov		Knoxville Environmental Field Office 3711 Middlebrook Pike Knoxville, TN 37921 APC.KnoxEFO@tn.gov

The permittee shall submit the information identified above as requested in this permit. In lieu of submitting this information to the mailing addresses above, the permittee may submit the information to the attention of the respective Division Programs via e-mail in Adobe Portable Document format (PDF) to the specified email address.

TAPCR 1200-03-09-.03(8)

G4. Notification of changes

The permittee shall notify the Technical Secretary for any of the following changes to a permitted air contaminant source which would not be a modification requiring a new construction permit:

- change in air pollution control equipment that does not result in an increase or otherwise meet the definition of a modification
- change in stack height or diameter
- change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

The permittee must submit the Notification provided in Appendix 2 of this permit 30 days before the change is commenced.

TAPCR 1200-03-09-.02(7)

G5. Permit Transference

A. This permit is not transferable from one air contaminant source to another air contaminant source or from one location to another location. The permittee must submit a construction permit application for a new source to the Permitting Program not less than 90 days prior to the estimated starting date of these events. If the new source

will be subject to major New Source Review, the application must be submitted not less than 120 days in advance of the estimated starting date of these events.

TAPCR 1200-03-09-.03(6)(b) and 1200-03-09-.01(1)(b)

B. In the event an ownership change occurs at this facility, the new owner must submit the notification provided in Appendix 3 of this permit. The written notification must be submitted by the new owner to the Permitting Program no later than 30 days after the ownership change occurs. If the change in ownership results in a change in Responsible Person for the facility, notification of the change in Responsible Person must also be submitted, as specified in **Condition G1**.

TAPCR 1200-03-09-.03(6)(a) and (b)

G6. Operating Permit Application Submittal

The permittee shall apply for a significant modification to Title V operating permit within 30 days of initial startup of this new or modified emission source.

TAPCR 1200-03-09-.02(11)(d)1(i)(II)

G7. Temporary Operating Permit

A. This construction permit shall serve as a temporary operating permit from the date of issuance, until the Technical Secretary issues a modified Title V operating permit, provided the permittee submits a significant modification application within the timeframe specified in **Condition G6**.

TAPCR 1200-03-09-.02(1), 1200-03-09-.02(2) and 1200-03-09-.02(3)(b)1

B. If construction of the air contaminant source(s) cannot be completed and/or an operating permit application cannot be filed with the Technical Secretary by the expiration date of this permit, the permittee must submit a permit extension request 30 days prior to permit expiration.

TAPCR 1200-03-09-.02(1) and 1200-03-09-.02(3)

G8. Startup Certification for New or Modified Source(s)

The startup certification provided in Appendix 4 shall be submitted to the Permitting Program once an air contaminant source has started up. Startup of the air contaminant source shall be the date the new or modified air contaminant source began operation for the production of product for sale, use as raw materials, or steam or heat production under the terms of this permit.

TAPCR 1200-03-09-.03(8)

Compliance Method: The startup certification provided in Appendix 4 shall be submitted no later than 30 days after each air contaminant source has begun startup.

G9. Fees

The air contaminant source(s) identified in this permit shall comply with the requirements for payment of applicable annual emission fees to the Tennessee Division of Air Pollution Control.

TAPCR 1200-03-26-.02

G10. General Recordkeeping Requirements

A. All recordkeeping requirements for all data required to be recorded shall follow the following schedules:

For Daily Recordkeeping	For Weekly Recordkeeping	For Monthly Recordkeeping
No later than seven days from the end of the day for which the data is required.	No later than seven days from the end of the week for which the data is required.	No later than 30 days from the end of the month for which the data is required.

B. The information contained in logs, records, and submittals required by this permit shall be kept at the facility's address, unless otherwise noted, and provided to the Technical Secretary or a Division representative upon request. Computer-generated logs are acceptable. Compliance is assured by retaining the logs, records, and submittals specified in this permit for a period of not less than five years at the facility's address.

TAPCR 1200-03-10-.02(2)(a)

G11. Routine Maintenance Requirements

The permittee shall maintain and repair the emission source, associated air pollution control device(s), and compliance assurance monitoring equipment as required to maintain and assure compliance with the specified emission limits.

TAPCR 1200-03-09-.03(8)

Compliance Method: Records of all repair and maintenance activities required above shall be recorded in a suitable permanent form and kept available for inspection by the Division. These records must be retained for a period of not less than five years. The date each maintenance and repair activity began shall be entered in the log no later than seven days following the start of the repair or maintenance activity, and the completion date shall be entered in the log no later than seven days after activity completion.

G12. Visible and Fugitive Emissions

A. Unless otherwise specified, visible emissions from this facility shall not exhibit greater than 20% opacity, except for one six-minute period in any one hour period, and for no more than four six-minute periods in any 24-hour period. A stack is defined as any chimney, flue, conduit, exhaust, vent, or opening of any kind whatsoever, capable of, or used for, the emission of air contaminants.

TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance Method: When required to demonstrate compliance, visible emissions shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

B. The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions shall include, but are not limited to, the following:

(a) Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
(b) Application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can create airborne dusts;

(c) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in TAPCR 1200-03-20. A malfunction is defined as, any sudden and unavoidable failure of process equipment or for a process to operate in an abnormal and unusual manner. Failures that are caused by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

TAPCR 1200-03-08-.01(1) and 1200-03-08-.01(2)

Compliance Method: Fugitive emissions shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.

C. Fugitive emissions from roads and parking areas shall not exhibit greater than 10% opacity.

Compliance Method: When required to demonstrate compliance, fugitive emissions from roads and parking areas shall be determined by utilizing Tennessee Visible Emissions Evaluation (TVEE) Method 1, as adopted by the Tennessee Air Pollution Control Board on April 29, 1982, as amended on September 15, 1982 and August 24, 1984.

TAPCR 1200-03-08-.03

G13. Facility-wide Limitations
Not Applicable

G14. NSPS/NESHAP/MACT/GACT Standards

The following source(s) shall comply with all applicable requirements of the NSPS/NESHAP/MACT/GACT standards as indicated in the table below:

Source	NESHAP/MACT/GACT	NSPS
14	Case by Case MACT	Not Applicable
15	Not Applicable	Not Applicable
16	Not Applicable	Not Applicable
17	Not Applicable	Not Applicable

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance methods are provided in the conditions in **Section IV** of this permit.

G15. VOC and NO_X Emission Statement
Not Applicable

Section IV – Federal and/or State Only Requirements

F1-1. The permittee must prepare, implement, and revise as necessary an OM&M plan that includes the following information in **Condition F1-1(a)**:

(a) Your OM&M plan must include, as a minimum, the information in paragraphs (a)(i) through (xiii) of this section.

i. Each process and APCD to be monitored, the type of monitoring device that will be used, and the operating parameters that will be monitored.
ii. A monitoring schedule that specifies the frequency that the parameter values will be determined and recorded.
iii. The limits for each parameter that represent continuous compliance with the emission limitations in **Condition F1-3**. The limits must be based on values of the monitored parameters recorded during performance tests.
iv. Procedures for the proper operation and routine and long-term maintenance of each APCD, including a maintenance and inspection schedule that is consistent with the manufacturer's recommendations.
v. Procedures for installing the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last APCD).
vi. Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system.
vii. Continuous monitoring system performance evaluation procedures and acceptance criteria (e.g., calibrations).
viii. Procedures for the proper operation and maintenance of monitoring equipment consistent with the requirements in §§ 63.8450 and 63.8(c)(1), (3), (7), and (8).
ix. Continuous monitoring system data quality assurance procedures consistent with the requirements in § 63.8(d)(1) and (2). The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan in § 63.8(d)(2) is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under § 63.8(d)(2).
x. Continuous monitoring system recordkeeping and reporting procedures consistent with the requirements in §§ 63.8485 and 63.8490.
xi. Procedures for responding to operating parameter deviations, including the procedures in paragraphs (a)(xi)(1) through (3) of this section.
    1. Procedures for determining the cause of the operating parameter deviation.
    2. Actions necessary for correcting the deviation and returning the operating parameters to the allowable limits.
    3. Procedures for recording the times that the deviation began and ended and corrective actions were initiated and completed.
xii. Procedures for keeping records to document compliance.
xiii. If you operate the affected source and you plan to take its control device out of service for routine maintenance, as specified in § 63.8420(d), the procedures specified in paragraphs (a)(xiii)(1) and (2) of this section.
    1. Procedures for minimizing HAP emissions from the source during periods of routine maintenance of the control device when the source is operating and the control device is offline.
    2. Procedures for minimizing the duration of any period of routine maintenance on the control device when the source is operating and the control device is offline.

(b) Changes to the operating limits in your OM&M plan require a new performance test. If you are revising an operating limit parameter value, you must meet the requirements in paragraphs (b)(i) and (ii) of this section.

i. Submit a notification of performance test to the Administrator as specified in § 63.7(b).
ii. After completing the performance tests to demonstrate that compliance with the emission limits can be achieved at the revised operating limit parameter value, you must submit the performance test results and the revised operating limits as part of the Notification of Compliance Status required under § 63.9(h).

(c) If you are revising the inspection and maintenance procedures in your OM&M plan, you do not need to conduct a new performance test.

TAPCR 1200-03-09-.03(8)

F1-2. The permittee must follow the following emissions limitations:

(a) HCl, and Cl_2 emissions must not exceed 26 kg/hr (57 lb/hr) HCl equivalent, under the health-based standard, as determined using Equations 2 and 3:

i. Calculate the HCl-equivalent emissions for HF, HCl, and Cl_2 for this source using Equation 2:

$$E_i = E_{HCl} + \left[E_{HF}\left(\frac{RfC_{HCl}}{RfC_{HF}}\right)\right] + \left[E_{Cl_2}\left(\frac{RfC_{HCl}}{RfC_{Cl2}}\right)\right] \quad \text{(Equation 2)}$$

Where:
E_i = HCl-equivalent emissions for kiln i, kilograms (pounds) per hour
E_{HCl} = emissions of HCl, kilograms (pounds) per hour
E_{HF} = emissions of HF, kilograms (pounds) per hour
E_{Cl_2} = emissions of Cl_2, kilograms (pounds) per hour
RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter
RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter
RfC_{Cl_2} = reference concentration for Cl_2, 0.15 micrograms per cubic meter

ii. If you have multiple like sources at your facility, sum the HCl-equivalent values for all of the like sources at the facility using Equation 3:

$$E_{total} = \sum_{i=1}^{n} E_i \quad \text{(Equation 3)}$$

Where:
E_{total} = HCl-equivalent emissions for total of all kilns at facility, kilograms (pounds) per hour
E_i = HCl-equivalent emissions for kiln *i*, kilograms (pounds) per hour
n = number of tunnel kilns at facility

TAPCR 1200-03-09-.03(8)

F1-3. The permittee must use one of the following methods from appendix A to 40 CFR part 63 to determine compliance with the applicable emission limits or standards:

(a) Method 26A for the concentration of HCl and Cl_2. Method 26 may also be used, except at sources where entrained water droplets are present in the emission stream.

(b) Method 320 for HCl in the gas volume, using Fourier transform infrared (FTIR) spectroscopy.

TAPCR 1200-03-09-.03(8)

F1-4. The permittee of an affected source or emission unit using a fabric filter or lime-injected fabric filter must install, calibrate, maintain, and continuously operate a bag leak detection system as required in paragraph F1-3(a) of this permit.

(a) These requirements apply to the permittee of a new or existing affected source or existing emission unit using a bag leak detection system.

i. The permittee must install and operate a bag leak detection system for each exhaust stack of a fabric filter using a lime-injection system.
ii. Each bag leak detection system must be installed, calibrated, operated, and maintained according to the manufacturer's operating instructions.
iii. The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.
iv. The bag leak detection system sensor must provide output of relative or absolute PM loadings.
v. The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.
vi. The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.
vii. For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.
viii. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
ix. The baseline output must be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.
x. Following initial adjustment of the system, the permittee must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.
xi. Maintain free-flowing lime in the feed hopper or silo and to the APCD at all times for continuous injection systems; maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the HF/HCl/Cl_2 performance test for continuous injection systems in which compliance was demonstrated.

TAPCR 1200-03-09-.03(8)

F1-5. The permittee of this source with emissions controlled by a lime-injected fabric filter must:

(a) If a bag leak detection system is used to meet the monitoring requirements in 40 CFR §63.1510, the permittee must:

i. Initiate corrective action within 1 hour of a bag leak detection system alarm.
ii. Complete the corrective action procedure in accordance with the OM&M Plan.
iii. Operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month block reporting period. In calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If the Permittee takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by the owner or operator to initiate corrective action.

(b) Maintain the 3-hour block average inlet temperature for each fabric filter at or below the average temperature established during the performance test, +14 °C (+25 °F). The temperature of gases entering the baghouse during normal operation shall not exceed the value established during the most recent performance test and listed in the current OM&M Plan. All data shall be kept on file for a period of not less than five years and made available to the Technical Secretary or his representative upon request.

(c) For a continuous lime injection system, maintain free-flowing lime in the hopper to the feed device at all times and maintain the lime feed rate at or greater than the level established during the latest performance test.

(d) Maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test.

TAPCR 1200-03-09-.03(8)

F1-6. The permittee must demonstrate continuous compliance with the operating limits in Table 2 to this subpart for visible emissions (VE) from each source that is uncontrolled or equipped with DLA, dry lime injection fabric filter (DIFF), dry lime scrubber/fabric filter (DLS/FF), or other dry control device by monitoring VE at each stack according to the requirements in paragraphs (a) through (f) of this section.

(a) Perform daily VE observations of the smelter stack according to the procedures of Method 22 of 40 CFR part 60, appendix A-7. You must conduct the Method 22 test while the affected source is operating under normal conditions. The duration of each Method 22 test must be at least 15 minutes.

(b) If VE are observed during any daily test conducted using Method 22 of 40 CFR part 60, appendix A-7, you must promptly conduct an opacity test, according to the procedures of Method 9 of 40 CFR part 60, appendix A-4. If opacity greater than 10 percent is observed, you must initiate and complete corrective actions according to your OM&M plan.

(c) You may decrease the frequency of Method 22 testing from daily to weekly for the smelter stack if one of the conditions in paragraph (c)(i) or (ii) of this section is met.

i. No VE are observed in 30 consecutive daily Method 22 tests for the smelter stack; or
ii. No opacity greater than 10 percent is observed during any of the Method 9 tests for the smelter stack.

(d) If VE are observed during any weekly test and opacity greater than 10 percent is observed in the subsequent Method 9 test, you must promptly initiate and complete corrective actions according to your OM&M plan, resume testing of that source's stack following Method 22 of 40 CFR part 60, appendix A-7, on a daily basis, as described in paragraph (a) of this section, and maintain that schedule until one of the conditions in paragraph (c)(i) or (ii) of this section is met, at which time you may again decrease the frequency of Method 22 testing to a weekly basis.

(e) If greater than 10 percent opacity is observed during any test conducted using Method 9 of 40 CFR part 60, appendix A-4, you must report these deviations to the Technical Secretary by following the requirements in §63.8485.

(f) *Alternative to VE testing*. In lieu of meeting the requirements under paragraph (a) of this section, you may conduct a PM test at least once every year following the initial performance test, according to the procedures of Method 5 of 40 CFR part 60, appendix A-3, and the provisions of §63.8445(e) and (f)(1).

TAPCR 1200-03-09-.03(8)

Table 2 – Operating Limits

For each . . .	You must . . .
2. Smelters equipped with a DIFF or DLS/FF	a. If you use a bag leak detection system, initiate corrective action within 1 hour of a bag leak detection system alarm and complete corrective actions in accordance with your OM&M plan; operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; or maintain no VE from the DIFF or DLS/FF stack; and
	b. Maintain free-flowing lime in the feed hopper or silo and to the APCD at all times for continuous injection systems; maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the HF/HCl/Cl_2 performance test for continuous injection systems in which compliance was demonstrated.

Section V - Source Specific Permit Conditions

Source No	Source Description
14	One Smelter with a 2.19 MMBtu/hr Natural Gas afterburner and a Lime Injected Baghouse (Stack 14-2).

S1-1. Input Limitation(s) or Statement(s) of Design

A. Natural gas only shall be used as fuel(s) for this source. Should the permittee need to modify the furnaces to allow the use of a fuel other than natural gas, a construction permit shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.01(1) and the application dated May 25, 2021 from the permittee.

Compliance Method: The permittee shall maintain documentation to demonstrate the type(s) of fuel used by this source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

B. The total raw material input to this source shall not exceed 15,330 tons during any period of twelve consecutive months

TAPCR 1200-03-09-.01(1), 1200-03-10-.02(2), and the application dated May 25, 2021 from the permittee.

Compliance Method: Compliance with the input rate is demonstrated by compiling and maintaining the Monthly Log below. A log of the raw material input to this source, in a form that readily shows compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary or Division representative.

Log #1 Monthly Material Input Log for Smelter

Month / Year	Material Input (ton/month)	Material Input – Yearly (ton/12 months)[1]

[1] This value is calculated from the previous column to the left, adding together the material input from this month and the previous 11 months.

C. The maximum stated design heat input rate for this source is 2.19 MMBtu/hr Natural gas afterburner. Should the permittee need to modify the furnace in a manner that increases the maximum heat input rate, a Title V modification shall be applied for and received in accordance with TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

TAPCR 1200-03-09-.01(1) and 1200-03-10-.02(2) and the application dated May 25, 2021 from the permittee.

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input capacity for the eight burners. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

S1-2. Production Limitation(s)
Not Applicable

S1-3. Operating Hour Limitation(s)
Not Applicable

S1-4. Emission Limitation(s)

A. Particulate matter (PM) emitted from this source shall not exceed 0.01 grains per dry standard cubic foot (0.92 pounds per hour on a daily average basis).

TAPCR 1200-03-07-.01(5), 1200-03-10-.04(2), and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by complying with the operating parameters identified in **Conditions F1-4, F1-5,** and **F1-6**. Compliance will be demonstrated by maintaining the bag leak detection requirements identified in **Conditions F1-4 and F1-5**.

B. Sulfur Dioxide (SO_2) emitted from this source shall not exceed 21.88 pounds per hour on a daily average basis.

TAPCR 1200-03-14-.01(3) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by complying with the operating parameters identified in **Condition F1-3**. Compliance will be demonstrated by the recordkeeping requirements identified in **Condition S1-4G**.

C. Carbon Monoxide (CO) emitted from this source shall not exceed 14.59 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S1-1A** and the emission factor of 1.8 lb/ton from AP-42, Chapter 12.5.1-5.

D. Volatile organic compounds (VOC) emitted from this source shall not exceed 0.05 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S1-1A** and the emission factor of 5.5 $Lb/10^6$ Ft^3 from AP-42, Chapter 1.4-1 & -2.

E. Nitrogen Oxides (NO_X) emitted from this source shall not exceed 1.11 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S1-1A** and the emission factor of 100 Lb/10^6 Ft^3 from AP-42, Chapter 1.4-1 & -2.

F. Hydrogen Chloride (HCl) emitted from this source shall not exceed 11.24 pounds per hour based on a daily average and 49.22 tons per year.

TAPCR 1200-03-09-.03(8) and the agreement letter dated May 25, 2021.

Compliance Method: Compliance with this emission limitation will be demonstrated by complying with the recordkeeping parameters in **Condition S1-4G**.

G. Compliance with the SO_2 and HCl emissions shall be determined by the monthly logs (Example Log #2) providing the emissions of SO_2 and HCl.

TAPCR 1200-03-10-.02(2) and the application dated May 25, 2021.

Compliance Method: The permittee shall demonstrate compliance with the sulfur dioxide (SO_2) emission limit in **Condition S1-4B** and the hydrogen chloride (HCl) emission rates in **Condition S1-4F** by the records required by this condition. The permittee shall calculate the monthly average SO_2 and HCl Emissions. The records must be maintained at the source location and kept available for inspection by the Technical Secretary or representative. These records must be retained for a period of not less than five years.

Log #2 Monthly log of SO_2 and HCl emissions for Source 14

Month / Year	Operating hours (hrs/month)	Production rate; tons/hour, on a monthly average	SO_2 Emission Factor lb/ton input[1]	Total SO_2 Emissions (lb/month)	HCl Emission Factor: lb/ton (source test value)[2]	Total HCl Emissions (lb/month)

1 – SO_2 Emission Factors based on a combination of the Natural Gas emission factor and the SO_2 emission factor (lb/ton) from the performance testing as outlined in **Condition S1-6**.
2 – HCl emissions based on performance testing as outlined in **Conditions F1-3** and **S1-6**.

S1-5. Source-Specific Visible Emissions Limitation(s)

A. The exhaust gases from this source shall be discharged unobstructed vertically upwards to the ambient air from the stack with an exit diameter (equivalent) of 2.28 feet not less than 125 feet above ground level.

TAPCR 1200-03-09-.01(1) and the application dated May 25, 2021.

B. Visible emissions from this source shall not exhibit greater than ten percent opacity, except for one six-minute period in any one-hour period, and for no more than four six-minute periods in any twenty-four hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (6-minute average).

TAPCR 1200-03-05-.01(3), 1200-03-05-.01(4), 1200-03-05-.03(6) and the application dated May 25, 2021.

S1-6. Within 60 days after achieving the maximum production rate at which the affected facility operates this source, but not later than 180 days after initial startup of this source, the owner or operator of this facility shall conduct

performance test(s) for the pollutants indicated below and furnish the Technical Secretary a written report of the results of such performance test(s) within 60 days of completing the test. The performance test shall be conducted, and data reduced in accordance with methods and procedures specified in **Conditions F1-3**.

The performance test shall also include monitoring the following parameters; lime injection rate.

Pollutant or Parameter	Testing Methodology
Sulfur Dioxide (SO_2)	EPA Method 26A as published in the current 40 CFR 60, Appendix A
Hydrogen Chloride (HCl)	EPA Method 26A as published in the current 40 CFR 60, Appendix A or EPA Method 320

TAPCR 1200-03-09-.02(11)(a), 1200-03-10-.02(1)(a), and the application dated May 25, 2021.

Compliance Method: Compliance is assured by the permittee conducting the performance testing, notifying the Technical Secretary in writing of their intention to conduct the performance test, developing and submitting a site-specific test plan, and submitting the results of the performance test all within the established time frames.

Source No	Source Description
15	One calciner with a 3.81 MMBtu/hr Natural Gas Burner, ball mills, and blenders with baghouse (Stack 14-1)

S2-1. Input Limitation(s) or Statement(s) of Design

A. Natural gas only shall be used as fuel(s) for this source. Should the permittee need to modify the furnaces to allow the use of a fuel other than natural gas and propane, a construction permit shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 prior to making the change.

TAPCR 1200-03-09-.01(1) and the application dated May 25, 2021 from the permittee.

Compliance Method: The permittee shall maintain documentation to demonstrate the type(s) of fuel used by this source. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

B. The total raw material input to this source shall not exceed 15,330 tons during any period of twelve consecutive months

TAPCR 1200-03-07-.07(2), 1200-03-10-.02(2), and the application dated May 25, 2021 from the permittee.

Compliance Method: Compliance with the input rate is demonstrated by compiling and maintaining the Monthly Log below. A log of the raw material input to this source, in a form that readily shows compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary or Division representative.

Log #3 Monthly Material Input Log for Calciner

Month / Year	Material Input (ton/month)	Material Input – Yearly (ton/12 months)[1]

[1] This value is calculated from the previous column to the left, adding together the material input from this month and the previous 11 months.

C. The maximum stated design heat input rate for this source is 3.81 MMBtu/hr natural gas burner. Should the permittee need to modify the furnace in a manner that increases the maximum heat input rate, a Title V modification shall be applied for and received in accordance with TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

TAPCR 1200-03-09-.03(8) and the application dated May 25, 2021 from the permittee.

Compliance Method: The permittee shall maintain documentation to demonstrate the heat input capacity for the eight burners. Documentation shall include, but is not limited to, manufacturer's specifications, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

S2-2. Production Limitation(s)
Not Applicable

S2-3. Operating Hour Limitation(s)
Not Applicable

S2-4. Emission Limitation(s)

A. Particulate matter (PM) emitted from this source shall not exceed 0.01 grains per dry standard cubic foot (4.87 pounds per hour on a daily average basis).

TAPCR 1200-03-07-.01(5) and the application dated May 25, 2021.

Compliance Method: Compliance will be demonstrated by the recordkeeping requirements identified in this condition and **Condition S2-4G**.

The permittee shall install a baghouse pressure gauge to measure the pressure differential (inches of water column) across the baghouse(s). Within 30 days of startup of this source, the Permittee shall compile 30 consecutive operating days of pressure differential readings for the baghouse(s). The designated person(s) shall note any relevant baghouse conditions, problems, or concerns when recording the values. This data shall be submitted to the Division (see address below) along with a proposed minimum pressure differential, no later than 15 days following the 30 days of readings.

By email to: Air.Pollution.Control@tn.gov
Or by mail to:
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, Tennessee 37243

After incorporation of the minimum pressure differential into the permit, compliance with the PM emission limit shall be assured by maintaining the required minimum pressure differential for the baghouse(s). The pressure differential shall be recorded once daily when the source is in operation. Days when the source is not operating shall be noted.

For lower pressure differential reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure differential reading(s) which follow replacement of bags provided the Permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

B. Sulfur Dioxide (SO_2) emitted from this source shall not exceed 0.002 pounds per hour on a daily average basis.

TAPCR 1200-03-14-.01(3) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S2-1A** and the emission factor of 0.6 Lb/10^6 Ft^3 from AP-42, Chapter 1.4-1 & -2.

C. Carbon Monoxide (CO) emitted from this source shall not exceed 1.37 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S2-1A** and the emission factor of 84 Lb/10^6 Ft^3 from AP-42, Chapter 12.5.1-5.

D. Volatile organic compounds (VOC) emitted from this source shall not exceed 18.31 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S2-1A** and the emission factor of 4.16 lb/ton from April 8, 2020 lab test report. Compliance will be demonstrated by the recordkeeping requirements identified in **Condition S2-4G**.

E. Nitrogen Oxides (NO_X) emitted from this source shall not exceed 1.64 tons per year.

TAPCR 1200-03-07-.07(2) and the application dated May 25, 2021.

Compliance Method: Compliance with this emission limitation is assured by compliance with **Condition S2-1A** and the emission factor of 100 Lb/10^6 Ft^3 from AP-42, Chapter 1.4-1 & -2.

F. Total combined Hazardous Air Pollutants (HAP) emitted from this source shall not exceed 0.55 tons per year.

TAPCR 1200-03-09-.03(8) and the agreement letter dated May 25, 2021.

Compliance Method: Compliance with this emission limitation will be demonstrated by the recordkeeping requirements identified in **Condition S2-4G**.

G. Compliance with the PM, VOC, and HAP emissions shall be determined by the monthly logs (Example Log #4) providing the emissions of PM, VOC, and HAP.

TAPCR 1200-03-10-.02(2) and the application dated May 25, 2021.

Compliance Method: The permittee shall demonstrate compliance with the particulate matter (PM) emission limit in **Condition S2-4A**, the volatile organic compounds (VOC) emission limit in **Condition S2-4D,** and the Hazardous Air Pollutants (HAP) emission rates in **Condition S2-4F** by the records required by this condition. The permittee shall calculate the monthly average PM, VOC, and HAP Emissions. The records must be maintained at the source location and kept available for inspection by the Technical Secretary or representative. These records must be retained for a period of not less than five years.

Log #4 Monthly log of PM, VOC, and Total HAP emissions for Source 15

Month / Year	Operating hours (hrs/month)	Production rate; tons/hour, on a monthly average	PM Emission Factor lb/ton input[1]	Total PM Emissions (lb/month)	VOC Emission Factor lb/ton input[2]	Total VOC Emissions (lb/month)	HAP Emission Factor: lb/ton (source test value)[3]	Total HAP Emissions (lb/month)

1 – PM Emission Factors based on the Natural Gas emission factor of 7.6 Lb/10^6 Ft^3 from AP-42, Chapter 1.4-1 & -2.
2 – VOC Emission Factors based on the VOC emission factor (lb/ton) from the lab test dated April 8, 2020.
3 – HAP emissions based on performance testing as outlined in **Conditions F1-3** and **S1-6**.

S2-5. Source-Specific Visible Emissions Limitation(s)

A. The exhaust gases from this source shall be discharged unobstructed vertically upwards to the ambient air from the stack not less than 75 feet above ground level.

TAPCR 1200-03-05-.01(3), 1200-03-05-.03(6), and the application dated May 25, 2021.

B. Visible emissions from this source shall not exhibit greater than ten percent opacity, except for one six-minute period in any one-hour period, and for no more than four six-minute periods in any twenty-four hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (6-minute average).

TAPCR 1200-03-05-.01(3), 1200-03-05-.01(4), 1200-03-05-.03(6) and the application dated May 25, 2021.

Source No	Source Description
16	Hammer mill with baghouse (Stack 14-3)

S3-1. Input Limitation(s) or Statement(s) of Design

The total raw material input to this source shall not exceed 15,330 tons during any period of twelve consecutive months

TAPCR 1200-03-09-.01(1) and the application dated May 25, 2021 from the permittee.

Compliance Method: Compliance with the input rate is demonstrated by compiling and maintaining the Monthly Log below. A log of the raw material input to this source, in a form that readily shows compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary or Division representative.

Log #5 Monthly Material Input Log for Hammer Mill

Month / Year	Material Input (ton/month)	Material Input – Yearly (ton/12 months)[1]

[1] This value is calculated from the previous column to the left, adding together the material input from this month and the previous 11 months.

S3-2. Production Limitation(s)
Not Applicable

S3-3. Operating Hour Limitation(s)
Not Applicable

S3-4. Emission Limitation(s)

Particulate matter (PM) emitted from this source shall not exceed 0.01 grains per dry standard cubic foot (0.78 pounds per hour on a daily average basis).

TAPCR 1200-03-07-.01(5) and the agreement letter dated May 25, 2021.

Compliance Method: The permittee shall install a baghouse pressure gauge to measure the pressure differential (inches of water column) across the baghouse(s). Within 30 days of startup of this source, the Permittee shall compile 30 consecutive operating days of pressure differential readings for the baghouse(s). The designated person(s) shall note any relevant baghouse conditions, problems, or concerns when recording the values. This data shall be submitted to the Division (see address below) along with a proposed minimum pressure differential, no later than 15 days following the 30 days of readings.

By email to: Air.Pollution.Control@tn.gov
Or by mail to:
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, Tennessee 37243

After incorporation of the minimum pressure differential into the permit, compliance with the PM emission limit shall be assured by maintaining the required minimum pressure differential for the baghouse(s). The pressure differential shall be recorded once daily when the source is in operation. Days when the source is not operating shall be noted.

For lower pressure differential reading(s) resulting from replacement of bags, the permittee shall record the deviation(s) as such in their daily records. Due allowance will be made for lower pressure differential reading(s) which follow replacement of bags provided the Permittee establishes to the satisfaction of the Technical Secretary that these lower readings resulted from the replacement of bags.

S3-5. Source-Specific Visible Emissions Limitation(s)

A. The exhaust gases from the Hammer mill shall be discharged unobstructed vertically upwards to the ambient air from the stack (14-3) not less than 25 feet above ground level.

   TAPCR 1200-03-05-.01(3), 1200-03-05-.03(6), and the application dated May 25, 2021.

B. Visible emissions from the Hammer mill (Stack 14-3) shall not exhibit greater than ten percent opacity, except for one six-minute period in any one-hour period, and for no more than four six-minute periods in any twenty-four hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (6-minute average).

   TAPCR 1200-03-05-.01(3), 1200-03-05-.01(4), 1200-03-05-.03(6) and the application dated May 25, 2021.

Source No	Source Description
17	Two Silos (Stack 14-Silos) and Twelve Day Bins (Stack 14-Day Bins), each with an exhaust point with a bin vent.

S4-1. Input Limitation(s) or Statement(s) of Design

The total raw material input to this source shall not exceed 15,330 tons during any period of twelve consecutive months.

TAPCR 1200-03-09-.01(1) and the application dated May 25, 2021 from the permittee.

Compliance Method: Compliance with the input rate is demonstrated by compiling and maintaining the Monthly Log below. A log of the raw material input to this source, in a form that readily shows compliance with this condition, must be maintained at the source location and kept available for inspection by the Technical Secretary or Division representative.

Log #6 Monthly Material Input Log for Silos and Day Bins

Month / Year	Material Input (ton/month)	Material Input – Yearly (ton/12 months)[1]

[1] This value is calculated from the previous column to the left, adding together the material input from this month and the previous 11 months.

S4-2. Production Limitation(s)
Not Applicable

S4-3. Operating Hour Limitation(s)
Not Applicable

S4-4. Emission Limitation(s)

Particulate matter (PM) emitted from this source shall not exceed 0.02 grains per dry standard cubic foot (2.39 pounds per hour on a daily average basis).

TAPCR 1200-03-07-.01(5), and the application dated May 25, 2021.

Compliance Method: The permittee shall install, operate, and maintain bin vents for the silos and bins. The source shall not operate unless the bin vents are in operation. The permittee shall inspect the vents on a daily basis prior to starting the source. The permittee shall initiate, as well as record, corrective action within 24 hours and complete, as well as record, corrective action as expediently as practical if the permittee finds that a problem has developed during an inspection of the vents. Inspection records shall be kept and shall also include the initials of the person performing the inspection(s) and corrective action(s), along with the date, time, and any relevant comments. Days that the source is not in operation shall be noted. These records shall be retained in accordance with **Condition G10**. TAPCR 1200-03-10

S4-5. Source-Specific Visible Emissions Limitation(s)

The exhaust gases from this source shall be discharged unobstructed vertically upwards to the ambient air from the stacks; with an exhaust point not less than 30 feet above ground level.

TAPCR 1200-03-05-.01(4), 1200-03-05-.03(6), and the application dated May 25, 2021.

(end of conditions)

The permit application gives the location of this source as 36.095278 Latitude and -84.548889 Longitude.

Appendix 1: Notification of Change in Responsible Person

Facility (Permittee) Heraeus Precious Metals North America, LLC

Facility ID 65-0049

Former Responsible Person _____ _____
Name Title

New Responsible Person _____ _____
Name Title

_____
Email

Date New Responsible Person was assigned this duty: _____

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 2: Notification of Changes

Facility (Permittee) Heraeus Precious Metals North America, LLC

Facility ID 65-0049

Source No.

	Control Equipment	Stack Height (Feet)	Stack Diameter (Feet)	Exit Velocity (Feet/Second)	Exit Temperature (°F)
Current					
Proposed					
Current					
Proposed					
Current					
Proposed					

Comments:

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 3: Notification of Ownership Change

Facility (Permittee) Heraeus Precious Metals North America, LLC (Previous Owner)

Facility ID 65-0049

Facility (Permittee) _____ (New Owner)

Email Address _____

Secretary of State Control Number _____ [as registered with the TN Secretary of State]

Date of Ownership Change _____

Comments:

As the responsible person for the new owner or operator of the above mentioned facility (permittee):

- I agree to not make any changes to the stationary source(s) that meet the definition of modification as defined in Division 1200-03 or Division 0400-30[1], and
- I agree to comply with the conditions contained in **the permits listed below**, Division 1200-03 and Division 0400-30 of the Tennessee Air Pollution Control Regulations, the Tennessee Air Quality Act, and any documented agreements made by the previous owner to the Technical Secretary.

List all active permits issued to the facility for which the owner wishes to assume ownership:

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

[1] Appropriate application forms must be submitted prior to modification of the stationary source(s).

Appendix 4: Startup Certification

Facility (Permittee): Heraeus Precious Metals North America, LLC

Facility ID 65-0049

Startup Certification for Source No. _____

The permittee shall certify the startup date for each new or modified air contaminant source regulated by construction permit 979077 by submitting this document

Date of startup: _____ /_____ / _____
Month Day Year

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Startup Certification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 5: Fees

Not Applicable

Appendix 6: Emission Statement for VOC and NO_X

Facility (Permittee) Heraeus Precious Metals North America, LLC

Facility ID 65-0049

Calendar Year _____

TOTAL CALENDAR YEAR ACTUAL EMISSIONS:

a) If either amount is 25 tons or greater, enter the amounts of both pollutants; or
b) If the amount of each pollutant is less than 25 tons, please enter 'L. T. 25'.

VOC _____ Tons

NOx _____ Tons

As the Responsible Person of the above mentioned facility (permittee), I certify that the above information concerning VOC and NO_X emissions to be accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

Appendix 7: Agreement Letters

Heraeus

Heraeus Precious Metals North America LLC
1975 Knoxville Highway
Wartburg, TN 37887
Phone (423) 346-1041
Fax (423) 346-8655

May 25, 2021

Doug Wright
Division of Air Pollution Control
Tennessee Department of Environment & Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Subject: Heraeus Precious Metals North America, LLC
ESRN 65-0049
Permit No. 570857
Construction Permit Application – Calciner, Smelter, and associated equipment

Dear Mr. Wright:

With this letter, Heraeus Precious Metals North America, LLC (Heraeus) submits a construction permit application to install new processing equipment at their facility located at 1975 Knoxville Highway, Wartburg, Tennessee. The equipment will consist of a calciner, ball mills, and blender with baghouse control, a smelter with lime injected baghouse control, a hammer mill with baghouse control, and silos and day bins controlled with bin vents. The appropriate forms, a process flow diagram, and calculations for the equipment described above are attached to this letter.

The new equipment will process material for precious metal recovery. The calciner will be used to dry filter cake before it is introduced into the smelter. A small amount of volatile organic compounds (VOCs) may be released in the calciner, so no VOCs are expected in the smelter because they will already be removed. The smelter will process material that will generate sulfur dioxide (SO2) and hydrogen chloride (HCl) emissions, so a lime injection system prior to the baghouse will be used to reduce SO2 and HCl emissions. The potential HCl emissions make Heraeus a major source of hazardous air pollutants (HAPs). However, there are no New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) that apply and Heraeus already operates under a Title V permit, so becoming a major source of HAPs will not subject the facility to new requirements due to a change from area source to major source of HAPs.

Dispersion models were performed to determine the stack height for the smelter to meet the 70.0 ug/m^3 HCl, 24-hour average, as indicated in TAPCR 1200-3-3-.03(1)(c). Summary information from the model is included as an attachment to this letter.

Condition E3-6 of Permit No. 570857 states Heraeus is subject to a single HAP limit of 9.9 tons per year (tpy) and a total HAP limit of 24.9 tpy. With this application, Heraeus requests the limit be removed from the permit. Furthermore, Heraeus agrees to the following emission limits and opacities.

Heraeus

Equipment	Stack ID	Pollutant	Limit	Reference
Calciner, ball mills, blender with baghouse control	14-1	PM	0.01 gr/dscf 10% opacity	TAPCR 1200-03-07-.01(5) TAPCR 1200-03-05-.01(4)
		SO2	0.002 lb/hr	TAPCR 1200-03-14-.01(3)
Smelter	14-2	PM	0.01 gr/dscf 10% opacity	TAPCR 1200-03-07-.01(5) TAPCR 1200-03-05-.01(4)
		SO2	21.88 lb/hr	TAPCR 1200-03-14-.01(3)
Hammer Mill	14-3	PM	0.01 gr/dscf 10% opacity	TAPCR 1200-03-07-.01(5) TAPCR 1200-03-05-.01(4)
Silos & Day Bins	14-Silos, 14-Day Bins	PM	0.02 gr/dscf	TAPCR 1200-03-07-.01(5)

I hereby certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

If you have questions or comments, please contact Jimmy Taylor, Environmental Manager at (423) 346-1053, or my consultant, Shea Cofer at (615) 418-1414.

Sincerely,

Norbert Ritschel
Senior Vice President and Plant Manager