



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
CUYAHOGA COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 13-03996

DATE: 8/19/2003

Powdermet
Andrew Sherman
9960 Glenoaks Boulevard, Unit A
Sun Valley, CA 91344

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA

CLAA



**Permit To Install
Terms and Conditions**

**Issue Date: 8/19/2003
Effective Date: 8/19/2003**

FINAL PERMIT TO INSTALL 13-03996

Application Number: 13-03996
APS Premise Number: 1318208354
Permit Fee: **\$800**
Name of Facility: Powdermet
Person to Contact: Andrew Sherman
Address: 9960 Glenoaks Boulevard, Unit A
Sun Valley, CA 91344

Location of proposed air contaminant source(s) [emissions unit(s)]:
**24112 Tungsten Road
Euclid, Ohio**

Description of proposed emissions unit(s):
Metal powder manufacturing line of nickel, cobalt and copper.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized

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representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio

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Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

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14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	0.46
CO	10.5
NOx	5.17
OC	0.13

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>P001 - Copper powder production unit consisting of 1 reactor unit, 1 distillation column, 1 storage tank, 1 vacuum pump, 1 vapor recovery unit, and 1 carbon adsorber controlled by a scrubber and thermal oxidizer. The emissions unit and the associated equipment complete a totally enclosed system, and the release point of any uncontrolled emissions shall be assumed after the carbon adsorber since it is an integral component of the system.</p>	<p>OAC rule 3745-31-05(A)(3)</p> <p>OAC rule 3745-17-07(A)(1)</p> <p>OAC rule 3745-17-11</p>	<p>Particulate emissions (hydrofluoric acid) shall not exceed 0.010 lb/hr.</p> <p>Particulate emissions (hydrofluoric acid) shall not exceed 0.044 tpy.</p> <p>Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.</p> <p>The visible particulate emission limitation specified by this rule is less stringent than the visible particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p> <p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>

2. Additional Terms and Conditions

- 2.a The permittee shall install and operate a scrubber/ thermal oxidizer control system with a control efficiency sufficient to meet the allowable emissions limitations applicable to this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The pH of the scrubber liquor shall be maintained at or above 3.0.
3. The pressure drop across the scrubber shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
4. The scrubber water flow rate shall be continuously maintained at a value of not less than 8 gallons per minute at all times while the emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
2. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water, on a once per shift basis.
 - b. The scrubber water flow rate, in gallons per minute, on a once per shift basis.

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Emissions Unit ID: **P001**

- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The water supply pressure.
 - b. The scrubber water flow rate.
3. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in section A.1. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
Particulate emissions (hydrofluoric acid) shall not exceed 0.010 lb/hr.

Applicable Compliance Method:
Compliance with the above hourly PE limitation shall be determined by Methods 1 through 5 of 40 CFR Part 60, Appendix A, as specified in Section E.2.
 - b. Emission Limitation:
Particulate emissions (hydrofluoric acid) shall not exceed 0.044 tpy.

Applicable Compliance Method:
The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.
 - c. Emission Limitation:
Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

Compliance shall be determined through visible emission observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures in OAC rule 3745-17-03 (B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. The emissions testing shall be conducted within 3 months after the installation and startup of the two (2) copper reactor units and the wet scrubber and thermal oxidizer control system.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission limitations for particulate emissions (pounds per hour).
 - c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate for particulate hydrofluoric acid emissions: U.S. EPA Methods 1 through 4 and 26 of 40 CFR, Part 60, Appendix A for hydrogen halide and halogen emissions. Alternative U.S. EPA approved test methods may be used with the prior approval from the Cleveland Division of Air Quality.
 - d. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Cleveland Division of Air Quality.
 - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland Division of Air Quality. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Cleveland Division of Air Quality's refusal to accept the results of the emission test(s).
 - f. Personnel from the Cleveland Division of Air Quality shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Cleveland Division of Air

Powdermet**PTI Application: 13-03006****Issued****Facility ID: 1318208354**Emissions Unit ID: **P001**

Quality within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Cleveland Division of Air Quality.

F. Miscellaneous Requirements

1. The installation of the emissions units contained within this permit shall be installed in two phases, small scale operation and large scale operation. The small scale operation shall consist of only necessary equipment to operate the copper, cobalt, and nickel metal powder plating lines. Emissions generated by the small scale operation shall be controlled by an enclosed flare with pilot light. The large scale production shall include the installation of additional equipment to increase capacity of the metal plating lines with the addition of an aluminum metal powder plating line. The emissions generated by the large scale operation shall be controlled by a wet scrubber and thermal oxidizer control system.
2. Emissions testing of the emissions units contained within this permit shall not be required until installation of the large scale operation.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
<p>P002 - Cobalt powder production unit consisting of 6 generators, 3 high pressure gas storage tanks, 4 reactor units, 1 post-plateout heater, 1 vacuum pump, and 1 catalytic converter controlled by a scrubber and thermal oxidizer. The emissions unit and the associated equipment complete a totally enclosed system, and the release point of any uncontrolled emissions shall be assumed after the post-plateout heater and vacuum pump.</p>	<p>OAC rule 3745-31-05(A)(3)</p>
	<p>OAC rule 3745-17-07(A)(1)</p>
	<p>OAC rule 3745-17-11</p>

OAC rule 3745-23-06(B)

Applicable Emissions
Limitations/Control Measures

0.023 lbs/hr of particulate emissions
(PE)

0.102 tpy of particulate emissions
(PE)

1.18 lb/hr of nitrogen oxides (NO_x)

5.17 tpy of nitrogen oxides (NO_x)

0.75 lb/hr of carbon monoxide (CO)

3.29 tpy of carbon monoxide (CO)

Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.

The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

See A.2.a below.

2. Additional Terms and Conditions

- 2.a** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit.
- 2.b** The permittee shall install and operate a scrubber/ thermal oxidizer control system with a control efficiency sufficient to meet the allowable emissions limitations applicable to this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The pH of the scrubber liquor shall be maintained at or above 3.0.
3. The pressure drop across the scrubber shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
4. The scrubber water flow rate shall be continuously maintained at a value of not less than 8 gallons per minute at all times while the emissions unit is in operation.
5. The average combustion temperature within the catalytic converter, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water, on a once per shift basis.
 - b. The scrubber water flow rate, in gallons per minute, on a once per shift basis.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.
5. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the catalytic converter when the emissions unit is in operation. Unit shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
6. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the catalytic converter, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The water supply pressure.
 - b. The scrubber water flow rate.
3. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
4. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the catalytic converter does not comply with the temperature limitation specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in section A.1. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
0.023 lbs/hr of particulate emissions (PE)

Applicable Compliance Method:
Compliance with the above hourly PE limitation shall be determined by Methods 1 through 5 of 40 CFR Part 60, Appendix A, as specified in Section E.2.
 - b. Emission Limitation:
0.102 tpy of particulate emissions (PE)

Applicable Compliance Method:
The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

- c. Emission Limitation:
1.18 lb/hr of nitrogen oxides (NO_x)
- Applicable Compliance Method:
Compliance with the above hourly NO_x limitation shall be determined by Method 7 of 40 CFR Part 60, Appendix A, as specified in Section E.2.
- d. Emission Limitation:
5.17 tpy of nitrogen oxides (NO_x)
- Applicable Compliance Method:
The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.
- e. Emission Limitation:
0.75 lb/hr of carbon monoxide (CO)
- Applicable Compliance Method:
Compliance with the above hourly CO limitation shall be determined by Method 10 of 40 CFR Part 60, Appendix A, as specified in Section E.2.
- f. Emission Limitation:
3.29 tpy of carbon monoxide (CO)
- Applicable Compliance Method:
The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.
- g. Emission Limitation:
Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.
- Applicable Compliance Method:
Compliance shall be determined through visible emission observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures in OAC rule 3745-17-03 (B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. The emissions testing shall be conducted within 3 months after the installation and startup of the wet scrubber and thermal oxidizer control system.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission limitations for particulate emissions (pounds per hour), carbon monoxide (pounds per hour), and nitrogen oxides (pounds per hour).
 - c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for particulate, U.S. EPA Methods 1 through 4 and 5 of 40 CFR, Part 60, Appendix A; for nitrogen oxides, and Method 7 of 40 CFR Part 60, Appendix A; and for carbon monoxide, Method 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Cleveland Division of Air Quality.
 - d. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Cleveland Division of Air Quality.
 - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland Division of Air Quality. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Cleveland Division of Air Quality's refusal to accept the results of the emission test(s).
 - f. Personnel from the Cleveland Division of Air Quality shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Cleveland Division of Air Quality within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Cleveland Division of Air Quality.

Powdermet**PTI Application: 13-03006****Issued****Facility ID: 1318208354**Emissions Unit ID: **P002****F. Miscellaneous Requirements**

1. The installation of the emissions units contained within this permit shall be installed in two phases, small scale operation and large scale operation. The small scale operation shall consist of only necessary equipment to operate the copper, cobalt, and nickel metal powder plating lines. Emissions generated by the small scale operation shall be controlled by an enclosed flare with pilot light. The large scale production shall include the installation of additional equipment to increase capacity of the metal plating lines with the addition of an aluminum metal powder plating line. The emissions generated by the large scale operation shall be controlled by a wet scrubber and thermal oxidizer control system.
2. Emissions testing of the emissions units contained within this permit shall not be required until installation of the large scale operation.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P003 - Nickel powder production unit consisting of 6 generators, 3 high pressure gas storage tanks, 4 reactor units, 1 post-plateout heater, and 1 vacuum pump controlled by a scrubber and thermal oxidizer. The emissions unit and the associated equipment complete a totally enclosed system, and the release point of any uncontrolled emissions shall be assumed after the post-plateout heater and vacuum pump.	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-07(A)(1) OAC rule 3745-17-11	0.016 lb/hr of particulate emissions (PE) 0.072 tpy of particulate emissions (PE) 1.65 lbs/hr of carbon monoxide (CO) 7.23 tpy of carbon monoxide (CO) Visible particulate emissions shall not exceed 5% opacity, as a six-minute average. The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3). The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

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- 2.a** The permittee shall install and operate a scrubber/ thermal oxidizer control system with a control efficiency sufficient to meet the allowable emissions limitations applicable to this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The pH of the scrubber liquor shall be maintained at or above 3.0.
3. The pressure drop across the scrubber shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
4. The scrubber water flow rate shall be continuously maintained at a value of not less than 8 gallons per minute at all times while the emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
2. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
3. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water, on a once per shift basis.
 - b. The scrubber water flow rate, in gallons per minute, on a once per shift basis.

- c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The water supply pressure.
 - b. The scrubber water flow rate.
3. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in section A.1. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
0.016 lb/hr of particulate emissions (PE)

Applicable Compliance Method:
Compliance with the above hourly PE limitation shall be determined by Methods 1 through 5 of 40 CFR Part 60, Appendix A, as specified in Section E.2.
 - b. Emission Limitation:
0.072 tpy of particulate emissions (PE)

Applicable Compliance Method:

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

- c. Emission Limitation:
1.65 lbs/hr of carbon monoxide (CO)

Applicable Compliance Method:

Compliance with the above hourly CO limitation shall be determined by Method 10 of 40 CFR Part 60, Appendix A, as specified in Section E.2.

- d. Emission Limitation:
7.23 tpy of carbon monoxide (CO)

Applicable Compliance Method:

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

- e. Emission Limitation:
Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

Compliance shall be determined through visible emission observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures in OAC rule 3745-17-03 (B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emissions testing shall be conducted within 3 months after the installation and startup of the wet scrubber and thermal oxidizer control system.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission limitations for particulate (pounds per hour) and carbon monoxide (pounds per hour).

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- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for particulate, U.S. EPA Methods 1 through 4 and 5 of 40 CFR, Part 60, Appendix A and for carbon monoxide, Method 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Cleveland Division of Air Quality.
- d. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Cleveland Division of Air Quality.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland Division of Air Quality. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Cleveland Division of Air Quality's refusal to accept the results of the emission test(s).
- f. Personnel from the Cleveland Division of Air Quality shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Cleveland Division of Air Quality within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Cleveland Division of Air Quality.

F. Miscellaneous Requirements

1. The installation of the emissions units contained within this permit shall be installed in two phases, small scale operation and large scale operation. The small scale operation shall consist of only necessary equipment to operate the copper, cobalt, and nickel metal powder plating lines. Emissions generated by the small scale operation shall be controlled by an enclosed flare with pilot light. The large scale production shall include the installation of additional equipment to increase capacity of the metal plating lines with the addition of an aluminum metal powder plating line. The emissions generated by the large scale operation shall be controlled by a wet scrubber and thermal oxidizer control system.
2. Emissions testing of the emissions units contained within this permit shall not be required until

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installation of the large scale operation.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>P004 - Aluminum powder production unit consisting of 1 storage tank, 2 reactor units, and 1 vacuum pump controlled by a scrubber and thermal oxidizer. The emissions unit and the associated equipment complete a totally enclosed system, and the release point of any uncontrolled emissions shall be assumed after the vacuum pump.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>0.054 lb/hr of particulate emissions (PE) 0.237 tpy of particulate emissions (PE) 0.03 lb/hr of organic compound (OC) emissions 0.13 tpy of organic compound (OC) emissions Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.</p>
	<p>OAC rule 3745-17-07(A)(1)</p>	<p>The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
	<p>OAC rule 3745-17-11</p>	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
	<p>OAC rule 3745-21-07(G)(2)</p>	

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The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a** The permittee shall install and operate a scrubber/ thermal oxidizer control system with a control efficiency sufficient to meet the allowable emissions limitations applicable to this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The pH of the scrubber liquor shall be maintained at or above 3.0.
3. The pressure drop across the scrubber shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.
4. The scrubber water flow rate shall be continuously maintained at a value of not less than 8 gallons per minute at all times while the emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
2. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

3. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water, on a once per shift basis.
 - b. The scrubber water flow rate, in gallons per minute, on a once per shift basis.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The water supply pressure.
 - b. The scrubber water flow rate.
3. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in section A.1. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
0.054 lb/hr of particulate emissions (PE)

Applicable Compliance Method:
Compliance with the above hourly PE limitation shall be determined by Methods 1 through 5 of 40 CFR Part 60, Appendix A, as specified in Section E.2.

- b. Emission Limitation:
0.237 tpy of particulate emissions (PE)

Applicable Compliance Method:

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

- c. Emission Limitation:
0.03 lb/hr of organic compound (OC) emissions

Applicable Compliance Method:

Compliance with the above hourly OC limitation shall be determined by Methods 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A as specified in Section E.2.

- d. Emission Limitation:
0.13 tpy of organic compound (OC) emissions

Applicable Compliance Method:

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

- e. Emission Limitation:
Visible particulate emissions shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

Compliance shall be determined through visible emission observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures in OAC rule 3745-17-03 (B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emissions testing shall be conducted within 3 months after the installation and startup of the wet scrubber and thermal oxidizer control system.

- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission limitations for particulate (pounds per hour) and organic compounds (pounds per hour).
- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates: for particulate, U.S. EPA Methods 1 through 4 and 5 of 40 CFR, Part 60, Appendix A; and for organic compounds, Methods 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Cleveland Division of Air Quality.
- d. The tests shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Cleveland Division of Air Quality.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland Division of Air Quality. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Cleveland Division of Air Quality's refusal to accept the results of the emission test(s).
- f. Personnel from the Cleveland Division of Air Quality shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Cleveland Division of Air Quality within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Cleveland Division of Air Quality.

F. Miscellaneous Requirements

- 1. The installation of the emissions units contained within this permit shall be installed in two phases, small scale operation and large scale operation. The small scale operation shall consist of only necessary equipment to operate the copper, cobalt, and nickel metal powder plating lines. Emissions generated by the small scale operation shall be controlled by an enclosed flare with pilot light. The large scale production shall include the installation of additional equipment to increase

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capacity of the metal plating lines with the addition of an aluminum metal powder plating line. The emissions generated by the large scale operation shall be controlled by a wet scrubber and thermal oxidizer control system.

2. Emissions testing of the emissions units contained within this permit shall not be required until installation of the large scale operation.