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## Permit to Install Terms and Conditions

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Application No. 17-1606  
APS Premise No. 1756000001  
Permit Fee: \$1600.00

Name of Facility: ORMET PRIMARY ALUMINUM CORPORATION

Person to Contact: JOHN REGGI

Address: P O BOX 176  
HANNIBAL, OH 43931

Location of proposed source(s): EAST SIDE OF S.R. #7 NORTH OF HANNIBAL  
OHIO TOWNSHIP, OHIO

Description of proposed source(s):  
MODIFICATION TO GAS FIRED AL BILLET CASTING FACILITY (17-143  
9) FOR CHLORINE GAS WAND FLUXING IN THE HOLD FURNACE.

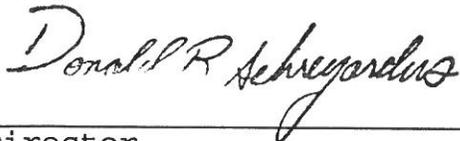
Date of Issuance: April 8, 1998

Effective Date: April 8, 1998

The above named entity is hereby granted a permit to install for the above described source(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 source(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 source(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



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Director

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. 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.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(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 Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(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 Ohio Administrative Code (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)

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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 applicable standards.

#### PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

#### 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.

#### APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

#### 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.

#### PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

#### SOURCE OPERATION 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 and regulations.

AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for ORMET PRIMARY ALUMINUM CORPORATION located in Monroe County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P980 (Mod)	Natural gas fired billet casting facility; charging, melting, holding, degassing and casting. 15,000 pounds/hour modification to installed facility to allow fluxing gas to be delivered to the hold furnace by using wands. Chlorine usage rate to increase from 0.25 cu ft/ton to 1.63 cu ft/ton.	Natural gas as fuel, high efficiency, low NO <sub>x</sub> burners, good operating practices. Chlorine usage not to exceed 1.63 cu. ft./ton of aluminum produced.* Maximum aluminum production not to exceed 15,000 pounds/hour, compliance with the terms and conditions of this permit	3745-31-05 3745-17-07 (A)* 3745-17-07 (B)* 3745-15-06 3745-15-07 3745-18-06*	<u>Melt Stack</u> PM - 0.09 pound/hour and 0.39 TPY SO <sub>2</sub> - 0.18 pound/hour and 0.08 TPY VOC - 0.84 pound/hour and 0.37 TPY CO - 1.05 pounds/hour and 4.60 TPY NO <sub>x</sub> - 1.80 pounds/hour and 7.88 TPY  <u>Hold Stack</u> PM - 1.836 pounds/hour and 8.04 TPY SO <sub>2</sub> - 0.007 pound/hour and 0.032 TPY VOC - 0.034 pound/hour and 0.15 TPY CO - 0.42 pound/hour and 1.84 TPY NO <sub>x</sub> - 0.72 pound/hour and 3.15 TPY

<u>Ohio EPA Source Number</u>	<u>Source Identification Description</u>	<u>BAT Determination</u>	<u>Applicable Federal &amp; OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P980 (Mod) (Cont'd)				<u>Casting Fugitive</u> SO <sub>2</sub> - 0.15 pound/hour and 0.66 TPY NO <sub>x</sub> - 0.08 pound/hour and 0.35 TPY VOC - 1.05 pounds/hour and 4.60 TPY Visible particulate emission - See Additional Special Terms and Conditions.

\* Less restrictive than BAT.

**SUMMARY**

**TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons/Year</u>
PM	8.43
SO <sub>2</sub>	0.772
VOC	5.12
CO	6.44
NO <sub>x</sub>	11.38

**WASTE DISPOSAL**

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

**MAINTENANCE OF EQUIPMENT**

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

**MALFUNCTION/ABATEMENT**

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the OEPA Southeast District Office - DAPC, 2195 Front Street, Logan, Ohio 43138.

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

**AIR POLLUTION NUISANCES PROHIBITED**

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

**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.

**ADDITIONAL SPECIAL TERMS AND CONDITIONS**

**A. Applicable Emission Limitations and/or Control Requirements**

1. The following is the Best Available Technology (BAT) determination for emissions unit P980:
  - a. air pollutant emissions from the melt stack shall not exceed the following: PM = 0.09 pound/hour and 0.39 TPY, SO<sub>2</sub> = 0.18 pound/hour and 0.08 TPY, VOC = 0.84 pound/hour and 0.37 TPY, CO = 1.05 pounds/hour and 4.60 TPY, NO<sub>x</sub> = 1.80 pounds/hour and 7.88 TPY;
  - b. air pollutant emissions from the hold stack shall not exceed the following: PM = 1.836 pounds/hour and 8.04 TPY, SO<sub>2</sub> = 0.007 pound/hour and 0.032 TPY, VOC = 0.034 pound/hour and 0.15 TPY, CO = 0.42 pound/hour and 1.84 TPY, NO<sub>x</sub> = 0.72 pound/hour and 3.15 TPY;
  - c. air pollutant emissions from casting activities shall not exceed the following: SO<sub>2</sub> = 0.15 pound/hour and 0.66 TPY, NO<sub>x</sub> = 0.08 pound/hour and 0.35 TPY, VOC = 1.05 pounds/hour and 4.60 TPY; and,

- d. visible particulate emission from the melt stack, hold stack and shall not exceed 5 percent opacity as a six-minute average.

**B. Operational Restrictions**

1. The maximum hourly production rate for this emissions unit shall not exceed 15,000 pounds per hour.
2. The maximum chlorine consumption rate shall not exceed 1.63 cubic feet of chlorine per ton of aluminum.

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall maintain daily records of the tons of aluminum produced in this emissions unit and the hours of operation.
2. The permittee shall maintain daily records of the total cubic feet of chlorine used in this emission unit.
3. The permittee shall maintain daily records of the average daily cubic feet of chlorine per ton of aluminum used in this emissions unit.

**D. Reporting Requirements**

1. The permittee shall submit annual reports which identify any exceedances of the aluminum production rate limitations and the chlorine gas consumption limitation as well as the corrective actions that were taken to achieve compliance. These reports shall be submitted to the Ohio EPA, Southeast District Office by January 31 of each year.

**E. Testing Requirements and Compliance Method Determination**

1. Compliance with the emission limitations in the Air Emission Summary for emissions unit P980 shall be determined in accordance with the following methods:

a. Emission Limitation

1.83 pounds PM/hour (hold stack)

Applicable Compliance Method

The particulate emission factor for fluxing is derived from the chemical formulation of chlorine reacting with aluminum to form dross  $AlCl_3$  and the chlorine usage rate of 1.63 cubic feet per ton aluminum. This analysis results in an emission factor (conservatively assumes that all of the dross is emitted as particulate matter) of 0.24 pound of

gross per ton of aluminum. Multiply the emission factor times the hourly production rate of aluminum to determine the pounds of particulate matter emitted. 0.24 pound PM/ton aluminum times 15,000 pounds aluminum per hour divide by 2,000 pounds/ton equals 1.8 pound/hour particulate emission rate from the fluxing activity.

The particulate emission factor for natural gas firing is from AP-42 Compilation of Air Pollutant Emission Factors of 3 pounds/MM cubic feet of gas fired. The hold furnace has two 6 MM Btu/hour burners. Multiply the number of burners (2) by the maximum rating (6 million Btu/hour) and divide by the heat content of one cubic foot of natural gas (1,000 Btu/cubic foot) divide by million to match emission factor units and multiply by the emission factor 3 pounds/MM cubic foot equal the maximum particulate emission rate of 0.036 pound/hour.

The total potential hold furnace stack particulate emission rate is the sum of the fluxing emission rate and gas combustion emission rate ( $1.8 + 0.036 = 1.836$  pounds/hour).

b. Emission Limitation

8.04 TPY PM (hold stack)

Applicable Compliance Method

Multiply the fluxing particulate emission factor of 0.24 pound PM/ton of aluminum times the annual tons of aluminum produced and divide by 2,000 pounds/ton to determine the annual tons particulate emissions per year.

Multiply the natural gas maximum hourly emission rate (0.036 pound/hour) by the annual hours of operation and divide by 2,000 pounds/ton to determine the annual particulate emission rate in tons per year.

The total hold furnace stack particulate emission rate is the sum of the fluxing emission rate and gas combustion emission rate.

c. Emission Limitation

0.007 pound SO<sub>2</sub>/hour (hold stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 0.6 pound of SO<sub>2</sub>/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

d. Emission Limitation

0.032 Ton/year SO<sub>2</sub> (hold stack)

Applicable Emission Limitation

Multiply the hourly emissions rate of 0.007 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

e. Emission Limitation

0.034 pound VOC/hour (hold stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 2.8 pounds of VOC/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

f. Emission Limitation

0.15 TPY VOC (hold stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.034 by the following 8,760 hours /year and then divide by 2,000 pounds/ton.

g. Emission Limitation

0.42 pound CO/hour (hold stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 35 pounds of CO/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

h. Emission Limitation

1.84 TPY CO (hold stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.42 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

i. Emission Limitation

0.72 pound NO<sub>x</sub>/hour (hold stack)

Applicable Compliance Method

Multiply the burner manufacturer provided emission factor of 0.06 pound of NO<sub>x</sub>/million Btu by maximum burner capacity (million Btu/hour).

j. Emission Limitation

3.15 TPY NO<sub>x</sub> (hold stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.72 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

k. Emission Limitation

0.09 pound PM/hour (melt stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 3.0 pounds of PM/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

l. Emission Limitation

0.39 pound TPY PM (melt stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.09 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

m. Emission Limitation

0.18 pound SO<sub>2</sub>/hour (melt stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 0.6 pound of SO<sub>2</sub>/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

n. Emission Limitation

0.8 TPY SO<sub>2</sub> (melt stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.18 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

o. Emission Limitation

0.84 pound VOC/hour (melt stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 2.8 pounds of VOC/10<sup>6</sup> cubic feet of natural gas usage by maximum hourly natural gas consumption rate (million cubic feet/hour).

p. Emission Limitation

3.7 TPY VOC (melt stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.84 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

q. Emission Limitation

1.05 pounds CO/hour (melt stack)

Applicable Compliance Method

Multiply the USEPA, AP-42, Section 1.4, 5th edition published in January 1995, emission factor of 35 pounds of CO/10<sup>6</sup> cubic feet of natural gas usage by

maximum hourly natural gas consumption rate (million cubic feet/hour).

r. Emission Limitation

4.60 TPY CO (melt stack)

Applicable Compliance Method

Multiply the hourly emissions rate of 1.05 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

s. Emission Limitation

1.80 pound NO<sub>x</sub>/hour (melt stack)

Applicable Compliance Method

Multiply the burner manufacturer's emission factor of 0.06 pound of NO<sub>x</sub>/10<sup>6</sup> million Btu by maximum hourly heat input (million Btu/hour).

t. Emission Limitation

7.88 TPY NO<sub>x</sub> (melt stack)

Applicable Compliance Method

Multiply the hourly emission rate of 1.8 by the following 8,760 hours/year and then divide by 2,000 pounds/ton.

u. Emission Limitation

0.15 pound SO<sub>2</sub>/hour (casting fugitive)

Applicable Compliance Method

Multiply the USEPA, AIRS emission factor of 0.02 pound of SO<sub>2</sub>/ton produced by the maximum hourly aluminum production rate.

v. Emission Limitation

0.66 TPY SO<sub>2</sub> (casting fugitive)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.15 by 8,760 hours/year and then divide by 2,000 pounds/ton.

w. Emission Limitation

0.08 pound NO<sub>x</sub>/hour (casting fugitive)

Applicable Compliance Method

Multiply the USEPA, AIRS emission factor of 0.01 pound of NO<sub>x</sub>/ton produced by the maximum hourly aluminum production rate.

x. Emission Limitation

0.35 TPY NO<sub>x</sub> (casting fugitive)

Applicable Compliance Method

Multiply the hourly emissions rate of 0.08 by 8,760 hours/year and then divide by 2,000 pounds/ton.

y. Emission Limitation

1.05 pounds VOC/hour (casting fugitive)

Applicable Compliance Method

Multiply the USEPA, AIRS emission factor of 0.14 pound of VOC/ton produced by the maximum hourly aluminum production rate.

z. Emission Limitation

4.60 TPY VOC (casting fugitive)

Applicable Compliance Method

Multiply the hourly emissions rate of 1.05 by 8,760 hours/year and then divide by 2,000 pounds/ton.

aa. Emission Limitation

Opacity not to exceed 5 percent as six-minute average.

Applicable Compliance Method

Compliance shall be determined by visible evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Reference Method 9.

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**F. Miscellaneous Requirements**

1. None.