

Facility ID: 1576001851 Issuance type: Final State Permit To Operate

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In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

- [Go to Part II for Emissions Unit P001](#)
- [Go to Part II for Emissions Unit P003](#)
- [Go to Part II for Emissions Unit P004](#)
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Facility ID: 1576001851 Emissions Unit ID: P001 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may 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>
P001 - 1,750 lbs/hr, 12.1 MMBtu/hr, natural gas-fired tunnel kiln for ceramic packing sintering; Company ID: No. 3 Tunnel Kiln	OAC rule 3745-31-05(A)(3) PTI 15-01344 Modification 5/28/02	Nitrogen oxide emissions shall not exceed 1.21 pounds/hour and 5.3 tons/year. Carbon monoxide emissions shall not exceed 1.02 pounds/hour and 4.47 tons/year. Particulate emissions shall not exceed 0.32 pound/hour and 1.4 tons/year. Sulfur dioxide emissions shall not exceed 3.85 pounds/hour (as a 30-day average) and 16.86 tons/year. Hydrogen fluoride emissions shall not exceed 1.47 pounds/hour (as a 30-day average) and 6.44 tons/year.
	OAC rule 3745-35-07(B)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1). Synthetic Minor Limits The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.a. below.
	OAC rule 3745-17-07(A)(1)	The total emissions of sulfur dioxide from emissions units P001-P003 shall not exceed 20.9 2 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.b. below.
	OAC rule 3745-17-11	Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.
	OAC rule 3745-18-06(E)(1)	The emission limitation specified by this rule is less stringent than the 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).

2. Additional Terms and Conditions

- (a) The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19. The weighted average of fluorine content shall be the average of each monthly weighted average of fluorine content over the previous twelve months. The monthly weighted-average of fluorine content shall be the monthly sum of the products of clay employed in emissions units P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in these emissions units. A fluorine content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.
- The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2. The weighted average of sulfur content shall be the average of each monthly weighted average of sulfur content over the previous twelve months. The monthly weighted average of sulfur content shall be the monthly sum of the products of clay employed in emissions units P001-P003 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in these emissions units. A sulfur content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.
- The only fuel to be used in this emissions unit shall be natural gas.

B. Operational Restrictions

1. The hydrogen fluoride emissions from this emissions unit shall not show an exceedance of the maximum 30 day average ground level concentration of 0.5 micrograms/m³. This is an Ohio EPA Modeling Policy. Compliance with this limit was demonstrated based on the SCREEN 3 model. The following stack parameters were used in this successful model run:
- Emission rate 0.137 gram/second (30-day average)
 Stack height 25.7 meters
 Stack inside diameter 0.76 meter
 Stack exit velocity 10.4034 meters/second
 Stack gas exit temp. 444 degrees Kelvin
- The following summarizes the results of the modeling:
- Maximum concentration was 2.775 ug/m³ at a distance of 326 meters. Multiplying by a conversion factor of 0.18, the result was 0.4995 ug/m³, which is less than the 0.5 ug/m³ limit.
- Any change to the emissions unit or its exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height) that would result in an exceedance of the maximum 30-day average ground level concentration of 0.5 microgram/m³ may be deemed a "modification" to the emissions unit, and, as such, prior notification to and approval from the Canton local air agency will be required, including the possible issuance of modifications to PTI 15-01344 and the operating permit.
2. The maximum annual combined clay usage for emissions units P001-P003 shall not exceed 9,500 tons, based upon a rolling, 12-month summation of the clay usage figures. The permittee has maintained monthly records over the last two years that show compliance with the annual combined clay usage limitation for emissions units P001-P003; therefore, compliance with the annual usage limitation expressed in this permit through rolling, 12-month summations shall begin immediately upon issuance of this permit.
3. This facility shall not use any clay in emissions units P001-P003 that contains more than a weighted average of 0.1101% sulfur content. See section A.2.b above for the method of determining the weighted average sulfur content.
4. This facility shall not use any clay in emissions units P001-P006 which contains more than a weighted average of 0.08% fluorine content. See section A.2.a above for the method of determining the weighted average fluorine content.

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep daily records of the amount of clay fired in this kiln.
2. The permittee shall conduct testing for both the fluorine and sulfur content of each different clay delivered. This testing shall be conducted at a minimum of once for every 1,000 tons of each different clay delivered.
3. The permittee shall determine the monthly weighted average of fluorine content by multiplying the monthly sum of the products of clay employed in kilns P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in kilns P001-P006.
4. The permittee shall determine the monthly weighted average of sulfur content by multiplying the monthly sum of the products of clay employed in kilns P001-P003 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in kilns P001-P003.
5. The permittee shall calculate the weighted average fluorine content using the average of each monthly weighted average of fluorine content over the previous twelve months. This calculation will be used to determine compliance with the limits for fluorine content of 0.08%.
6. The permittee shall calculate the weighted average sulfur contents using the average of each monthly weighted average of sulfur content over the previous twelve months. This calculation will be used to determine compliance with the limits for sulfur content of 0.1101%.
7. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P003.
8. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P006.
9. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P003.

10. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P006.
11. The permittee shall keep monthly records of the combined sulfur dioxide emissions from emissions units P001-P003.
12. The permittee shall keep monthly records of the combined HF emissions from emissions units P001-P006.
13. The permittee shall keep monthly records of the rolling, 12-month summation of the combined sulfur dioxide emissions from emissions units P001-P003.
14. The permittee shall keep monthly records of the rolling, 12-month summation of the combined HF emissions from emissions units P001-P006.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all exceedances of the rolling, 12-month clay combined usage limitation for emissions units P001-P003;
 - b. all exceedances of the rolling, 12-month combined emission limitation for HF from emissions units P001-P006;
 - c. all exceedances of the rolling, 12-month combined emission limitations for SO₂ from emissions units P001-P003;
 - d. all exceedances of the limit of 0.1101% sulfur content in the clay employed in emissions units P001-P003; and
 - e. all exceedances of the limit of 0.08% fluorine content in the clay employed in emissions units P001-P006.

These quarterly reports shall be submitted in accordance with Part I - General Terms and Conditions No. 3.
2. The permittee shall submit annual reports which specify the total combined HF emissions for emissions units P001-P006. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit annual reports which specify the total combined SO₂ emissions for emissions units P001-P003. These reports shall be submitted by January 31 of each year.

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 methods(s):

Emission Limitation:
Nitrogen oxide emissions shall not exceed 1.21 pounds/hour.

Applicable Compliance Method:
Multiply 12.1 MMBtu/hr times 0.1 lb NO_x/MMBtu (mfg. documentation), which equals 1.21 lbs NO_x/hr.

Emission Limitation:
Particulate emissions shall not exceed 0.32 pound/hour.

Applicable Compliance Method:
Multiply 0.875 ton/hr (max. PWR) times 0.37 lb particulates/ton (emission factor from AP-42, Table 11.3-2, 8/97), which equals 0.32 lb particulates/hr.

Emission Limitation:
Carbon monoxide emissions shall not exceed 1.02 pounds/hour.

Applicable Compliance Method:
Multiply 12.1 MMBtu/hr times 0.084 lb CO/MMBtu (emission factor from AP-42, Chapter 1.4, 3/98), which equals 1.02 lbs CO/hr

Emission Limitation:
Sulfur dioxide emissions shall not exceed 3.85 pounds/hour (as a 30-day average).

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
Hydrogen fluoride emissions shall not exceed 1.47 pounds/hour (as a 30-day average).

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:
5.3 tons NO_x/yr
4.47 tons CO/yr
1.4 tons particulates/yr

Applicable Compliance Method:
Multiply the hourly emission limitation times 8,760 hrs/yr and then divide by 2000 lbs/ton.

Emission Limitation:
16.86 tons SO₂/yr

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
6.44 tons HF/yr

Applicable Compliance Method:

The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:

The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.14.

Emission Limitation:

The total emissions of sulfur dioxide from emissions units P001-P003 shall not exceed 20.9 2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:

Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be determined by visible emission evaluations performed in accordance with procedures specified in OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in USEPA Reference Method 9. Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Emission Limitation:

The maximum annual combined clay usage for emissions units P001-P003 shall not exceed 9,500 tons, based upon a rolling, 12-month summation of the clay usage figures.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.9.

Emission Limitation:

The maximum annual combined clay usage for emissions units P001-P003 shall not exceed 9,500 tons, based upon a rolling, 12-month summation of the clay usage figures.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.9.

Emission Limitation:

This facility shall not use any clay in emissions units P001-P006 that contains more than a weighted average of 0.08% fluorine content.

Applicable Compliance Method:

See Section A.2.a above for the method of determining the weighted average fluorine content.

F. Miscellaneous Requirements

1. By request of the applicant and pursuant to OAC rule 3745-35-07, the special terms and conditions of this PTI are federally enforceable requirements.

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Facility ID: 1576001851 Emissions Unit ID: P003 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may 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 - 3,125 lbs/hr, 34.9 MMBtu/hr, natural gas-fired tunnel kiln for ceramic packing sintering; Company ID: No. 2 Tunnel Kiln (Formerly P018 Stark Ceramics) (Existing Emissions Unit)	OAC rule 3745-35-07(B) PTI 15-01344 Modification 5/28/02	Synthetic Minor Limits The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of

the monthly emissions.
See section A.2.a. below.

The total emissions of sulfur dioxide from emissions units P001-P003 shall not exceed 20.9 2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.
See section A.2.b. below.

OAC rule 3745-17-07(A)(1)

Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

OAC rule 3745-17-11

Particulate emissions shall not exceed 5.53 pounds/hour (based on a maximum PWR of 3,125 lbs/hr).

OAC rule 3745-18-06(E)(1)

Sulfur dioxide emissions shall not exceed 26.97 pounds/hour (based on a maximum PWR of 3,125 lbs/hr).

2. Additional Terms and Conditions

- (a) The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19. The weighted average of fluorine content shall be the average of each monthly weighted average of fluorine content over the previous twelve months. The monthly weighted-average of fluorine content shall be the monthly sum of the products of clay employed in emissions units P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in these emissions units. A fluorine content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2. The weighted average of sulfur content shall be the average of each monthly weighted average of sulfur content over the previous twelve months. The monthly weighted average of sulfur content shall be the monthly sum of the products of clay employed in emissions units P001-P003 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in these emissions units. A sulfur content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.

B. Operational Restrictions

- 1. The maximum annual combined clay usage for emissions units P001-P003 shall not exceed 9,500 tons, based upon a rolling, 12-month summation of the clay usage figures. The permittee has maintained monthly records over the last two years that show compliance with the annual combined clay usage limitation for emissions units P001-P003; therefore, compliance with the annual usage limitation expressed in this permit through rolling, 12-month summations shall begin immediately upon issuance of this permit.
- 2. This facility shall not use any clay in emissions units P001-P003 that contains more than a weighted average of 0.1101% sulfur content. See section A.2.b above for the method of determining the weighted average sulfur content.
- 4. This facility shall not use any clay in emissions units P001-P006 which contains more than a weighted average of 0.08% fluorine content. See section A.2.a above for the method of determining the weighted average fluorine content.

C. Monitoring and/or Record Keeping Requirements

- 1. The permittee shall keep daily records of the amount of clay fired in this kiln.
- 2. The permittee shall conduct testing for both the fluorine and sulfur content of each different clay delivered. This testing shall be conducted at a minimum of once for every 1,000 tons of each different clay delivered.
- 3. The permittee shall determine the monthly weighted average of fluorine content by multiplying the monthly sum of the products of clay employed in kilns P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in kilns P001-P006.
- 4. The permittee shall determine the monthly weighted average of sulfur content by multiplying the monthly sum of the products of clay employed in kilns P001-P003 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in kilns P001-P003.
- 5. The permittee shall calculate the weighted average fluorine content using the average of each monthly weighted average of fluorine content over the previous twelve months. This calculation will be used to determine compliance with the limits for fluorine content of 0.08%.
- 6. The permittee shall calculate the weighted average sulfur contents using the average of each monthly weighted average of sulfur content over the previous twelve months. This calculation will be used to determine compliance with the limits for sulfur content of 0.1101%.
- 7. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P003.
- 8. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P006.
- 9. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P003.
- 10. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P006.
- 11. The permittee shall keep monthly records of the combined sulfur dioxide emissions from emissions units P001-

P003.

12. The permittee shall keep monthly records of the combined HF emissions from emissions units P001-P006.
13. The permittee shall keep monthly records of the rolling, 12-month summation of the combined sulfur dioxide emissions from emissions units P001-P003.
14. The permittee shall keep monthly records of the rolling, 12-month summation of the combined HF emissions from emissions units P001-P006.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all exceedances of the rolling, 12-month clay combined usage limitation for emissions units P001-P003;
 - b. all exceedances of the rolling, 12-month combined emission limitation for HF from emissions units P001-P006;
 - c. all exceedances of the rolling, 12-month combined emission limitations for SO₂ from emissions units P001-P003;
 - d. all exceedances of the limit of 0.1101% sulfur content in the clay employed in emissions units P001-P003; and
 - e. all exceedances of the limit of 0.08% fluorine content in the clay employed in emissions units P001-P006.

These quarterly reports shall be submitted in accordance with Part I - General Terms and Conditions No. 3.
2. The permittee shall submit annual reports which specify the total combined HF emissions for emissions units P001-P006. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit annual reports which specify the total combined SO₂ emissions for emissions units P001-P003. These reports shall be submitted by January 31 of each year.

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 methods(s):

Emission Limitation:
Particulate emissions shall not exceed 5.53 pounds/hour (based on a maximum PWR of 3,125 lbs/hr).

Applicable Compliance Method:
Multiply 1.56 tons/hr (max. PWR) times 0.37 lb particulates/ton (emission factor from AP-42, Table 11.3-2, 8/97), which equals 0.58 lb particulates/hr.

Emission Limitation:
Sulfur dioxide emissions shall not exceed 26.97 pounds/hour (based on a maximum PWR of 2,500 lbs/hr).

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.14.

Emission Limitation:
The total emissions of sulfur dioxide from emissions units P001-P003 shall not exceed 20.9 2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:
The total emissions of sulfur dioxide from emissions units P001-P003 shall not exceed 20.9 2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:
The maximum annual combined clay usage for emissions units P001-P003 shall not exceed 9,500 tons, based upon a rolling, 12-month summation of the clay usage figures.

Applicable Compliance Method:
Monthly record keeping as required in Section C.9.

Emission Limitation:
This facility shall not use any clay in emissions units P001-P003 that contains more than a weighted average of 0.1101% sulfur content.

Applicable Compliance Method:
See Section A.2.b above for the method of determining the weighted average sulfur content.

Emission Limitation:
This facility shall not use any clay in emissions units P001-P006 that contains more than a weighted average of 0.08% fluorine content.

Applicable Compliance Method:
See Section A.2.a above for the method of determining the weighted average fluorine content.

F. Miscellaneous Requirements

1. By request of the applicant and pursuant to OAC rule 3745-35-07, the special terms and conditions of this PTI are

federally enforceable requirements.

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Facility ID: 1576001851 Emissions Unit ID: P004 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may 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>
P004 - 150 lbs/hr, 4.32 MMBtu/hr, natural gas-fired shuttle kiln for ceramic packing sintering; Company ID: No. 5 Shuttle Kiln	OAC rule 3745-31-05(A)(3)	Nitrogen oxide emissions shall not exceed 0.3 pound/hour and 1.31 tons/year.
	PTI 15-01344	Carbon monoxide emissions shall not exceed 0.36 pound/hour and 1.58 tons/year.
	Modification 5/28/02	Particulate emissions shall not exceed 0.03 pound/hour and 0.13 ton/year.
		Sulfur dioxide emissions shall not exceed 1.08 pounds/hour (as a 30-day average) and 1.52 tons/year.
		Hydrogen fluoride emissions shall not exceed 0.28 pound/hour (as a 30-day average) and 0.39 ton/year.
		The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1). Synthetic Minor Limits
	OAC rule 3745-35-07(B)	The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.a. below.
	OAC rule 3745-17-07(A)(1)	The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.b below.
	OAC rule 3745-17-11	Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.
	OAC rule 3745-18-06(E)(1)	The emission limitation specified by this rule is less stringent than the 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).

2. Additional Terms and Conditions

- (a) The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19. The weighted average of fluorine content shall be the average of each monthly weighted average of fluorine content over the previous twelve

months. The monthly weighted-average of fluorine content shall be the monthly sum of the products of clay employed in emissions units P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in these emissions units. A fluorine content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.

The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2. The weighted average of sulfur content shall be the average of each monthly weighted average of sulfur content over the previous twelve months. The monthly weighted average of sulfur content shall be the monthly sum of the products of clay employed in emissions units P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in these emissions units. A sulfur content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.

The only fuel to be used in this emissions unit shall be natural gas.

B. Operational Restrictions

1. The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures. The permittee has maintained monthly records over the last two years that show compliance with the annual combined clay usage limitation for emissions units P004-P006; therefore, compliance with the annual usage limitation expressed in this permit through rolling, 12-month summations shall begin immediately upon issuance of this permit.
2. This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content. See section A.2.b above for the method of determining the weighted average sulfur content.
3. This facility shall not use any clay in emissions units P001-P006 which contains more than a weighted average of 0.08% fluorine content. See section A.2.a above for the method of determining the weighted average fluorine content.

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep daily records of the amount of clay fired in this kiln.
2. The permittee shall conduct testing for both the fluorine and sulfur content of each different clay delivered. This testing shall be conducted at a minimum of once for every 1,000 tons of each different clay delivered.
3. The permittee shall determine the monthly weighted average of fluorine content by multiplying the monthly sum of the products of clay employed in kilns P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in kilns P001-P006.
4. The permittee shall determine the monthly weighted average of sulfur content by multiplying the monthly sum of the products of clay employed in kilns P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in kilns P004-P006.
5. The permittee shall calculate the weighted average fluorine content using the average of each monthly weighted average of fluorine content over the previous twelve months. This calculation will be used to determine compliance with the limits for fluorine content of 0.08%.
6. The permittee shall calculate the weighted average sulfur contents using the average of each monthly weighted average of sulfur content over the previous twelve months. This calculation will be used to determine compliance with the limits for sulfur content of 0.16 %.
7. The permittee shall keep monthly records of the total amount of clay fired in kilns P004-P006.
8. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P006.
9. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P004-P006.
10. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P006.
11. The permittee shall keep monthly records of the combined sulfur dioxide emissions from emissions units P004-P006.
12. The permittee shall keep monthly records of the combined HF emissions from emissions units P001-P006.
13. The permittee shall keep monthly records of the rolling, 12-month summation of the combined sulfur dioxide emissions from emissions units P004-P006.
14. The permittee shall keep monthly records of the rolling, 12-month summation of the combined HF emissions from emissions units P001-P006.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all exceedances of the rolling, 12-month clay combined usage limitation for emissions units P004-P006;
 - b. all exceedances of the rolling, 12-month combined emission limitation for HF from emissions units P001-P006;
 - c. all exceedances of the rolling, 12-month combined emission limitations for SO₂ from emissions units P004-P006;
 - d. all exceedances of the limit of 0.16% sulfur content in the clay employed in emissions units P004-P006; and
 - e. all exceedances of the limit of 0.08% fluorine content in the clay employed in emissions units P001-P006.

These quarterly reports shall be submitted in accordance with Part I - General Terms and Conditions No. 3.

2. The permittee shall submit annual reports which specify the total combined HF emissions for emissions units P001-P006. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit annual reports which specify the total combined SO₂ emissions for emissions units P004-P006. These reports shall be submitted by January 31 of each year.

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 methods(s):

Emission Limitation:
Nitrogen oxide emissions shall not exceed 0.3 pound/hour.

Applicable Compliance Method:
Multiply 0.075 lb NO_x/MMBtu (mfg. documentation low NO_x) times 4.32 MMBtu/hr equals 0.3 lb NO_x/hr.

Emission Limitation:
Particulate emissions shall not exceed 0.03 pound/hour.

Applicable Compliance Method:
Multiply 0.075 ton/hr (max. PWR) times 0.37 lb particulates/ton (emission factor from AP-42, Table 11.3-2, 8/97), which equals 0.03 lb particulates/hr.

Emission Limitation:
Carbon monoxide emissions shall not exceed 0.36 pound/hour.

Applicable Compliance Method:
Multiply 4.32 MMBtu/hr times 0.084 lb CO/MMBtu (emission factor from AP-42, Chapter 1.4, 3/98), which equals 0.36 lb CO/hr

Emission Limitation:
Sulfur dioxide emissions shall not exceed 1.08 pounds/hour (as a 30-day average).

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
Hydrogen fluoride emissions shall not exceed 0.28 pound/hour (as a 30-day average).

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:
1.31 tons NO_x/yr
1.58 tons CO/yr
0.13 ton particulates/yr

Applicable Compliance Method:
Multiply the hourly emission limitation times 8,760 hrs/yr and then divide by 2000 lbs/ton.

Emission Limitation:
1.52 tons SO₂/yr

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
0.39 ton HF/yr

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:
The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.14.

Emission Limitation:
The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:
Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:
Compliance shall be determined by visible emission evaluations performed in accordance with procedures specified in OAC rule 3745-17-03 (B)(1) using the methods and procedures specified in USEPA Reference Method 9. Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Emission Limitation:
The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures.

- Applicable Compliance Method:
 Monthly record keeping as required in Section C.9.
 Emission Limitation:
 This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content.
- Applicable Compliance Method:
 See Section A.2.b above for the method of determining the weighted average sulfur content.
 Emission Limitation:
 This facility shall not use any clay in emissions units P001-P006 that contains more than a weighted average of 0.08% fluorine content.
- Applicable Compliance Method:
 See Section A.2.a above for the method of determining the weighted average fluorine content.

F. Miscellaneous Requirements

1. By request of the applicant and pursuant to OAC rule 3745-35-07, the special terms and conditions of this PTI are federally enforceable requirements.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1576001851 Emissions Unit ID: P005 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may 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>
P005 - 272 lbs/hr, 7.92 MMBtu/hr, natural gas-fired shuttle kiln for ceramic packing sintering; Company ID: No. 6 Shuttle Kiln	OAC rule 3745-31-05(A)(3) PTI 15-01344 Modification 5/28/02	Nitrogen oxide emissions shall not exceed 0.55 pound/hour and 2.41 tons/year. Carbon monoxide emissions shall not exceed 0.67 pound/hour and 2.93 tons/year. Particulate emissions shall not exceed 0.05 pound/hour and 0.22 ton/year. Sulfur dioxide emissions shall not exceed 1.96 pounds/hour (as a 30-day average) and 2.75 tons/year. Hydrogen fluoride emissions shall not exceed 0.51 pound/hour (as a 30-day average) and 0.72 ton/year. Synthetic Minor Limits The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.a. below.
	OAC rule 3745-35-07(B)	The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.b below. Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent
	OAC rule 3745-17-07(A)(1)	

opacity, as a six-minute average, except as provided by rule.

OAC rule 3745-17-11

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

OAC rule 3745-18-06(E)(1)

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

- (a) The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19. The weighted average of fluorine content shall be the average of each monthly weighted average of fluorine content over the previous twelve months. The monthly weighted-average of fluorine content shall be the monthly sum of the products of clay employed in emissions units P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in these emissions units. A fluorine content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.

The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2. The weighted average of sulfur content shall be the average of each monthly weighted average of sulfur content over the previous twelve months. The monthly weighted average of sulfur content shall be the monthly sum of the products of clay employed in emissions units P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in these emissions units. A sulfur content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.

The only fuel to be used in this emissions unit shall be natural gas.

B. Operational Restrictions

1. The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures. The permittee has maintained monthly records over the last two years that show compliance with the annual combined clay usage limitation for emissions units P004-P006; therefore, compliance with the annual usage limitation expressed in this permit through rolling, 12-month summations shall begin immediately upon issuance of this permit.
2. This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content. See section A.2.b above for the method of determining the weighted average sulfur content.
3. This facility shall not use any clay in emissions units P001-P006 which contains more than a weighted average of 0.08% fluorine content. See section A.2.a above for the method of determining the weighted average fluorine content.

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall keep daily records of the amount of clay fired in this kiln.
2. The permittee shall conduct testing for both the fluorine and sulfur content of each different clay delivered. This testing shall be conducted at a minimum of once for every 1,000 tons of each different clay delivered.
3. The permittee shall determine the monthly weighted average of fluorine content by multiplying the monthly sum of the products of clay employed in kilns P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in kilns P001-P006.
4. The permittee shall determine the monthly weighted average of sulfur content by multiplying the monthly sum of the products of clay employed in kilns P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in kilns P004-P006.
5. The permittee shall calculate the weighted average fluorine content using the average of each monthly weighted average of fluorine content over the previous twelve months. This calculation will be used to determine compliance with the limits for fluorine content of 0.08%.
6. The permittee shall calculate the weighted average sulfur contents using the average of each monthly weighted average of sulfur content over the previous twelve months. This calculation will be used to determine compliance with the limits for sulfur content of 0.16 %.
7. The permittee shall keep monthly records of the total amount of clay fired in kilns P004-P006.
8. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P006.
9. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P004-P006.
10. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P006.
11. The permittee shall keep monthly records of the combined sulfur dioxide emissions from emissions units P004-P006.
12. The permittee shall keep monthly records of the combined HF emissions from emissions units P001-P006.
13. The permittee shall keep monthly records of the rolling, 12-month summation of the combined sulfur dioxide emissions from emissions units P004-P006.
14. The permittee shall keep monthly records of the rolling, 12-month summation of the combined HF emissions from emissions units P001-P006.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all exceedances of the rolling, 12-month clay combined usage limitation for emissions units P004-P006;
 - b. all exceedances of the rolling, 12-month combined emission limitation for HF from emissions units P001-P006;
 - c. all exceedances of the rolling, 12-month combined emission limitations for SO₂ from emissions units P004-P006;
 - d. all exceedances of the limit of 0.16% sulfur content in the clay employed in emissions units P004-P006; and
 - e. all exceedances of the limit of 0.08% fluorine content in the clay employed in emissions units P001-P006.

These quarterly reports shall be submitted in accordance with Part I - General Terms and Conditions No. 3.
2. The permittee shall submit annual reports which specify the total combined HF emissions for emissions units P001-P006. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit annual reports which specify the total combined SO₂ emissions for emissions units P004-P006. These reports shall be submitted by January 31 of each year.

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 methods(s):

Emission Limitation:
Nitrogen oxide emissions shall not exceed 0.55 pound/hour.

Applicable Compliance Method:
Multiply 0.07 lb NO_x/MMBtu (mfg. documentation low NO_x) times 7.92 MMBtu/hr equals 0.55 lb NO_x/hour.

Emission Limitation:
Particulate emissions shall not exceed 0.05 pound/hour.

Applicable Compliance Method:
Multiply 0.136 ton/hr (max. PWR) times 0.37 lb particulates/ton (emission factor from AP-42, Table 11.3-2, 8/97) equals 0.05 lb particulates/hr.

Emission Limitation:
Carbon monoxide emissions shall not exceed 0.67 pound/hour.

Applicable Compliance Method:
Multiply 7.92 MMBtu/hr times 0.084 lb CO/MMBtu (emission factor from AP-42, Chapter 1.4, 3/98) equals 0.67 lb CO/hr

Emission Limitation:
Sulfur dioxide emissions shall not exceed 1.96 lbs/hr (as a 30-day average).

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
Hydrogen fluoride emissions shall not exceed 0.51 lb/hr (as a 30-day average).

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluoride times 20/19.

Emission Limitation:
2.41 tons NO_x/yr
2.93 tons CO/yr
0.22 ton particulates/yr

Applicable Compliance Method:
Multiply the hourly emission limitation times 8,760 hrs/yr and then divide by 2000 lbs/ton.

Emission Limitation:
2.75 tons SO₂/yr

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
0.72 ton HF/yr

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:
The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.14.

Emission Limitation:
The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:
Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:
Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent

opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:

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

servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Emission Limitation:

The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures.

Applicable Compliance Method:

Monthly record keeping as required in Section C.9.

Emission Limitation:

This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content.

Applicable Compliance Method:

See Section A.2.b above for the method of determining the weighted average sulfur content.

Emission Limitation:

This facility shall not use any clay in emissions units P001-P006 that contains more than a weighted average of 0.08% fluorine content.

Applicable Compliance Method:

See Section A.2.a above for the method of determining the weighted average fluorine content.

F. Miscellaneous Requirements

1. By request of the applicant and pursuant to OAC rule 3745-35-07, the special terms and conditions of this PTI are federally enforceable requirements.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1576001851 Emissions Unit ID: P006 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may 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>
P006 - 272 lbs/hr, 7.92 MMBtu/hr, natural gas-fired shuttle kiln for ceramic packing sintering; Company ID: No. 7 Shuttle Kiln	OAC rule 3745-31-05(A)(3) PTI 15-01344 Modification 5/28/02	Nitrogen oxide emissions shall not exceed 0.55 pound/hour and 2.41 tons/year. Carbon monoxide emissions shall not exceed 0.67 pound/hour and 2.93 tons/year. Particulate emissions shall not exceed 0.05 pound/hour and 0.22 ton/year. Sulfur dioxide emissions shall not exceed 1.96 pounds/hour (as a 30-day average) and 2.75 tons/year. Hydrogen fluoride emissions shall not exceed 0.51 pound/hour (as a 30-day average) and 0.72 ton/year. The requirements of this rule also include compliance

OAC rule 3745-35-07(B)	with the requirements of OAC rule 3745-17-07(A)(1). Synthetic Minor Limits
	The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.a. below.
	The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See section A.2.b below.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-18-06(E)(1)	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**

- (a) The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19. The weighted average of fluorine content shall be the average of each monthly weighted average of fluorine content over the previous twelve months. The monthly weighted-average of fluorine content shall be the monthly sum of the products of clay employed in emissions units P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in these emissions units. A fluorine content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.
- The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2. The weighted average of sulfur content shall be the average of each monthly weighted average of sulfur content over the previous twelve months. The monthly weighted average of sulfur content shall be the monthly sum of the products of clay employed in emissions units P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in these emissions units. A sulfur content test shall be conducted for each different clay at a minimum of once for every 1,000 tons of each different clay delivered.
- The only fuel to be used in this emissions unit shall be natural gas.

B. **Operational Restrictions**

1. The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures. The permittee has maintained monthly records over the last two years that show compliance with the annual combined clay usage limitation for emissions units P004-P006; therefore, compliance with the annual usage limitation expressed in this permit through rolling, 12-month summations shall begin immediately upon issuance of this permit.
2. This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content. See section A.2.b above for the method of determining the weighted average sulfur content.
3. This facility shall not use any clay in emissions units P001-P006 which contains more than a weighted average of 0.08% fluorine content. See section A.2.a above for the method of determining the weighted average fluorine content.

C. **Monitoring and/or Record Keeping Requirements**

1. The permittee shall keep daily records of the amount of clay fired in this kiln.
2. The permittee shall conduct testing for both the fluorine and sulfur content of each different clay delivered. This testing shall be conducted at a minimum of once for every 1,000 tons of each different clay delivered.
3. The permittee shall determine the monthly weighted average of fluorine content by multiplying the monthly sum of the products of clay employed in kilns P001-P006 times the monitored fluorine content of each clay, divided by the monthly amount of clay employed in kilns P001-P006.
4. The permittee shall determine the monthly weighted average of sulfur content by multiplying the monthly sum of the products of clay employed in kilns P004-P006 times the monitored sulfur content of each clay, divided by the monthly amount of clay employed in kilns P004-P006.
5. The permittee shall calculate the weighted average fluorine content using the average of each monthly weighted average of fluorine content over the previous twelve months. This calculation will be used to determine compliance with the limits for fluorine content of 0.08%.
6. The permittee shall calculate the weighted average sulfur contents using the average of each monthly weighted average of sulfur content over the previous twelve months. This calculation will be used to determine compliance with the limits for sulfur content of 0.16 %.
7. The permittee shall keep monthly records of the total amount of clay fired in kilns P004-P006.
8. The permittee shall keep monthly records of the total amount of clay fired in kilns P001-P006.

9. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P004-P006.
10. The permittee shall keep monthly records of rolling, 12-month summation of the tons of clay used in emissions units P001-P006.
11. The permittee shall keep monthly records of the combined sulfur dioxide emissions from emissions units P004-P006.
12. The permittee shall keep monthly records of the combined HF emissions from emissions units P001-P006.
13. The permittee shall keep monthly records of the rolling, 12-month summation of the combined sulfur dioxide emissions from emissions units P004-P006.
14. The permittee shall keep monthly records of the rolling, 12-month summation of the combined HF emissions from emissions units P001-P006.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. all exceedances of the rolling, 12-month clay combined usage limitation for emissions units P004-P006;
 - b. all exceedances of the rolling, 12-month combined emission limitation for HF from emissions units P001-P006;
 - c. all exceedances of the rolling, 12-month combined emission limitations for SO₂ from emissions units P004-P006;
 - d. all exceedances of the limit of 0.16% sulfur content in the clay employed in emissions units P004-P006; and
 - e. all exceedances of the limit of 0.08% fluorine content in the clay employed in emissions units P001-P006.

These quarterly reports shall be submitted in accordance with Part I - General Terms and Conditions No. 3.

2. The permittee shall submit annual reports which specify the total combined HF emissions for emissions units P001-P006. These reports shall be submitted by January 31 of each year.
3. The permittee shall submit annual reports which specify the total combined SO₂ emissions for emissions units P004-P006. These reports shall be submitted by January 31 of each year.

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 methods(s):

Emission Limitation:
Nitrogen oxide emissions shall not exceed 0.55 pound/hour.

Applicable Compliance Method:
Multiply 0.07 lb NO_x/MMBtu (mfg. documentation low NO_x) times 7.92 MMBtu/hr equals 0.55 lb NO_x/hour.

Emission Limitation:
Particulate emissions shall not exceed 0.05 pound/hour.

Applicable Compliance Method:
Multiply 0.136 ton/hr (max. PWR) times 0.37 lb particulates/ton (emission factor from AP-42, Table 11.3-2, 8/97) equals 0.05 lb particulates/hr.

Emission Limitation:
Carbon monoxide emissions shall not exceed 0.67 pound/hour.

Applicable Compliance Method:
Multiply 7.92 MMBtu/hr times 0.084 lb CO/MMBtu (emission factor from AP-42, Chapter 1.4, 3/98) equals 0.67 lb CO/hr.

Emission Limitation:
Sulfur dioxide emissions shall not exceed 1.96 lbs/hr (as a 30-day average).

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
Hydrogen fluoride emissions shall not exceed 0.51 lb/hr (as a 30-day average).

Applicable Compliance Method:
The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluoride times 20/19.

Emission Limitation:
2.41 tons NO_x/yr
2.93 tons CO/yr
0.22 ton particulates/yr

Applicable Compliance Method:
Multiply the hourly emission limitation times 8,760 hrs/yr and then divide by 2000 lbs/ton.

Emission Limitation:
2.75 tons SO₂/yr

Applicable Compliance Method:
The calculation of sulfur dioxide emissions shall be made by multiplying the amount of clay employed times the weighted average of sulfur times 2.

Emission Limitation:
0.72 ton HF/yr

Applicable Compliance Method:

The calculation of hydrogen fluoride emissions shall be made by multiplying the amount of clay employed times the weighted average of fluorine times 20/19.

Emission Limitation:

The total emissions of hydrogen fluoride from emissions units P001-P006 shall not exceed 9.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.14.

Emission Limitation:

The total emissions of sulfur dioxide from emissions units P004-P006 shall not exceed 6.8 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be based on the recordkeeping found in Section C.13.

Emission Limitation:

Visible particulate emissions from the stack servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:

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

servicing this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule.

Emission Limitation:

The maximum annual combined clay usage for emissions units P004-P006 shall not exceed 2,125 tons, based upon a rolling, 12-month summation of the clay usage figures.

Applicable Compliance Method:

Monthly record keeping as required in Section C.9.

Emission Limitation:

This facility shall not use any clay in emissions units P004-P006 that contains more than a weighted average of 0.16% sulfur content.

Applicable Compliance Method:

See Section A.2.b above for the method of determining the weighted average sulfur content.

Emission Limitation:

This facility shall not use any clay in emissions units P001-P006 that contains more than a weighted average of 0.08% fluorine content.

Applicable Compliance Method:

See Section A.2.a above for the method of determining the weighted average fluorine content.

F. Miscellaneous Requirements

1. By request of the applicant and pursuant to OAC rule 3745-35-07, the special terms and conditions of this PTI are federally enforceable requirements.