

Facility ID: 1431074162 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

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.

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Facility ID: 1431074162 Emissions Unit ID: P028 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>
P028 - Kiln 14	OAC rule 3745-31-05(A)(3) (PTI 14-05545)	Particulate Emissions (PE) and particulate matter 10 microns or less in diameter (PM10) emissions shall not exceed 0.04 pound per hour and 0.17 TPY.
		Organic Compound (OC) emissions shall not exceed 0.34 pound per hour and 0.34 TPY.
		Nitrogen Oxide (NOx) emissions shall not exceed 0.76 pound per hour and 3.35 TPY.
		Carbon Monoxide (CO) emissions shall not exceed 0.42 pound per hour and 1.85 TPY.
		Sulfur Dioxide (SO2) emissions shall not exceed 0.003 pound per hour and 0.01 TPY.
		See term A.2.a and section B.1.
		Visible particulate emissions from any stack shall not exceed 10 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(A)(1)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B). 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 3745-17-11(B)	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)	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 3745-21-08(B)	See term A.2.c.

2. Additional Terms and Conditions

- (a) Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the continued use of natural gas or liquified petroleum gas (LPG) as fuel, and compliance with the specified allowable emission rates. The hourly emission limitations outlined above are based on the emissions unit's potential to emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limitations. The permittee shall satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install. The design of

the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

B. Operational Restrictions

1. The permittee shall fuel this emissions unit with only natural gas and/or liquified petroleum gas (LPG).

C. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas and/or LPG, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or LPG was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit annual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 of each year and shall cover the previous calendar year operation.

E. Testing Requirements

1. Emission Limitations:

Particulate emissions (PE) and particulate matter 10 microns or less in diameter (PM10) emissions shall not exceed 0.04 pound per hour and 0.17 ton per year.

The hourly and annual emission limitations were determined using the following equations:

$0.005 \text{ mmft}^3/\text{hour} \text{ (maximum hourly gas burning capacity of emissions unit) } \times 7.6 \text{ pounds of PE-PM10/mmft}^3 \text{ (AP-42 Natural Gas Combustion EF) } = 0.04 \text{ pound of PE-PM10/hour.}$

$0.04 \text{ pound of PE-PM10/hr } \times 8760 \text{ hours/year } \times \text{ton}/2000 \text{ pounds} = 0.17 \text{ TPY of PE-PM10.}$

2. Emission Limitations:

Nitrogen oxide (NOx) emissions shall not exceed 0.76 pound per hour and 3.35 tons per year.

The hourly and annual emission limitations were determined using the following equations:

$54.65 \text{ gallons of LPG/hour(max hourly LPG usage) } \times 14 \text{ pounds of NOx}/1000 \text{ gallons LPG (AP-42 Natural Gas Combustion EF) } = 0.76 \text{ pound of NOx/hour.}$

$0.76 \text{ pound of NOx/hour } \times 8760 \text{ hours/year } \times \text{ton}/2000 \text{ pounds} = 3.35 \text{ TPY of NOx.}$

3. Emission Limitations:

Carbon monoxide (CO) emissions shall not exceed 0.42 pound per hour and 1.84 tons per year.

The hourly and annual emission limitations was determined using the following equations:

$0.005 \text{ mmft}^3/\text{hour} \text{ (maximum hourly gas burning capacity of emissions unit) } \times 84 \text{ pounds of CO/mmft}^3 \text{ (AP-42 Natural Gas Combustion EF) } = 0.42 \text{ pound of CO/hour.}$

$0.42 \text{ pound of CO/hour } \times 8760 \text{ hours/year } \times \text{ton}/2000 \text{ pounds} = 1.84 \text{ TPY of CO.}$

4. Sulfur dioxide (SO2) emissions shall not exceed 0.003 pound per hour and 0.01 ton per year.

The hourly and annual emission limitations were determined using the following equations:

$0.005 \text{ mmft}^3/\text{hour} \text{ (maximum hourly gas burning capacity of emissions unit) } \times 0.6 \text{ pounds of SO}_2/\text{mmft}^3 \text{ (AP-42 Natural Gas Combustion EF) } = 0.003 \text{ pound of SO}_2/\text{hour.}$

$0.003 \text{ pound of SO}_2/\text{hour } \times 8760 \text{ hours/year } \times \text{ton}/2000 \text{ pounds} = 0.01 \text{ TPY of SO}_2.$

- 5. Organic compound (OC) emissions shall not exceed 0.34 pound per hour and 0.34 ton per year. OC emission are the summation of emissions from fuel burning and emissions from the vitrification process.

The hourly and annual emission limitations were determined using the following equations:

$0.005 \text{ mmft}^3/\text{hour (maximum hourly gas burning capacity of emissions unit)} \times 11 \text{ pounds of OC/mmft}^3 \text{ (AP-42 Natural Gas Combustion EF)} = 0.055 \text{ pound of OC/hour from fuel burning.}$

$0.055 \text{ pound/hour of OC (from fuel burning)} + 0.282 \text{ pound/hour (vitrification process-facility supplied)} = 0.34 \text{ pound of OC/hour.}$

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$0.055 \text{ pound/hour of OC (from fuel burning)} + (0.282 \text{ pound/hour of OC from vitrification} \times 0.08 \text{ (percent of operating time OC emissions from vitrification occurs)}) \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = .34 \text{ TPY of OC.}$

Compliance with the emission limitations for OC in section A.1 shall be demonstrated by using the emission factors in AP-42, Tables 1.4-1 & 1.4-2 revised 7/98, or Table 1.5-1, revised 10/96, with an addition of 0.282 pound of OC/hour. This addition is a measurement of OC emissions from the vitrification process and is based upon information obtained by the permittee for a similar operation.

- 6. Compliance with the emission limitations for PE/PM10, SO2, CO and NOx in section A.1 shall be demonstrated by using the emission factors in AP-42, Tables 1.4-1 & 1.4-2 revised 7/98, or Table 1.5-1 revised 10/96.

- 7. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

F. Miscellaneous Requirements

- 1. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

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Facility ID: 1431074162 Emissions Unit ID: P029 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>
P029 - Kiln 15	OAC rule 3745-31-05(A)(3) (PTI 14-05545)	Particulate Emissions (PE) and particulate matter 10 microns or less in diameter (PM10) emissions shall not exceed 0.02 pound per hour and 0.10 TPY. Organic Compound (OC) emissions shall not exceed 0.17 pound/hour and 0.19 TPY. Nitrogen Oxide (NOx) emissions shall not exceed 0.46 pound/hour and 2.01 TPY.

Carbon Monoxide (CO) emissions shall not exceed 0.25 pound/hour and 1.09 TPY.

Sulfur Dioxide (SO₂) emissions shall not exceed 0.0018 pound/hour and 0.01 TPY.

See term A.2.a and section B.1.

Visible particulate emissions from any stack shall not exceed 10 percent opacity, as a six-minute average, except as specified by rule.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B).

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

OAC rule 3745-17-11(B)

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)

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 3745-21-08(B)

See term A.2.c.

2. Additional Terms and Conditions

- (a) Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the continued use of natural gas or liquified petroleum gas (LPG) as fuel, and compliance with the specified allowable emission rates. The hourly emission limitations outlined above are based on the emissions unit's potential to emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits. The permittee shall satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

B. Operational Restrictions

- 1. The permittee shall fuel this emissions unit with only natural gas and/or liquified petroleum gas (LPG) .

C. Monitoring and/or Record Keeping Requirements

- 1. For each day during which the permittee burns a fuel other than natural gas and/or LPG, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- 2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.

D. Reporting Requirements

- 1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or LPG was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- 2. The permittee shall submit annual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 of each year and shall cover the previous calendar year operation.

E. Testing Requirements

- 1. Emission Limitations:
 - Particulate emissions (PE) and particulate matter 10 microns or less in diameter (PM₁₀) emissions shall not exceed 0.02 pound per hour and 0.10 ton per year.

The hourly and annual emission limitations were determined using the following equations:

$0.003 \text{ mmft}^3/\text{hour}$ (maximum hourly gas burning capacity of emissions unit) x 7.6 pounds of PE-PM10/mmft³ (AP-42 Natural Gas Combustion EF)= 0.02 pound of PE-PM10/hour.

$0.02 \text{ pound of PE-PM10/hour} \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = 0.10 \text{ TPY of PE-PM10.}$

2. Emission Limitations:

Nitrogen oxide (NOx) emissions shall not exceed 0.46 pound per hour and 2.01 tons per year.

The hourly and annual emission limitations were determined using the following equations:

$32.79 \text{ gallons of LPG/hour}$ (max hourly LPG usage) x 14 pounds of NOx/1000 gallons LPG (AP-42 Natural Gas Combustion EF) = 0.46 pound of NOx/hour.

$0.476 \text{ pound of NOx/hour} \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = 3.35 \text{ TPY of NOx.}$

3. Emission Limitations:

Carbon monoxide (CO) emissions shall not exceed 0.42 pound per hour and 1.84 tons per year.

The hourly and annual emission limitations was determined using the following equations:

$0.003 \text{ mmft}^3/\text{hour}$ (maximum hourly gas burning capacity of emissions unit) x 84 pounds of CO/mmft³(AP-42 Natural Gas Combustion EF)= 0.25 pound of CO/hour.

$0.25 \text{ pound of CO/hour} \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = 1.09 \text{ TPY of CO.}$

4. Sulfur dioxide (SO₂) emissions shall not exceed 0.018 pound per hour and 0.01 ton per year.

The hourly and annual emission limitations were determined using the following equations:

$0.003 \text{ mmft}^3/\text{hour}$ (maximum hourly gas burning capacity of emissions unit) x .6 pounds of SO₂/mmft³(AP-42 Natural Gas Combustion EF)= 0.0018 pound of SO₂/hour.

$0.0018 \text{ pound of SO}_2/\text{hour} \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = 0.01 \text{ TPY of SO}_2.$

5. Organic compound (OC) emissions shall not exceed 0.17 pound per hour and 0.19 ton per year. OC emission are the summation of emissions from fuel burning and emissions from the vitrification process.

The hourly and annual emission limitations were determined using the following equations:

$0.003 \text{ mmft}^3/\text{hour}$ (maximum hourly gas burning capacity of emissions unit) x 11 pounds of OC/mmft³(AP-42 Natural Gas Combustion EF)= 0.033 pound of OC/hour from fuel burning.

$0.033 \text{ pound/hour of OC (from fuel burning)} + 0.135 \text{ pound/hour (vitrification process-facility supplied)} = 0.17 \text{ pound of OC/hour.}$

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$0.033 \text{ pound/hour of OC (from fuel burning)} + (0.135 \text{ pound/hour of OC from vitrification} \times 0.08 \text{ (percent of operating time OC emissions from vitrification occurs)}) \times 8760 \text{ hours/year} \times \text{ton}/2000 \text{ pounds} = .19 \text{ TPY of OC.}$

Compliance with the emission limitations for OC in section A.1 shall be demonstrated by using the emission factors in AP-42, Tables 1.4-1 & 1.4-2 revised 7/98, or Table 1.5-1, revised 10/96, with an addition of 0.282 pound of OC/hour. This addition is a measurement of OC emissions from the vitrification process and is based upon information obtained by the permittee for a similar operation.

6. Compliance with the emission limitations for PE/PM₁₀, SO₂, CO and NO_x in section A.1 shall be demonstrated by using the emissions factors in AP-42, Tables 1.4-1 & 1.4-2 revised 7/98, or Table 1.5-1 revised 10/96.

7. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

F. **Miscellaneous Requirements**

- OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.