



State of Ohio Environmental Protection Agency

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

CERTIFIED MAIL

Street Address:

122 S. Front Street

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

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 13-04322

DATE: 7/1/2004

GE Quartz, Incorporated -- Highland Road
Louise Watson
4901 Campbell Road
Willoughby, OH 44094

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

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

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

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

Sincerely,

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

cc: USEPA

CLAA



**Permit To Install
Terms and Conditions**

**Issue Date: 7/1/2004
Effective Date: 7/1/2004**

FINAL PERMIT TO INSTALL 13-04322

Application Number: 13-04322
APS Premise Number: 1318482697
Permit Fee: **\$200**
Name of Facility: GE Quartz, Incorporated -- Highland Road
Person to Contact: Louise Watson
Address: 4901 Campbell Road
Willoughby, OH 44094

Location of proposed air contaminant source(s) [emissions unit(s)]:
**24400 Highland Road
Richmond Heights, Ohio**

Description of proposed emissions unit(s):
Ch 31 Modification to P007.

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

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

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

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

3. Records Retention Requirements

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

4. Inspections and Information Requests

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

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

5. Scheduled Maintenance/Malfunction Reporting

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

6. Permit Transfers

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

7. Air Pollution Nuisance

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

8. Termination of Permit to Install

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

9. Construction of New Sources(s)

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

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

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

10. Public Disclosure

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

11. Applicability

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

12. Best Available Technology

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

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

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

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14. Construction Compliance Certification

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

15. Fees

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

B. Permit to Install Summary of Allowable Emissions

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

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

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	0.15
NOx	7.70

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

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P007 - P14 Pilot Plant Machine consisting of an electric silica crucible arc furnace and a dust collector	OAC rule 3745-17-07(A)(1) OAC rule 3745-31-05(A)(3)
The requirements of this permit supercede those requirements identified in Permit to Install number 13-00082 issued on November 22, 1974.	OAC rule 3745-17-08(B) OAC rule 3745-17-11(B)(1)
	OAC rule 3745-23-06(B)

Applicable Emissions
Limitations/Control Measures

Particulate emissions (PE) shall not exceed 0.23 pound per hour and 0.15 ton per year.

Nitrogen oxides (NOx) emissions shall not exceed 11.9 pounds per hour and 7.70 tons per year. See A.2.a below.

Visible emissions from the exhaust of the dust collector shall not exceed 15 percent opacity, as a six-minute average, during any sixty-minute observation period.

Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 10 percent opacity, as a 3-minute average.

Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed for this emissions unit. (See A.2.b below)

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

The control measures specified by this rule are equivalent to the

control measures established pursuant to OAC rule 3745-31-05(A)(3).

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

See A.2.c below.

2. Additional Terms and Conditions

- 2.a** This emissions unit operates using a batch process. Therefore, the maximum number of crucibles this emissions unit can process is 5,400 per year. The hourly and annual emission limitations were established based on the potential to emit; therefore, no record keeping and/or reporting are needed for these emission limitations.
- 2.b** The permittee shall minimize or eliminate visible emissions of fugitive dust through the employment of best available control measures. These measures shall include, but not be limited to, the following:
- i. the use of adequate hooding or equivalent capture devices for the crucible filling, arc fusion, and crucible cooling operations; and
 - ii. all fugitive dust captured shall be vented to the baghouse.
- 2.c** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this Permit to Install.

B. Operational Restrictions

1. The pressure drop across the dust collector shall be maintained within the range of 1.0 to 6.0 inches of water while this emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform weekly checks, when any of the equipment comprising this emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the building egress points (i.e., building windows, doors, roof monitors, etc) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operation log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the location(s) and color(s) of the emissions;
 - b. whether the emissions are representative of normal conditions;
 - c. if the emissions are not representative of normal operations, the cause(s) of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the dust collector while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The permittee shall record the pressure drop across the dust collector on a daily basis while the emissions unit is in operation.

D. Reporting Requirements

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports to the Cleveland Division of Air Quality (Cleveland DAQ) that identify that all periods of time during which the pressure drop across the dust collector did not comply with the allowable range specified above.
2. The permittee shall submit semiannual written reports that:
 - a. identify all day during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and

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- b. describe any corrective actions taken to eliminate the visible fugitive particulate emissions.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.I.1 of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:
PE shall not exceed 0.23 lb/hr.

Applicable Compliance Method(s):

Compliance with the mass emission limitation may be determined by using the following one time calculation for potential to emit:

$$(4.16 \text{ crucibles/hr}) \times (0.549 \text{ lb PE/ crucible}) \times (1 - 0.90 \text{ Control Efficiency}) = 0.23 \text{ lb PE/hr}$$

Note: The emission factor was obtained from emissions testing performed at the Newark and Willoughby Quartz Plants and was multiplied by a factor of 1.5.

If required by the Cleveland DAQ or Ohio EPA, compliance with the hourly emission rate may also be demonstrated by emission testing using Methods 1 through 5 as outlined in 40 CFR Part 60, Appendix A.

- b. Emission Limitation:
PE shall not exceed 0.15 tpy.

Applicable Compliance Method(s):

Compliance with the mass emission limitation may be determined by using the following one time calculation for potential to emit:

$$(5400 \text{ crucibles/yr}) \times (0.549 \text{ lb PE/ crucible}) \times (1 \text{ ton}/2000 \text{ lbs}) \times (1 - 0.90 \text{ Control Efficiency}) = 0.15 \text{ tpy PE}$$

Note: The emission factor was obtained from emissions testing performed at the Newark and Willoughby Quartz Plants and was multiplied by a factor of 1.5.

- c. Emission Limitation:
NOx emissions shall not exceed 11.9 lbs/hr

Applicable Compliance Method(s):

Compliance with the mass emission limitation may be determined by using the following one time calculation for potential to emit:

$$(4.16 \text{ crucibles/hr}) \times (2.85 \text{ lbs NOx/ crucible}) = 11.9 \text{ lbs NOx/hr}$$

Note: The emission factor was obtained from emissions testing performed at the Newark and Willoughby Quartz Plants.

If required by the Cleveland DAQ or Ohio EPA, compliance with the hourly emission rate may also be demonstrated by emission testing using Methods 1 through 4 and 7 of 40 VFR Part 60, Appendix A "Determination of Nitrogen Oxides Emissions from Stationary Sources."

- d. Emission Limitation:
NOx emissions shall not 7.70 tons per year.

Applicable Compliance Method(s):

Compliance with the mass emission limitation may be determined by using the following one time calculation for potential to emit:

$$(5400 \text{ crucibles/ year}) \times (2.85 \text{ lbs NOx/ crucible}) \times (\text{ton}/2000 \text{ lbs}) = 7.70 \text{ tons per year NOx}$$

Note: The emission factor was obtained from emissions testing performed at the Newark and Willoughby Quartz Plants.

- e. Emission Limitation:
Visible emissions from the exhaust of the dust collector shall not exceed 15 percent opacity, as a six-minute average, during any sixty-minute observation period.

Applicable Compliance Method(s):

If required by Ohio EPA or Cleveland DAQ, compliance shall be determined by visible emission observations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in U.S. EPA Reference Method 9.

- f. Emission Limitation:
Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 10 percent opacity, as a 3-minute average.

Applicable Compliance Method:

If required by Ohio EPA or Cleveland DAQ, compliance with the above visible emission

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limitation shall be determined using Method 9 or 40 CFR, Part 60, Appendix A.

F. Miscellaneous Requirements

1. None