☒ **Synthetic Minor Determination and/or** ☐ **Netting Determination**
Permit To Install **13-04605**

A. Source Description:

Haydite - DiGeronimo Aggregates, LLC (Haydite hereafter) operates a rotary kiln (P901) to expand shale presently using re-refined used #4 fuel oil as the primary fuel and natural gas as the secondary fuel. Because of rising natural gas and fuel oil prices, Haydite has requested to allow, as expeditiously as possible, the use of only 16,250 tons/year of Ohio coal (maximum 2.5% sulfur) as the sole fuel. Re-refined used #4 fuel oil and/or natural gas will be used only as backup or in an emergency. Haydite was issued a Title V permit on 05/24/2002.

40 CFR 60 Subpart UUU requires that particulate emissions from the rotary kiln do not exceed 0.040 gr/dscf and OAC rule 3745-18-06(E)(1) requires that SO_2 be restricted to 270.2 lbs/hr.

In order to avoid major new source review and Ohio EPA's modeling requirements, the facility is limiting itself to the following restrictions:

Shale: restricted from 394,200 tons/year down to 350,000 tons/year; and
Coal: restricted from 35,916 tons/year down to 16,250 tons/year.

The facility is requesting the above limits as a synthetic minor limit to avoid major new source review and Ohio EPA's modeling requirements. The facility is planning to replace the existing baghouse and bicarbonate injection system with a new lime slurry injected baghouse system to meet the above requirements. The lime slurry injection will contain 300 lbs/hour of lime and the final lbs lime/hour will be established during the SO_2 compliance test.

B. Facility Emissions and Attainment Status:

Facility Emissions:

DiGeronimo-Haydite is located in Cuyahoga County which is non-attainment for ozone and $PM_{2.5}$. DiGeronimo-Haydite is classified as a major stationary source as defined in OAC rule 3745-31-01(KKK), in OAC rule 3745-77-01(W) and under the federal Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) regulations. Therefore, we have reviewed the Fuel Substitution Project to determine whether or not the project emissions exceed the respective significant rates for the regulated NSR pollutants and, if the significant rates are exceeded.

Table A: Regulated NSR Pollutant Emission Rate data for All the Fuels Associated with the Fuel Substitution Project Compared to the PSD Significant Emission Rates:

Pollutant-->	CO	NOx	SO_2	PE/TSP	PM_{10}	VOC	Pb
Proposed Allowed Emissions, TPY	90.5	99.1	822.5	122	122	1.1	0.1
2-Year Average Actual Emissions, TPY	63.2	74.4	956	187.2	187.2	1.3	0.1
Potential Emission Increases, TPY	27.3	24.7	-133.5	-65.2	-65.2	-0.2	0.0
PSD/ NNSR Significant Emission Rate, TPY	100	40	40	25	15	40	0.6

PSD/NNSR Significant Net Emissions Review Required? (Yes/No)	No	No	No	No	No	No	No
Modeling Significant Emission Rate, TPY	100	25	25	NA	10	NA	0.6
Modeling Required? (Yes/No)	No	No	No	NA	No	NA	No

The first five rows of Table A show that the emissions of CO, NOx, SO_2, PE/TSP, PM_{10} and VOC and Pb from the fuel switching are all below the PSD and NNSR significant emission rates.

Therefore, a PSD/NNSR Significant Net Emissions Review is not required. Consequently, a contemporaneous 5-year review of net emission increases and decreases is not necessary.

The last two rows of Table A show that modeling is also not triggered and not required.

Restriction on the Processing of Shale in the Rotary Kiln:
The rotary kiln has a maximum processing capacity of 45 tons shale per hour. At this rate, the rotary kiln is capable of processing 394,200 tons of shale per year. However, Haydite is voluntarily restricting the shale processing of the kiln to 350,000 tons shale processed based on a rolling, 12-month summation of the shale processed.

The rotary kiln can fire 4.1 tons coal per hour and 35,916 tons coal per year. However, DiGeronimo-Haydite is voluntarily restricting the firing of coal to 3.69 tons coal per hour and 16,250 tons coal per year based on a rolling, 12-month summation of the coal burned. Haydite will limit itself to process all the shale they can using 16,250 tons of coal per year and use re-refined used #4 fuel oil and/or natural gas only in an emergency.

As a result, the tons per year allowable CO, NOx, SO_2, PE/TSP, PM_{10} VOC and HCl have been calculated for 16,250 tons of coal per year.

Attainment Status:

Haydite is located in Cuyahoga County which is non-attainment for ozone and $PM_{2.5}$. Haydite is classified as a major stationary source as defined in OAC rule 3745-31-01(KKK), in OAC rule 3745-77-01(W) and under the federal Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) regulations. Emissions from the new project modification were reviewed for compliance with the Ohio EPA acceptable modeling and PSD significant emission rates in Table 3 of Ohio EPA Engineering Guide #69. The emission increases triggered neither modeling nor PSD/NNSR requirements. As a result, neither modeling nor New Source review was necessary.

C. <u>Source Emissions</u>:

Emissions from the drying and calcining operations taking place inside the rotary kiln are subject to Subpart UUU of 40 CFR 60 (NSPS). The switching of fuels from re-refined used #4 fuel oil and/or natural gas to coal as the primary fuel and to the use of re-refined used #4 fuel oil and/or natural gas as a backup or only in an emergency qualifies as a process modification. Based on 8760 hours of operation, the new units would have a potential to emit that would trigger PSD and Non-attainment NSR. However, the Synthetic Minor restrictions noted above keep emissions below the major modification thresholds.

D. Conclusion

Because these project emissions were restricted and stayed below significant modeling and PSD/NNSR levels, this project will not be subject to PSD or NNSR or modeling requirements even though there will be an emission increase of some of the regulated NSR pollutants. The inclusion of the Synthetic Minor restriction for the shale processing to 350,000 tons shale per year per rolling 12-month period and for the coal burning to 16,250 tons coal per year per rolling 12-month period restricts emissions below the PSD and Non-attainment NSR applicability.

A review and close scrutiny of project emissions, control devices, and air quality impacts indicates that the Fuel Substitution Project will comply with all applicable state and federal regulations and will result in no adverse ambient air quality impacts. Moreover, through a carefully pre-planned methodical ramping up of the coal fired into the rotary kiln in concert with the simultaneous ramping down of the secondary and/or tertiary fuel(s) to the kiln, DiGeronimo ensures that the project emissions will be maintained below the significant rates of the pollutants. In all likelihood, this transition can be accomplished in a matter of only hours.

State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: DRAFT PERMIT TO INSTALL
CUYAHOGA COUNTY
Application No: 13-04605
Fac ID: 1318270383

CERTIFIED MAIL

	TOXIC REVIEW
	PSD
Y	SYNTHETIC MINOR
	CEMS
	MACT
Subpart UUU	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 5/9/2006

Haydite - DiGeronimo Aggregates, LLC
Tom Reeder
8900 Hemlock Road
Indendence, OH 44131

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **$1000** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: **USEPA** **CLAA** **PA**

CUYAHOGA COUNTY

PUBLIC NOTICE PUBLIC HEARING
OHIO ENVIRONMENTAL PROTECTION AGENCY
ISSUANCE OF DRAFT PERMIT TO INSTALL TO
HAYDITE - DIGERONIMO AGGREGATES, LLC

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA) has issued, on May 9, 2006, draft action of Permit-to-Install (PTI) application number 13-04605 to Haydite - DiGeronimo Aggregates, LLC, in Cleveland, Ohio. The draft permit proposes to allow the use of pulverized coal as a primary fuel for the expanded shale kiln, at the facility located at 8900 Hemlock Road, Cleveland, Ohio, 44131.

A public hearing and information session on the draft air permit will be held on Thursday, June 15, 2006, at the Independence Branch Library, 6361 Selig Drive, Independence, Ohio 44131. The information session will commence at 6:30 p.m. and the hearing will follow immediately to accept comments on the draft permit. A presiding officer will be present and may limit oral testimony to ensure that all parties are heard.

All interested persons are entitled to attend or be represented and give written or oral comments on the draft permit at the hearing. Written comments on the draft permit must be received by the close of business on June 21, 2006. Comments received after this date will not be considered to be a part of the official record. Written comments may be submitted at the hearing or sent to: David Hearne, Division of Air Quality, City of Cleveland, 1925 Saint Clair Avenue, Cleveland, Ohio 44114.

Copies of the draft permit application and technical support information may be reviewed and/or copies made by first calling to make an appointment at the Division of Air Quality, City of Cleveland, located at the above address, telephone number (216) 664-2324.

DRAFT PERMIT TO INSTALL 13-04605

Application Number:	13-04605
Facility ID:	1318270383
Permit Fee:	**To be entered upon final issuance**
Name of Facility:	Haydite - DiGeronimo Aggregates, LLC
Person to Contact:	Tom Reeder
Address:	8900 Hemlock Road Indendence, OH 44131

Location of proposed air contaminant source(s) [emissions unit(s)]:
8900 Hemlock Road
Cleveland, Ohio

Description of proposed emissions unit(s):
Chapter 31 Modification to burn coal as primary fuel in rotary kiln and to install coal handling equipment -- P901.

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. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. The operating conditions existing at the time of sampling or measurement.

b. 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.

c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and

October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

2. 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, i.e., upset, 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. 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 or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. 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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit-To-Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 source(s) covered by this permit.

11. 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.

12. 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.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to “installation” of “any air contaminant source” as defined in OAC rule 3745-31-01, or “modification”, as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

B. State Only Enforceable Permit-To-Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit 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 of state-only enforceable 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 state-only required 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 (i.e., postmarked) quarterly, 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. 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.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit 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.

5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. 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 this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit 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.

6. 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.

7. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) 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.

9. Additional Reporting Requirements When There Are No Deviations of <u>Federally Enforceable</u> Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. 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

Pollutant	Tons Per Year	Increase (Decrease)
PE or PM_{10}	122.0	(65.2)
SO_2	822.5	(133.5)
NO_x	99.1	24.7
CO	90.5	27.3
OC or VOC	1.1	(0.2)
HCL	0.98	N/A

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None.

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None.

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. 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.

Operations, Property, and/or Equipment - P901 - Modification of existing rotary kiln (P901) to use coal as the primary fuel and installation of coal handling equipment and low-NOx burner or equivalent technology. 45 tons/hr capacity, rotary kiln for the production of expanded shale, equipped with a baghouse to control PE, PM_{10}, Pb, Hg, As, Cd and Cr emissions. A lime slurry injection system is employed to control SO_2, HF and HCl emissions via the same baghouse. In addition to coal, this emissions unit also uses re-refined used #4 fuel oil and/or natural gas as backup fuels.

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	Particulate emissions (PE) and particulate matter emissions less than 10 microns in diameter (PM_{10} emissions), filterable plus condensible, from the baghouse stack serving this emissions unit shall not exceed 32.94 lbs/hour and 122 tons per rolling, 12-months. Visible emissions of fugitive dust shall not exceed 10% opacity as a 6-minute average from any non-stack egress point at this emissions unit. The permittee shall employ best available control measures to minimize or eliminate visible emissions of fugitive dust. See A.I.2.a below. Nitrogen oxides emissions from this emissions unit shall not exceed 45.0 lbs/hr. Carbon monoxide emissions from this emissions unit shall not exceed 41.1 lbs/hr. Organic and volatile organic compound emissions from this emissions unit shall not exceed 0.50 lb/hr. Emissions of hydrogen chloride (HCl) from this emissions unit shall not exceed 0.44 lb/hr. The requirements of this rule also includes compliance with the requirements of OAC rule 3745-18-06(E)(1), OAC rule 3745-31-05(C), and 40 CFR Part 60, Subpart UUU. See A.II.1 below.

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-17-07(A)(1)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to NSPS 40 CFR 60 Subpart UUU.
OAC rule 3745-17-07(B)(1)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-08(B)	The control requirements specified or established by this rule are equivalent to or less stringent than the control requirements established pursuant to OAC rule 3745-31-05(A)(3).
OAC.rule 3745-17-11(B)(1)	The PE limitation specified in this rule is less stringent than the particulate emission limitations established pursuant to 40 CFR Part 60, Subpart UUU and OAC rule 3745-31-05(A)(3).
OAC rule 3745-18-06(E)(1)	Sulfur dioxide emissions from this emissions unit shall not exceed 270.2 lbs/hr.
OAC rule 3745-31-05(C) Synthetic Minor to avoid Modeling, PSD and Nonattainment NSR	822.5 tons SO2/rolling, 12-months; 99.1 tons NOx/rolling, 12-months; 90.5 tons CO/ rolling, 12-months; 1.1 ton OC/VOC/rolling, 12-months; 0.98 ton HCl/ rolling, 12-months. See A.II.3 and 4 below.
40 CFR Part 60, Subpart UUU	PE/PM_{10} (filterable) shall not exceed 0.040 gr/dscf; and Visible particulate emissions from the baghouse stack shall not exceed 10% opacity as a 6-minute block average.

2. Additional Terms and Conditions

2.a Best available control measures consisting of sufficient air flow pulled from the downstream end of the rotary kiln to achieve 99% or better capture of fugitive emissions. The permittee shall operate and maintain a system for the capture and collection of particulate emissions from this emissions unit that shall be sufficient to minimize or eliminate visible emissions of fugitive dust from this emissions unit.

2.b With the exception of OC/VOC emissions, the emission limits established above are based on burning coal which is the worst-case fuel that generates the highest emissions. The OC/VOC emission limit was established based on burning natural gas which results in the highest emission rate.

II. Operational Restrictions

1. The permittee shall employ pulverized coal to fire the burners associated with this emissions unit at a rate that shall not exceed 3.69 tons/hour, in order to comply with OAC rule 3745-18-06(E).

2. The sulfur content of the coal burned shall not exceed 2.5% by weight dry basis. Compliance with this specification shall be determined by using the analytical results provided by the permittee or coal supplier on a grab sample taken per shipment and analyzed as part of a monthly composite analysis.

3. The maximum annual coal firing rate for emissions unit P901 shall not exceed 16,250 tons coal per year, based on a rolling, 12-month summation of the coal firing rates.

   a. To ensure enforceability during the first twelve months of operation following issuance of this permit, the permittee shall not exceed the coal firing levels specified in the following table:

Month	**Maximum Allowable Cumulative Coal Fired:** (Tons Coal)
1	2,657
1- 2	5,314
1- 3	7,971
1- 4	10,628
1- 5	13,285
1- 6	15,942
1- 7	16,250
1- 8	16,250
1- 9	16,250
1- 10	16,250
1- 11	16,250
1- 12	16,250

   b. After the first 12 calendar months of operation, compliance with the annual coal firing rate limitation of 16,250 tons of coal for P901 shall be based on a rolling, 12-month summation of the coal firing rates.

4. The maximum annual rate of processing shale for emissions unit P901 shall not exceed 350,000 tons shale per year, based on a rolling, 12-month summation of the shale processing rates.

a. To ensure enforceability during the first twelve months of operation following issuance of this permit, the permittee shall not exceed the shale processing levels specified in the following table:

Month	Maximum Allowable Cumulative Shale Processed: (Tons Shale)
1	32,400
1-2	64,800
1-3	97,200
1-4	129,600
1-5	162,000
1-6	194,400
1-7	226,800
1-8	259,200
1-9	291,600
1-10	324,000
1-11	350,000
1-12	350,000

b. After the first 12 calendar months of operation, compliance with the annual processing rate limitation of 350,000 tons of shale shall be based on a rolling, 12-month summation of the processing rates.

5. The pressure drop across the baghouse shall be maintained within the range of 0.50 to 10.0 inches of water while the emissions unit is in operation.

6. The permittee shall maintain the forced draft fan at the shale charging chute to the kiln and the baghouse fan in good working order to prevent shale fines from becoming airborne.

7. The lime injection rate shall be continuously maintained, while the emissions unit is operating, on a monthly average basis at 300 lbs/hr or at a pounds/hour of lime established during the most recent SO2 compliance test that demonstrated compliance.

8. The permittee shall use only lime slurry as a wet sorbent in this emissions unit.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall monitor and record the coal firing rate either electronically or in an operations log on an hourly basis or properly install, operate and maintain equipment to monitor the coal firing rate 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).

2. Requirements for the Sampling and Analysis of the Coal Burned: The permittee shall collect or require the coal supplier to collect a representative grab sample of each shipment of coal that is received for burning in this emissions unit. The permittee or the coal supplier shall collect monthly composite testing of grab samples taken per shipment during the previous month. The permittee shall perform or require the supplier to perform the coal sampling in accordance with ASTM method D2234, Collection of a Gross Sample of Coal, and analyze the coal sample for sulfur content (percent by weight) and heat content (Btu/pound of coal) for each shipment of coal. The analytical methods to be used to determine the sulfur content and heat content shall be: ASTM method D3177, Total Sulfur in the Analysis Sample of Coal and Coke or ASTM method D4239, Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods; and ASTM method D2015, Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, ASTM method D3286, Gross Calorific Value of Coal and Coke by the Isothermal Bomb Calorimeter, or ASTM method D1989, Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters, respectively. Alternative, equivalent methods may be used upon written approval by the Cleveland Division of Air Quality.

3. Record Keeping Requirements for Coal Usage and Quality:

   For each shipment of coal received for burning in this emissions unit, the permittee shall maintain records of the total quantity of coal received, the permittee's or coal supplier's analyses for sulfur content.

4. The permittee shall collect and record the following information each month for emissions unit P901:

   a. the tons of coal fired into the kiln daily and the total tons per month;

   b. during the first 12 calendar months of operation, the cumulative coal firing rate, for each calendar month, in tons;

   c. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the coal fired, in tons.

5. The permittee shall collect and record the following information each month for emissions unit P901:

   a. the weight of shale processed, in tons, and the total tons per month;

   b. during the first 12 calendar months of operation, the cumulative shale processing rate, for each calendar month, in tons;

   c. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the shale processed, in tons.

6. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse 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). The permittee shall record the pressure drop across the baghouse on a daily basis.

7. The permittee shall maintain records when the forced draft fan at the shale charging chute to the kiln or the baghouse fan did not operate while the emissions unit was in operation.

8. The permittee shall collect and record the following information each month for this emissions unit:

   a. the number of hours the emissions unit was in operation;
   b. the total monthly feed rate of lime, in pounds; and
   c. the average hourly feed rate of lime calculated as the total monthly feed rate of lime divided by the number of hours the emissions unit was in operation.

9. For each day during which the permittee uses a wet sorbent other than lime slurry, the permittee shall maintain a record of the type and quantity of wet sorbent used in this emissions unit.

10. The permittee shall perform weekly checks, when the emissions unit is processing materials and when the weather conditions allow, for any visible emissions of fugitive dust (excluding uncombined water vapor) from the non-stack egress points serving this emissions unit. The presence or absence of any visible emissions shall be recorded electronically or in an operations log. If visible emissions are observed, the permittee shall also record the following:

    a. the location and 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.

    If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit

continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

11. Pursuant to 40 CFR 60.734(a), the permittee shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the stack of the baghouse. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR 60.13.

    Prior to the installation of the continuous opacity monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 1 for approval by the Ohio EPA, Central Office.

    Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

12. Within 60 days of the effective date of this permit or modification to the system, the permittee shall install, operate, and maintain a continuous opacity monitoring system to continuously monitor and record the opacity of the particulate emissions from this emissions unit. The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60. The permittee shall maintain records of data obtained by the continuous opacity monitoring system including, but not limited to:

    a. percent opacity on an instantaneous (one-minute) and 6-minute block average basis;
    b. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
    c. hours of operation of the emissions unit, continuous opacity monitoring system, and control equipment;
    d. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous opacity monitoring system;
    e. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous opacity monitoring system; as well as,
    f. the reason (if known) and the corrective actions taken (if any) for each such event in (d) and (e).

    Pursuant to 40 CFR 60.735(a), records of the measurements required in 40 CFR 60.734 (continuous opacity monitoring system) shall be retained for at least two (2) years.

13. The permittee shall collect and record the following information each month during which coal was burned for this emissions unit:

a. the number of hours the emissions unit was in operation;
b. the total monthly amount of shale processed and the coal fired, in tons; and
c. the average hourly SO_2 emission rate calculated in accordance with the following equation:

lbs SO_2/hr = [tons shale processed x lb SO_2/ton shale + tons coal fired x 100 lb SO_2/ton coal] / (hours of operation) x (1 - control efficiency)

The uncontrolled emission factor for shale shall be calculated using the difference in sulfur content between the shale and the finished product in accordance with the test methods identified in term A.III.15 below and the following equation:

lb SO_2 /ton shale = [sulfur content of raw shale - sulfur content of finished product] x 2000 lbs/ton x 64 lbs SO_2/mole / 32 lbs sulfur/mole

The uncontrolled emission factor for coal was calculated assuming that all of the sulfur in the coal is oxidized to SO_2. The permittee shall use the control efficiency determined from the most recent stack test that demonstrated compliance with the allowable hourly emission rate.

14. The permittee shall collect and record the following information each month, during which re-refined used #4 oil and/or natural gas is burned, for this emissions unit:

a. the number of hours the emissions unit was in operation;
b. the total monthly amount of shale processed (tons), and the amount of natural gas (mmcf) and/or re-refined used #4 oil (gallons) ; and
c. the average hourly SO_2 emission rate calculated in accordance with the following equation:

for natural gas:
lbs SO_2/hr = [tons shale processed x lb SO_2/ton shale + mmcf natural gas fired x 0.6 lb SO_2/mmcf] / (hours of operation) x (1 - control efficiency)

for re-refined used #4 oil:
lbs SO_2/hr = [tons shale processed x lb SO_2/ton shale + gals #4 oil fired x 113 lb SO_2/1000 gals] / (hours of operation) x (1 - control efficiency)

The uncontrolled emission factor for shale shall be calculated using the difference in sulfur content between the shale and the finished product in accordance with the test methods identified in term A.III.15 below and the following equation:

lb SO_2 /ton shale = [sulfur content of raw shale - sulfur content of finished product] x 2000 lbs/ton x 64 lbs SO_2/mole / 32 lbs sulfur/mole

The permittee shall use the control efficiency determined from the most recent stack test that demonstrated compliance with the allowable hourly emission rate.

15. The weighted average sulfur content of the raw and expanded (Haydite) shale processed in the kiln shall be determined not less than once per month and compliance with the SO2 emission limit verified by using the analytical results obtained. The permittee shall use analytical methods EPA Method 6010B or ASTM method D4292 to determine the sulfur content.

IV. Reporting Requirements

1. The permittee shall submit quarterly coal firing rate deviation (excursion) reports that identify all periods of time during which the hourly coal firing rate did not comply with the allowable rate specified above. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

2. Reporting Requirements for the Coal Usage and Quality Data:

   The permittee shall submit, on a quarterly basis, copies of the permittee's or coal supplier's analyses (wet and/or dry) for each shipment of coal that is received for burning in this emissions unit. The permittee's or coal supplier's analyses shall document the sulfur content (percent by weight) and heat content (Btu/lb) of each shipment of coal. The following information shall also be included with the copies of the permittee's or coal supplier's analyses:

   a. the total quantity of coal received in each shipment (tons); and
   b. the weighted* average sulfur content.

   * In proportion to the quantity of coal received in each shipment during the calendar month.

   These quarterly reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the coal shipments received during the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports to the Cleveland Division of Air Quality (Cleveland DAQ) that identify all exceedances of the rolling, 12-month coal firing rate limitation for P901 and, for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative coal firing levels for P901. Each report shall be submitted within 30 days after the deviation occurs.

4. The permittee shall submit deviation (excursion) reports to the Cleveland Division of Air Quality (Cleveland DAQ) that identify all exceedances of the rolling, 12-month shale processing rate limitation for P901 and, for the first 12 calendar months of operation, all

exceedances of the maximum allowable cumulative shale processing levels for P901. Each report shall be submitted within 30 days after the deviation occurs.

5. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

6. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the forced draft fan at the shale charging chute and/or the baghouse fan did not operate while the emissions unit was in operation. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

7. The permittee shall submit deviation (excursion) reports that identify each month during which the average hourly feed rate of the lime was not maintained at or above the required level specified above. Each report shall be submitted within 30 days after the deviation occurs.

8. The permittee shall submit quarterly deviation (excursion) reports that identify each day when a wet sorbent other than lime slurry was used in this emissions unit.

9. The permittee shall submit semiannual written reports that:

   a. identify all days during which any visible emissions of fugitive dust were observed from the non-stack egress points serving this emissions unit; and
   b. describe any corrective actions taken to eliminate the visible emissions.

   These reports shall be submitted to the Cleveland DAQ by January 31 and July 31 of each year and shall cover the previous 6-month calendar period.

10. The permittee shall submit quarterly written reports of exceedances of control device operating parameters required to be monitored by 40 CFR 60.734 of Subpart UUU. For the purpose of these reports, exceedances are defined as follows: all 6-minute block averages during which the average opacity from dry control devices is greater than 10 percent.

    The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous opacity monitoring system:

    a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR Parts 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Cleveland Division of Air

Quality, documenting all instances of opacity values in excess of any limitation specified in this permit, 40 CFR Part 60, OAC rule 3745-17-07, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude (percent opacity) of each 6-minute block average exceeding the applicable opacity limitation(s), as well as, the reason (if known) and the corrective actions taken (if any) for each exceedance. If there are no exceedances during the calendar quarter, the permittee shall submit a statement to that effect.

b. These quarterly reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall include the following:

i. the facility name and address;
ii. the manufacturer and model number of the continuous opacity monitor;
iii. the location of the continuous opacity monitor;
iv. the exceedance report as detailed in (a) above;
v. the total operating time (hours) of the emissions unit;
vi. the total operating time of the continuous opacity monitoring system while the emissions unit was in operation;
vii. the date, time, and duration of any/each malfunction* of the continuous opacity monitoring system, emissions unit, and/or control equipment;
viii. the date, time, and duration of any downtime* of the continuous opacity monitoring system and/or control equipment while the emissions unit was in operation; and
ix. the reason (if known) and the corrective actions taken (if any) for each event in (b)(7) and (8).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* Each downtime and malfunction event shall be reported regardless if there is an exceedance of the opacity limit.

11. The permittee shall submit quarterly deviation (excursion) reports that identify any month during which the average hourly SO_2 emission rate (section A.III.13 and A.III.14) exceeded 270.2 pounds SO_2 per hour and the actual average hourly SO_2 emission rate for each such month. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

12. The permittee shall submit annual reports to the Cleveland DAQ that specify, for the baghouse stack, the total particulate and PM10 emissions, nitrogen oxides, carbon monoxide, volatile organic compounds, sulfur dioxide, and HCl emissions, in tons, from this emissions unit for the previous calendar year. The reports shall be submitted by April 15

of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emissions Report.

13. The permittee shall submit, on a quarterly basis, copies of the permittee's sulfur analysis of the shale for each month in the quarter. The permittee's sulfur analyses shall document the sulfur content (percent) of both the raw shale and the expanded (Haydite) shale for each month. The following information shall also be included with the copies of the permittee's sulfur analyses:

    a. the total quantity of raw shale processed (tons) during each calendar month;

    b. the weighted* average sulfur content (percent) of the raw shale processed during each calendar month; and

    c. the weighted* average sulfur content (percent) of the Haydite produced during each calendar month.

    * Determined in accordance with term A.III.15.

    These quarterly reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the shale processed during the previous calendar quarter.

14. The permittee shall submit quarterly deviation reports in accordance with section A.1.c. of the General Terms and Conditions of this permit.

V. Testing Requirements

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

    a. Emission Limitations:
    PE and PM_{10} emissions (filterable plus condensible) from the baghouse stack serving this emissions unit shall not exceed 32.94 lbs/hour (assume all PE is PM_{10}).

    Applicable Compliance Method:
    The pound per hour limit was established in accordance with the following calculation:

    PE (filterable + condensible) (lbs/hr) = (200 lbs PE/ton coal x 3.69 tons coal/hr + 130 lbs PE/ton shale x 45 tons/hr) x (1 - 99.5/100) = 32.94 lbs/hr

    Compliance shall be determined by performing a stack test using USEPA methods 1 through 5, 201 OR 201A, and Method 202 (as appropriate) of 40 CFR Part 60, Appendix A for particulates.

Alternatively, compliance may be determined using an emission factor determined from the most recent stack test which demonstrated compliance with the pound/hour limitation.

The potential to emit PE when burning natural gas or #4 re-refined used oil is less than the allowable limit established; therefore, compliance will be assumed when burning these fuels. The emission factor for natural gas is 7.6 lbs PE/mmcf and the emission factor for #4 fuel oil is 8.3 lbs PE/1000 gallons (filterable + condensable). These emission factors were obtained from AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998) Sections 1.3 and 1.4 respectively. If required, when burning natural gas or #4 re-refined used oil, compliance shall be determined by performing a stack test using USEPA methods 1 through 5, 201 or 201A, and Method 202 (as appropriate) of 40 CFR Part 60, Appendix A for particulates.

b. Emission Limitations:
PE and PM_{10} (filterable plus condensible) emissions from the baghouse stack serving this emissions unit shall not exceed 122 TPY (assume all PE is PM_{10}).

Applicable Compliance Method:
The annual emission limitations were established by using the following equation:

PE (TPY) = (200 lbs PE/ton coal x 16,250 tons coal/yr + 130 lbs PE/ton shale x 350,000 tons shale/yr) x (1 - 99.5/100) / 2000 lbs/ton = 122 TPY

Compliance shall be determined based on the recordkeeping and reporting for the annual coal and shale usage and emission factors developed from the most recent stack test that demonstrated compliance (if available).

The potential to emit PE when burning natural gas or #4 re-refined used oil at the restricted annual shale processing rate is less than the allowable limit established; therefore, compliance with the annual limit will be assumed when burning these fuels provided compliance is maintained with the annual restriction on shale processed.

c. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 10% opacity as a 6-minute block average from any non-stack egress point.

Applicable Compliance Method:
Compliance with the visible fugitive emission limitations shall be determined by performing an opacity performance test using USEPA Method 9 of 40 CFR Part 60, Appendix A by observing the non-stack egress points serving this emissions unit.

d. Emission Limitation:
Nitrogen oxides emissions from this emissions unit shall not exceed 45.0 lbs/hr.

Applicable Compliance Method:
The pound per hour emission limit was established using the maximum coal burning rate from the following equation:

NOx (lbs/hr) = 12.2 lbs NOx/ton coal x 3.69 tons coal/hr = 45.0 lbs NOx/hr.

where the emission factor of 12.2 lbs NOx/ton of coal is provided by the burner manufacturer. The potential to emit NOx for natural gas and #4 fuel oil are each less than for coal; therefore, compliance will be assumed when burning these fuels. The emission factor for natural gas is 50 lb NOx/mmcf and the emission factor for #4 fuel oil is 20 lbs NOx/1000 gallons. These emission factors were obtained from AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998) Sections 1.3 and 1.4 respectively.

Compliance shall be determined by performing a stack test using USEPA test methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A.

e. Emission Limitation:
Carbon monoxide emissions from this emissions unit shall not exceed 41.1 lbs/hr.

Applicable Compliance Method:
Compliance shall be determined in accordance with the following equation:

CO (lbs/hr) = 11.14 lbs CO/ton coal x 3.69 tons coal/hr = 41.1 lbs CO/hour.

where the emission factor of 11.14 lbs CO/ton of coal is based on the October 14, 2005 stack test. The stack test determined that for natural gas and oil 1.50 moles

of CO are emitted per mole of NOx. It is assumed that the same ratio will hold true for coal. Therefore, the CO emission factor is calculated as follows:

CO (lbs/ton coal) = 12.2 lbs NOx/ton coal x 1.5 mole CO/mole NOx x 28 lbs CO/mole CO / 46 lbs NOx/mole NOx = 11.14 lbs CO/ton of coal

The potential to emit CO for natural gas and #4 fuel oil are each less than for coal; therefore, compliance will be assumed when burning these fuels. The emission factor for natural gas is 84 lbCO/mmcf and the emission factor for #4 fuel oil is 5 lbs CO/1000 gallons. These emission factors were obtained from AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998) Sections 1.3 and 1.4 respectively.

Compliance shall be determined by performing a stack test using USEPA test methods 1 through 4 and 10 of 40 CFR Part 60, Appendix A.

f. Emission Limitation:
Organic and volatile organic compound emissions from this emissions unit shall not exceed 0.50 lb/hr.

Applicable Compliance Method:
The only significant amount of OC/VOC produced is in the combustion of natural gas. The pound per hour limit was established from the AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998), Table 1.4-2, Section 1.4 emission factor (5.5 lbs VOC/mmcf) for VOC in natural gas combustion in accordance with the following calculation::

VOC (lbs/hr) = 5.5 lbs VOC/mmcf x 0.09 mmcf/hr = 0.50 lb VOC/hr

The potential to emit OC/VOC for coal and #4 fuel oil are each less than for natural gas; therefore, compliance will be assumed when burning these fuels. The emission factor for coal is 0.05 lb OC/ton coal and the emission factor for #4 fuel oil is 0.252 lb OC/1000 gallons. These emission factors were obtained from AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998) Sections 1.1 and 1.4 respectively.

If required, compliance shall be determined by performing a stack test using USEPA test methods 1 through 4 and 25 or 25A of 40 CFR Part 60, Appendix A.

g. Emission Limitation:
Hydrogen Chloride (HCl) emissions from this emissions unit shall not exceed 0.44 lb/hr.

Applicable Compliance Method:
The only significant amount of HCl produced is in the combustion of coal. The pound per hour and tons per year limits were established from the AP-42, Compilation of Air Pollutant Emission Factors, Volume 1, Fifth Edition, (July 1998), Table 1.1-15, Section 1.1, Page 1.1-36 emission factor for HCl in coal combustion in accordance with the following calculations:

HCl (lbs/hr) = 1.2 (lb Unc. HCl/ton coal) * 3.69 (tons coal/hr)(0.1) = 0.44 lb HCl/hr.

There are no HCl emission factors for natural gas and #4 fuel oil combustion; therefore, compliance will be assumed when burning these fuels.

If required, compliance shall be determined by performing a stack test using USEPA test methods 1 through 4 and 26 or 26A of 40 CFR Part 60, Appendix A.

h. Emission Limitation:
Sulfur dioxide emissions from this emissions unit shall not exceed 270.2 lbs/hr.

Applicable Compliance Method:
Compliance shall be based on the record keeping specified in section A.III.13 and A.III.14 of these terms and conditions.

In addition, compliance shall also be determined by performing a stack test using USEPA test methods 1 through 4 and 6 of 40 CFR Part 60, Appendix A.

j. Emission Limitation for P901
822.5 tons SO2/rolling, 12-months;
99.1 tons NOx/rolling, 12-months;
90.5 tons CO/ rolling, 12-months;
1.1 ton OC/VOC/rolling, 12-months;
0.98 ton HCl/ rolling, 12-months;

Applicable Compliance Method:
Compliance shall be determined based on the record keeping and reporting in A.III.3 and 4 and A.IV.2 and 3 respectively for the total annual coal fired and shale processed and using the following equations:

tons SO2 = [100 lbs SO2/ton coal x tons coal/year + lbs SO2/ton shale x tons shale/year] (1 - control efficiency) / 2000 lbs/ton

tons NOx = 12.2 lbs NOx /ton coal x tons coal/year / 2000 lbs/ton
tons CO = 11.14 lbs CO/ton coal x tons coal/year / 2000 lbs/ton
tons OC/VOC = 5.5 lb OC/VOC/mmcf gas x mmcf gas/year / 2000 lbs/ton
tons HCl = 1.2 lb HCl/ton coal x tons coal/year (0.1) / 2000 lbs/ton

where,

tons coal/year = the actual amount of coal burned during any rolling, 12-month period;

The uncontrolled SO_2 emission factor for shale shall be calculated using the difference in sulfur content between the shale and the finished product in accordance with the test methods identified in term A.III.15 and the following equation:

lb SO_2 /ton shale = [sulfur content of raw shale - sulfur content of finished product] x 2000 lbs/ton x 64 lbs SO_2/mole / 32 lbs sulfur/mole

The permittee shall use the control efficiency determined from the most recent stack test that demonstrated compliance with the allowable hourly emission rate.

Alternatively, except for SO_2, compliance may be determined using an emission factor (in lb/ton coal burned) for each pollutant above that was determined from the most recent stack test which demonstrated compliance with the hourly emission limits for each pollutant.

Except for OC/VOC, the potential to emit for natural gas and #4 fuel oil are each less than for coal; therefore, compliance will be assumed when burning these fuels. The potential to emit OC/VOC for coal and #4 fuel oil are each less than for natural gas; therefore, compliance will be assumed when burning these fuels.

k. Emission Limitations:
PE/PM_{10} shall not exceed 0.040 gr/dscf (filterable)

Applicable Compliance Method:
Compliance shall be determined by performing a stack test using USEPA methods 1 through 4 and Methods 5 of 40 CFR Part 60, Appendix A for particulates.

l. Emission Limitations:
Visible PE emissions shall not exceed 10% opacity as a 6-minute block average at any time for stack emissions.

Applicable Compliance Method:
Compliance with the visible emission limitations shall be determined from the results of the continuous opacity monitor or by performing an opacity performance test using USEPA Method 9 of 40 CFR Part 60, Appendix A.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

The emission testing shall be conducted within 6 months after beginning full-time operation of the emissions unit while burning coal following this modification and no less frequently than every five years thereafter.

The emission testing shall be conducted to demonstrate compliance with the allowable particulate (filterable plus condensible), opacity (stack and fugitive), SO_2, NOx and CO emission limitations .

The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate(s):for particulate, opacity (stack and fugitive), SO_2, NOx, and CO:

particulate: methods 1 through 5, 201 or 201A and Method 202 (as appropriate) of 40 CFR Part 60, Appendix A;
SO_2: methods 1 through 4 and 6 of 40 CFR Part 60, Appendix A;
NOx: methods 1 through 4 and 7 of 40 CFR Part 60, Appendix A;
opacity: pursuant to 40 CFR Part 60.736 (b)(2), method 9 of 40 CFR Part 60, Appendix A and the procedures in paragraph 60.11; and
CO: methods 1 through 4 and 10 of 40 CFR Part 60, Appendix A.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Cleveland Division of Air Quality (Cleveland DAQ). The minimum sample volume collected during each run shall be 60 dscf. The temperature of the kiln shall be monitored and recorded during each test run. The

stack test shall be performed in accordance with the requirements established in 40 CFR Part 60.736.

Pursuant to 40 CFR Part 60.736, the sampling time and volume for each test run in Method 5 shall be at least 2 hours and 1.70 dscm (60.03 dscf) and method 9 and the procedures in paragraph 60.11 shall be used to determine opacity from stack emissions.

The type of coal used for the stack tests shall be of the same type (specially content of fines in the coal) and in the same condition as that was used prior to the tests and that will be used after the tests.

Not later than 60 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Cleveland DAQ. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Cleveland DAQ's refusal to accept the results of the emission test(s).

Personnel from the Cleveland DAQ shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Cleveland DAQ within 30days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Cleveland DAQ.

VI. Miscellaneous Requirements

1. The continuous opacity monitoring system must meet the testing requirements of 40 CFR Part 60.

   Within 60 days after installation of the opacity monitor, the permittee shall conduct certification tests on the continuous opacity monitoring system equipment pursuant to 40 CFR Part 60, Appendix B, Performance Specification 1 and ORC section 3704.03(I).

   Personnel from the Ohio EPA Central Office and the Cleveland Division of Air Quality shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to

examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Cleveland DAQ and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous opacity monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specification 1; ORC section 3704.03(I); and ASTM D 6216-98. The letter/document of certification of the continuous opacity monitoring system, issued by the Ohio EPA, shall be maintained on file upon receipt and made available to the Cleveland Division of Air Quality upon request.

Ongoing compliance with the opacity limitation contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the requirements of 40 CFR Part 60.

2. Within 180 days of the effective date of this permit, the permittee shall develop and maintain a written quality assurance/quality control plan for the continuous opacity monitoring system, designed to ensure continuous valid and representative readings of opacity and compliance with 40 CFR Part 60. The plan shall include, at a minimum, procedures for conducting and recording daily automatic zero/span checks, provisions for conducting a quarterly audit of the continuous opacity monitoring system, and a description of preventive maintenance activities. The plan shall describe step by step procedures for ensuring that Performance Specification 1 is maintained on a continuous basis. The quality assurance/quality control plan and a logbook dedicated to the continuous opacity monitoring system must be kept on site and available for inspection during regular office hours.

B. State Only Enforceable Section

I. 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.

Operations, Property, and/or Equipment - P901 - Modification of existing rotary kiln (P901) to use coal as the primary fuel and installation of coal handling equipment and low-NOx burner or equivalent technology. 45 tons/hr capacity, rotary kiln for the production of expanded shale, equipped with a baghouse to control PE, PM_{10}, Pb, Hg, As, Cd and Cr emissions. A lime slurry injection system is employed to control SO_2, HF and HCl emissions via the same baghouse. In addition to coal, this emissions unit also uses re-refined used #4 fuel oil and/or natural gas as backup fuels.

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None.	None.

2. Additional Terms and Conditions

2.a None.

II. Operational Restrictions

None.

III. Monitoring and/or Recordkeeping Requirements

None.

IV. Reporting Requirements

None.

V. Testing Requirements

None.

VI. Miscellaneous Requirements

None.