



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: August 21, 2006
RE: Anderson Development / 089-21316-00124
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
(317) 232-8603
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Jeff Kasper
Anderson Development Company
3400 West 4th Avenue
Gary, IN 46406-1706

August 21, 2006

Re: Registered Construction and Operation Status
089-21316-00124

Dear Mr. Kasper,

The application from Anderson Development Company, received on June 17, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that your emission source, a borate and curative manufacturing plant located at 3400 West 4th Avenue, Gary, IN 46406-1706, is classified as registered. The emission source consists of the following emission units and pollution control devices:

- (a) One (1) boiler, identified as Boiler #1, constructed in 1978, fired by natural gas, rated at 20.9 million Btu per hour.
- (b) One (1) boiler, identified as Boiler #2, constructed before 1977, fired by natural gas, rated at 17.9 million Btu per hour.
- (c) One (1) dryer, identified as the A-Line Dryer, using steam for heat input, with a maximum capacity of 0.325 tons per hour, with particulate emissions controlled by a baghouse.
- (d) One (1) dryer, identified as the C-Line Dryer, using steam for heat input, with a maximum capacity of 1.0 tons per hour, with particulate emissions controlled by a cyclone.
- (e) One (1) packaging system, identified as the A-Line Packaging System, with a maximum capacity of 0.25 tons per hour, with particulate emissions controlled by a baghouse.
- (f) One (1) borate production line, with a maximum capacity of 0.05 tons per hour, consisting of:
 - (1) One (1) reactor rated at 2000 gallons.
 - (2) One (1) distillation tank.
 - (3) One (1) condenser, with VOC emissions controlled by a carbon adsorption unit.
 - (4) Three (3) process tanks rated at 1400, 1000, and 500 gallons with maximum combined throughput rate of 561 gallons per hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
2. Pursuant to 326 IAC 6-2-2, particulate emissions from Boiler #1 and Boiler #2 shall each be limited by the following equation:

$$Pt = 0.87 / Q^{0.16}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.
Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

- (a) For Boiler #2, constructed before 1977, the total source maximum operating capacity rating is 17.9 million Btu per hour heat input, and the equation provides an emission limit of 0.55 pounds of particulate matter emitted per million Btu (lb/MMBtu).
- (b) For Boiler #1, constructed in 1978, the total source maximum operating capacity rating is 38.8 million Btu per hour heat input, and the equation provides an emission limit of 0.48 pounds of particulate matter emitted per million Btu (lb/MMBtu).

This registration is the second air approval issued to this emission source by IDEM. All previous approvals are superseded by this registration. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, IN 46204-2251

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by
Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

AY/EVP

cc: File - Lake County
Lake County Health Department
Gary Department of Environmental Affairs
IDEM – Northwest Regional Office
Air Compliance Section Inspector - Rick Massoels
Permit Tracking
Compliance Data Section

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	Anderson Development Company
Address:	3400 West 4th Avenue
City:	Gary, IN 46406-1706
Authorized individual:	Jeff Kasper
Phone #:	219-977-9850
Registration #:	089-21316-00124

I hereby certify that Anderson Development Company is still in operation and is in compliance with the requirements of Registration 089-21316-00124.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Description and Location
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Source Name:	Anderson Development Company
Source Location:	3400 West 4th Avenue, Gary, IN 46406-1706
County:	Lake
SIC Code:	2821
Registration No.:	089-21316-00124
Permit Reviewer:	Adeel Yousuf / EVP

Existing Approvals

The source received the following approvals from the Indiana Department of Environmental Management:

- (a) Exemption 089-4555-00124, issued on June 2, 1995 for one (1) Borate production line, with a maximum capacity of 0.05 tons per hour, consisting of:
- (1) One (1) reactor rated at 2000 gallons.
 - (2) One (1) distillation tank.
 - (3) One (1) condenser, with VOC emissions controlled by a carbon adsorption unit.
 - (4) Three (3) process tanks rated at 1400, 1000, and 500 gallons with maximum combined throughput rate of 561 gallons per hour.

The source also received the following approvals from the Gary Department of Environmental Affairs:

- (b) Operation Permit 3078, for one (1) boiler, identified as Boiler #1, constructed in 1978, fired by natural gas, originally rated at 1.58 million Btu per hour. *
- (c) Operation Permit 3079, for one (1) boiler, identified as Boiler #2, constructed before 1977, fired by natural gas, originally rated at 2.1 million Btu per hour. *
- (d) Operation Permit 3080, for one (1) dryer, identified as the A-Line Dryer, using steam for heat input, with a maximum capacity of 0.325 tons per hour, with particulate emissions controlled by a baghouse.
- (e) Operation Permit 3081, for one (1) dryer, identified as the C-Line Dryer, using steam for heat input, with a maximum capacity of 1.0 tons per hour, with particulate emissions controlled by a cyclone.
- (f) Operation Permit 3082, for one (1) packaging system, identified as the A-Line Packaging System, with a maximum capacity of 0.25 tons per hour.

Note:

** The maximum heat input capacities for Boiler #1 and #2 were based on the approvals issued by Gary DEA and as part of this review, these heat input capacities are being re-evaluated.*

County Attainment Status

The emission source is located in Lake County.

Pollutant	Status
PM ₁₀	attainment
PM _{2.5}	nonattainment
SO ₂	attainment
NO ₂	attainment
8-hour Ozone	nonattainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Lake County as nonattainment for PM_{2.5}. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a lawsuit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's guidance to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions pursuant to the requirements of Emission Offset, 326 IAC 2-3.
- (c) Lake County has been classified as attainment or unclassifiable in Indiana for PM₁₀, SO₂, NO₂, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

See "Permit Level Determination – PSD or Emission Offset" for more details regarding PSD or Emission Offset applicability.

Background and Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by Anderson Development Company on June 17, 2005, relating to the two boilers at their borate and curative manufacturing plant located at 3400 West 4th Avenue, Gary, IN 46406-1706. The application involves a request to correct the boiler's heat input ratings, which were incorrect in the operation permits originally issued by the Gary Department of Environmental Affairs, and to add a baghouse to the A-Line Packaging System for particulate control.

Permitted Emission Units and Pollution Control Equipment

This application affects the following permitted emission units and pollution control devices:

- (a) One (1) boiler, identified as Boiler #1, constructed in 1978, fired by natural gas, rated at 20.9 million Btu per hour. *
- (b) One (1) boiler, identified as Boiler #2, constructed before 1977, fired by natural gas, rated at 17.9 million Btu per hour.*

Note:

** These maximum heat input capacities reflect the correct capacities of the Boilers #1 and #2 based on the application submitted by Anderson Development Company.*

- (c) One (1) packaging system, identified as the A-Line Packaging System, with a maximum capacity of 0.25 tons per hour, with particulate emissions controlled by a baghouse.

Following are the other permitted emissions units at this source:

- (d) One (1) dryer, identified as the A-Line Dryer, using steam for heat input, with a maximum capacity of 0.325 tons per hour, with particulate emissions controlled by a baghouse.
- (e) One (1) dryer, identified as the C-Line Dryer, using steam for heat input, with a maximum capacity of 1.0 tons per hour, with particulate emissions controlled by a cyclone.
- (f) One (1) borate production line, with a maximum capacity of 0.05 tons per hour, consisting of:
 - (1) One (1) reactor rated at 2000 gallons.
 - (2) One (1) distillation tank.
 - (3) One (1) condenser, with VOC emissions controlled by a carbon adsorption unit.
 - (4) Three (3) process tanks rated at 1400, 1000, and 500 gallons with maximum combined throughput rate of 561 gallons per hour.

Since the emission source has not yet received a registration that pertains to the entire emission source, the entire emission source is being evaluated for purposes of this review.

Enforcement Issues

IDEM is aware that the source was not issued a source registration by December 25, 1999, nor did they submit an application by that date, which is an alleged violation of 326 IAC 2-5.5-2(c). IDEM is reviewing this matter and will take appropriate action. This proposed registration is intended to satisfy the requirements of 326 IAC 2-5.5.

Emission Calculations

The borate production line's condenser is considered to be integral to the borate production process. Its purpose is necessary to bring borates from a gaseous state to a liquid state so that the liquid may be collected and sold. The carbon adsorption unit is considered to be an add-on control and is not integral to the process. The potential emissions from the borate production line are based on mass balance provided by the source (see page 4 of 4 of Appendix A for calculations). There are no changes to Borate production line during the review of this permit

The A-Line Dryer and C-Line Dryer both use steam for heat input. As a result, the only fuel combustion emissions from this source are from the boilers.

Uncontrolled particulate emissions from the A-Line Dryer, C-Line Dryer and A-Line Packaging System are based on the grain loading of the baghouse or cyclone provided by the manufacturer (see page 3 of 4 of Appendix A for calculations). PM is assumed to be equal to PM₁₀ as a worst case scenario.

Permit Level Determination

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit (PTE) is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following table reflects the source's potential to emit before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential to Emit (tons/yr)
PM	1.39
PM ₁₀	2.39
SO ₂	0.1
VOC	13.61
CO	14.30
NO _x	17.0

HAPs	Potential to Emit (tons/yr)
Hexane	0.31
Formaldehyde	0.01
Total	0.32

The potential to emit nitrogen oxides (NO_x) and VOC is less than twenty-five (25) tons per year, but greater than ten (10) tons per year. Therefore, the source is classified as a registration under 326 IAC 2-5.5.

Federal Rule Applicability Determination

326 IAC 12 and 40 CFR Part 60 (New Source Performance Standards (NSPS))

- (a) The requirements of New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR 60, Subpart Dc) "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" are not included for Boiler #1 and #2 in the permit because each boiler was constructed prior to the rule applicability date of June 8, 1989.
- (b) The requirements of New Source Performance Standard, 326 IAC 12 (40 CFR 60, Subpart K) are not included in the permit for the process tanks for Borate production line because the capacity of each tank is less than the rule applicability threshold of 40,000 gallons.
- (c) The requirements of New Source Performance Standard, 326 IAC 12 (40 CFR 60, Subpart Kb) are not included in the permit for the process tanks for Borate production line because the capacity of each tank is less than the rule applicability threshold of 19,812 gallons.

326 IAC 14, 326 IAC 20 and 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants (NESHAPs))

The requirements of 40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, are not included in this permit for Boilers #1 and #2 because this source is not a major source of HAPs.

State Rule Applicability Determination – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not a major source for Prevention of Significant Deterioration, 326 IAC 2-2. No attainment regulated pollutant has the potential to emit at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

326 IAC 2-2 (Emission Offset)

This source is not a major source for Emission Offset, 326 IAC 2-3. Although this source is located in 8-hr ozone nonattainment area, VOC does not have the potential to emit at a rate of 100 tons per year or more. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

326 IAC 2-1.1-5 (Nonattainment NSR)

The source is located in a non-attainment area for PM 2.5 and 8-hr ozone. However, the source has potential PM-10 (used as surrogate for PM-2.5) and VOC emissions of less than 100 tons per year. Therefore, 326 IAC 2-1.1-5 is not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control) because the source does not have potential to emit 10 tons per year of any single HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

Although this source is located in Lake County, the potential to emit volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are each less than twenty-five (25) tons per year. Also, this source is not required to have an operating permit under 326 IAC 2-7. Therefore, 326 IAC 2-6 does not apply.

326 IAC 2-7 (Part 70 Permit Program)

Although this source is located in Lake County, the potential to emit volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are each less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6.8 (Particulate Matter Limitations For Lake County)

This emission source is not subject to 326 IAC 6.8 due to the following:

- (a) The source is not specifically listed in 326 IAC 6.8-2 through 326 IAC 6.8-11.
- (b) The source does not have the potential to emit one hundred (100) tons or more of particulate matter per year; and
- (c) The source does not have actual emissions of ten (10) tons or more of particulate matter per year.

State Rule Applicability Determination – Boiler #2

326 IAC 3-5 (Continuous Monitoring of Emissions)

Boiler #2 is not subject to 326 IAC 3-5 (Continuous Monitoring of Emissions) because the boiler is smaller than one hundred million (100,000,000) British thermal units (Btus) per hour heat input capacity.

326 IAC 6-2-2 (Emission Limitations for Facilities Specified in 326 IAC 6-2-1(b))

Boiler #2 is subject to 326 IAC 6-2-2. Pursuant to 326 IAC 6-2-2, particulate emissions from indirect heating facilities existing on or before September 21, 1983 and located in Lake County shall be limited by the following equation:

$$Pt = 0.87 / Q^{0.16}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's operation permit application, except when some lower capacity is contained in the facility's operation permit, in which case, the capacity specified in the operation permit shall be used.

For a total source maximum operating capacity rating of 17.9 million Btu per hour heat input, the equation provides an emission limit of 0.55 pounds of particulate matter emitted per million Btu (lb/MMBtu).

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

Boiler #2 is not subject to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations) since it does not have a potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide.

State Rule Applicability Determination – Boiler #1

326 IAC 3-5 (Continuous Monitoring of Emissions)

Boiler #1 is not subject to 326 IAC 3-5 (Continuous Monitoring of Emissions) because the boiler is smaller than one hundred million (100,000,000) British thermal units (Btus) per hour heat input capacity.

326 IAC 6-2-2 (Emission Limitations for Facilities Specified in 326 IAC 6-2-1(b))

Boiler #1 is subject to 326 IAC 6-2-2. Pursuant to 326 IAC 6-2-2, particulate emissions from indirect heating facilities existing on or before September 21, 1983 and located in Lake County shall be limited by the following equation:

$$Pt = 0.87 / Q^{0.16}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's operation permit application, except when some lower capacity is contained in the facility's operation permit, in which case, the capacity specified in the operation permit shall be used.

For a total source maximum operating capacity rating of 38.8 million Btu per hour heat input, the equation provides an emission limit of 0.48 pounds of particulate matter emitted per million Btu (lb/MMBtu).

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

Boiler #1 is not subject to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations) since it does not have a potential to emit twenty-five (25) tons per year or ten (10) pounds per hour of sulfur dioxide.

State Rule Applicability Determination – Borate Production Line

326 IAC 8-1-6 (General VOC Reduction Requirements)

The borate production line is not subject to 326 IAC 8-1-6 (General Reduction Requirements) because the potential to emit volatile organic compounds is less than twenty-five (25) tons per year. Therefore, the BACT (best available control technology) requirements do not apply.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The borate production line is not subject to 326 IAC 6-3. Manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour are expressly exempted under 326 IAC 6-3-1(b)(14).

State Rule Applicability Determination – A-Line Dryer

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The A-Line Dryer is not subject to 326 IAC 6-3. Manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour are expressly exempted under 326 IAC 6-3-1(b)(14).

State Rule Applicability Determination – C-Line Dryer

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The C-Line Dryer is not subject to 326 IAC 6-3. Manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour are expressly exempted under 326 IAC 6-3-1(b)(14).

State Rule Applicability Determination – A-Line Packaging System

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The A-Line Packaging System is not subject to 326 IAC 6-3. Manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour are expressly exempted under 326 IAC 6-3-1(b)(14).

Conclusion and Recommendation

The construction and operation of this emission source shall be subject to the conditions of the attached Registration No. 089-21316-00124. The staff recommend to the Commissioner that this registration be approved.

Appendix A: Emission Calculations

Company Name: Anderson Development Company
Address City IN Zip: 3400 West 4th Avenue, Gary, IN 46406-1706
ID: 089-21316-00124
Reviewer: Adeel Yousuf / EVP
Date: 7/26/2006

Uncontrolled Potential Emissions (tons/year)				
Emissions Generating Activity				
Pollutant	Borate Process	Natural Gas Combustion	Dryers	TOTAL
PM	0.03	0.30	1.06	1.39
PM10	0.03	1.30	1.06	2.39
SO2	0.00	0.10	0.00	0.10
NOx	0.00	17.00	0.00	17.00
VOC	12.71	0.90	0.00	13.61
CO	0.00	14.30	0.00	14.30
total HAPs	0.00	0.32	0.00	0.32
worst case single HAP	0.00	(Hexane) 0.306	0.00	(Hexane) 0.306
Total emissions based on rated capacity at 8,760 hours/year.				
Controlled Potential Emissions (tons/year)				
Emissions Generating Activity				
Pollutant	Borate Process	Natural Gas Combustion	Dryers	TOTAL
PM	0.00	0.30	0.03	0.33
PM10	0.00	1.30	0.03	1.33
SO2	0.00	0.10	0.00	0.10
NOx	0.00	17.00	0.00	17.00
VOC	1.27	0.90	0.00	2.17
CO	0.00	14.30	0.00	14.30
total HAPs	0.00	0.32	0.00	0.32
worst case single HAP	0.00	(Hexane) 0.306	0.00	(Hexane) 0.306

Total emissions based on rated capacity at 8,760 hours/year, after control.

* Insignificant Activities include emissions from clean-up operations and emergency generators

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Anderson Development Company
Address City IN Zip: 3400 West 4th Avenue, Gary, IN 46406-1706
ID: 089-21316-00124
Reviewer: Adeel Yousuf / EVP
Date: 7/26/2006

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

38.8

339.888

	Pollutant					
	PM*	PM ₁₀ *	SO ₂	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.3	1.3	0.1	17.0	0.9	14.3

*PM emission factor is filterable PM only. PM₁₀ emission factor is condensable and filterable PM₁₀ combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.0021	0.0012	0.075	1.8	0.0034
Potential Emission in tons/yr	0.000	0.000	0.013	0.306	0.001

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	0.0005	0.0011	0.0014	0.00038	0.0021
Potential Emission in tons/yr	0.000	0.000	0.000	0.000	0.000

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations

Company Name: Anderson Development Company
Address City IN Zip: 3400 West 4th Avenue, Gary, IN 46406-1706
ID: 089-21316-00124
Reviewer: Adeel Yousuf / EVP
Date: 7/26/2006

A-Line Dryer:

0.325 ton *	2000 lb *	cf *	15 gr *	lb =	0.0497 lb PM/PM ₁₀
hr	ton	28 lb	cf	7000 gr	hr
		0.0497 lb	8760 hr *	ton =	0.22 ton PM/PM ₁₀
		hr	yr	2000 lb	yr
		0.22 ton PM ₁₀ *	0.10% after control =		0.00022 ton PM/PM ₁₀
		yr			yr

C-Line Dryer:

1 ton *	2000 lb *	cf *	15 gr *	lb =	0.1531 lb PM/PM ₁₀
hr	ton	28 lb	cf	7000 gr	hr
		0.1531 lb	8760 hr *	ton =	0.67 ton PM/PM ₁₀
		hr	yr	2000 lb	yr
		0.67 ton PM ₁₀ *	5.00% after control =		0.03352 ton PM/PM ₁₀
		yr			yr

A-Line Packaging:

0.25 ton *	2000 lb *	cf *	15 gr *	lb =	0.0383 lb PM/PM ₁₀
hr	ton	28 lb	cf	7000 gr	hr
		0.0383 lb	8760 hr *	ton =	0.17 ton PM/PM ₁₀
		hr	yr	2000 lb	yr
		0.17 ton PM ₁₀ *	0.10% after control =		0.00017 ton PM/PM ₁₀
		yr			yr

Appendix A: Emissions Calculations

Company Name: Anderson Development Company
Address City IN Zip: 3400 West 4th Avenue, Gary, IN 46406-1706
ID: 089-21316-00124
Reviewer: Adeel Yousuf / EVP
Date: 7/26/2006

Emissions from Borate Process:

Material	Density (lb/ft^3)
Cyclohexane	0.0174
Isopropyl Alcohol	0.0052
Triisopropyl Borate	0.0046

VOC Emissions

Unit Operation	Volume (ft^3)	Cyclohexane (lb)	Isopropyl Alcohol (lb)	Triisopropyl Borate (lb)	Total VOC (lb)	Hours per Batch (hr)	Total Potential VOC (ton/yr)
Reactor Charging	150	2.61	0.78	0.00	3.389	2	7.421
Heat-up	50	0.87	0.26	0.00	1.130	3	1.649
Water Phase	37	0.64	0.19	0.00	0.836	24	0.153
1st Fraction	180	3.13	0.93	0.82	4.887	12	1.784
2nd Fraction	60	1.04	0.31	0.27	1.629	18	0.396
Product	100	0.00	0.00	0.46	0.456	18	0.111
Drumout	120	0.00	0.00	0.55	0.547	2	1.198
					Total (hours):	79	
					Total Uncontrolled Potential Emissions (ton/yr):		12.712
					Total Controlled Potential Emissions (ton/yr)*:		1.271

* VOC emissions from the Borate process are controlled by a Carbon Adsorption unit with control efficiency of 90%.

PM/PM10 Emissions

0.05 ton *	2000 lb *	cf *	15 gr *	lb =	0.0077 lb PM/PM ₁₀
hr	ton	28 lb	cf	7000 gr	hr
		0.0077 lb	8760 hr *	ton =	0.03 ton PM/PM ₁₀
		hr	yr	2000 lb	yr
		0.03 ton PM ₁₀ *		0.10% after control =	3.35E-05 ton PM/PM ₁₀
		yr			yr

The following calculations determine the emission limit under 326 IAC 6-3-2:

$$E = 4.1 * (0.05 \wedge 0.67) = 0.551 \text{ lb/hr by default}$$

$$0.551 \text{ lb/hr} * 8760 \text{ hr/yr} / 2000 \text{ lb/ton} = 2.41 \text{ ton/yr}$$