



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: May 28, 2008

RE: Ecolab, Inc. / 069-23695-00052

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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 1/2/08



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Mr. Jim Konuch  
Ecolab, Inc.  
970 East Tipton Street  
Huntington, Indiana 46750

May 28, 2008

Re: Registered Construction and Operation Status,  
069-23695-00052

Dear Mr. Konuch:

The application from Ecolab, Inc., received on September 26, 2006, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following soap and sanitizer manufacturing plant, located at 970 East Tipton Street, Huntington, Indiana, is classified as registered:

- (a) One (1) natural gas-fired boiler, identified as emission unit 002, constructed in 1966, with a heat input capacity of 8.4 MMBtu per hour, exhausting to stack 002.
- (b) One (1) natural gas-fired air make-up heating unit, identified as emission unit 003, constructed in 1969, with a heat input capacity of 2.0 MMBtu per hour.
- (c) One (1) natural gas-fired air make-up heating unit, identified as emission unit 004, constructed in 2006, with a heat input capacity of 2.45 MMBtu per hour.
- (d) One (1) diesel-fired emergency fire pump, identified as emission unit 005, constructed in 1969, with a maximum capacity of 85.0 HP, exhausting to stack 003.
- (e) One (1) teat dip manufacturing operation constructed prior to 2006. In the teat dip manufacturing operation, ingredients are heated, mixed, and blended (no chemical reaction occurs). Then the product is cooled and pumped into holding tanks before it is filled into containers.
- (f) One (1) soap and sanitizer mixing operation constructed prior to 2006. In the soap and sanitizer mixing operation, ingredients (including ethanol at 162,421 gallons per year) are added to a mixing tank and blended (no chemical reaction occurs). Then the product is pumped to a holding tank. Two percent (2%) of VOC is assumed to be emitted.
- (g) Seventeen (17) holding tanks, constructed prior to 2006, ranging in size from 1,000 gallons to 5,600 gallons used to store blended products.
- (h) One (1) container filling operation constructed prior to 2006. In the filling process, soaps and sanitizers are transferred from holding tanks to a fill line, where the liquid is filled into a container.
- (i) Product labeling operations constructed prior to 2006, consisting of three (3) automatic labeler systems (located on three of the filling lines). These units imprint a lot number and expiration date onto the filled containers.

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 forty percent (40%) 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 6-4 (Fugitive Dust Emissions), The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-off-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
3. Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the natural gas-fired boiler are limited to less than 0.53 pounds per million Btu heat input.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.1 and 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  
MC 61-53 IGCN 1003  
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.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Stacie Enoch, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7895 to speak directly to Ms. Enoch. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251 or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely/Original Signed By:

Iryn Calilung, Section Chief  
Permits Branch  
Office of Air Quality

ERG/SE

cc: File - Huntington County  
Huntington County Health Department  
Air Compliance  
Permit Tracking  
Compliance Data Section  
Office of Enforcement  
Billing, Licensing and Training Section

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	<b>Ecolab, Inc.</b>
<b>Address:</b>	<b>970 East Tipton Street, Huntington, Indiana 46750</b>
<b>Phone #:</b>	<b>(260) 359-3272</b>
<b>Registration #:</b>	<b>069-23695-00052</b>

<b>Certification by the Authorized Individual</b>
I hereby certify that Ecolab, Inc. is still in operation and is in compliance with the requirements of Registration No. 069-23695-00052.
<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Phone Number:</b>
<b>Date:</b>

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a Registration

**Source Background and Description**

Source Name:	Ecolab, Inc.
Source Location:	970 East Tipton Street, Huntington, Indiana 46750
County:	Huntington
SIC Code:	2841
Registration No.:	069-23695-00052
Permit Reviewer:	ERG/SE

The Office of Air Quality (OAQ) has reviewed an application from Ecolab, Inc. relating to the construction and operation of a soap and sanitizer manufacturing plant.

**Unpermitted Emission Units and Pollution Control Equipment**

The source consists of the following emission units and pollution control devices:

- (a) One (1) natural gas-fired boiler, identified as emission unit 002, constructed in 1966, with a heat input capacity of 8.4 MMBtu per hour, exhausting to stack 002.
- (b) One (1) natural gas-fired air make-up heating unit, identified as emission unit 003, constructed in 1969, with a heat input capacity of 2.0 MMBtu per hour.
- (c) One (1) natural gas-fired air make-up heating unit, identified as emission unit 004, constructed in 2006, with a heat input capacity of 2.45 MMBtu per hour.
- (d) One (1) diesel-fired emergency fire pump, identified as emission unit 005, constructed in 1969, with a maximum capacity of 85.0 HP, exhausting to stack 003.
- (e) One (1) teat dip manufacturing operation constructed prior to 2006. In the teat dip manufacturing operation, ingredients are heated, mixed, and blended (no chemical reaction occurs). Then the product is cooled and pumped into holding tanks before it is filled into containers.
- (f) One (1) soap and sanitizer mixing operation constructed prior to 2006. In the soap and sanitizer mixing operation, ingredients (including ethanol at 162,421 gallons per year) are added to a mixing tank and blended (no chemical reaction occurs). Then the product is pumped to a holding tank. Two percent (2%) of VOC is assumed to be emitted.
- (g) Seventeen (17) holding tanks, constructed prior to 2006, ranging in size from 1,000 gallons to 5,600 gallons used to store blended products.
- (h) One (1) container filling operation constructed prior to 2006. In the filling process, soaps and sanitizers are transferred from holding tanks to a fill line, where the liquid is filled into a container.

- (i) Product labeling operations constructed prior to 2006, consisting of three (3) automatic labeler systems (located on three of the filling lines). These units imprint a lot number and expiration date onto the filled containers.

### Existing Approvals

This is the first air approval issued to this source.

### Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled "Unpermitted Emission Units and Pollution Control Equipment".
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed registration is intended to satisfy the requirements of 326 IAC 2-5.1 and 326 IAC 2-5.5.

### Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
002	Boiler	6.00	2.00	2000	275
003	Fire Pump	1.00	0.25	300	275

### Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 26, 2006, with additional information received on March 24, 2008 and April 7, 2008.

### Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 8).

### Potential to Emit of the Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions 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, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (tons/yr)
PM	0.15
PM10	0.47
SO <sub>2</sub>	0.08
VOC	14.0
CO	4.78
NO <sub>x</sub>	6.18

HAPs	Potential to Emit (tons/yr)
Total HAPs	0.10

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are less than 25 tons per year, and the potential to emit VOC is greater than 10 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.1 and 326 IAC 2-5.5. A registration will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.1 and 326 IAC 2-5.5. A registration will be issued.

**County Attainment Status**

The source is located in Huntington County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.
<sup>1</sup> Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

- (a) Ozone Standards
  - (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
  - (2) 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 ozone. Huntington County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Huntington County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.
- (c) Other Criteria Pollutants  
Huntington County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (d) Fugitive Emissions  
Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, fugitive emissions are not counted toward the determination of PSD applicability.

### Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.15
PM10	0.47
SO <sub>2</sub>	0.08
VOC	14.0
CO	4.78
NO <sub>x</sub>	6.18
Combination HAPs	0.10

This existing source is not a major stationary source because no regulated pollutant is emitted at a rate of 250 tons per year or greater 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.

### Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This status is based on all the information provided by the source in the application for this Registration.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this registration for this source.
- (b) The requirements of 40 CFR 60, Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971), Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units), and Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) are not included in this registration for this source because the boiler was constructed in 1966, prior to the applicability dates in these rules, and has a heat input capacity less than 10 MMBtu per hour.
- (c) The requirements of 40 CFR 60, Subpart K (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978) and Ka (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction,

Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984) are not included in this registration because the storage tanks all have capacities less than 40,000 gallons.

- (d) The requirements of 40 CFR 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984) are not included in this registration because the storage tanks all have capacities less than 75 cubic meters.
- (e) The requirements of 40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) are not included in this registration because the emergency fire pump was constructed prior to July 1, 2006.
- (f) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this registration for this source.
- (g) The requirements of 40 CFR 63, Subpart EEEE (National Emission Standards for Hazardous Air Pollutants for Organic Liquids Distribution) are not included in this registration because this source is not a major source of HAPs.
- (h) The requirements of 40 CFR 63, Subpart FFFF (National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing) are not included in this registration because this source is not a major source of HAPs.
- (i) The requirements of 40 CFR 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) are not included in this registration because pursuant to 40 CFR 63.6590(b)(3), an existing emergency stationary RICE does not have to meet the requirements of this subpart or subpart A of this part. The emergency fire pump is an existing emergency stationary RICE.

### **State Rule Applicability – Entire Source**

#### **326 IAC 2-2 (Prevention of Significant Deterioration)**

This source does not have the potential to emit 250 tons per year or more of any regulated pollutant. Therefore, it is not subject to the requirements of 326 IAC 2-2.

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

This source is not a major source of Hazardous Air Pollutants; therefore, none of the facilities at this source are subject to the requirements of 326 IAC 2-4.1.

#### **326 IAC 2-6 (Emission Reporting)**

This source is located in Huntington County, is not required to operate under a Part 70 permit, and emits less than five (5) tons per year of lead. Therefore, pursuant to 326 IAC 2-6-1(b), the source is only subject to additional information requests as provided in 326 IAC 2-6-5.

#### **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, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) 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 6-4 (Fugitive Dust Emissions)**

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

**326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)**

This source is not a source of fugitive particulate matter emissions. Therefore, the requirements of 326 IAC 6-5 are not applicable.

**326 IAC 8-1-6 (New Facilities; General Reduction Requirements)**

None of the facilities at this source have the potential to emit 25 tons per year or more of VOC. Therefore, none of the facilities at this source are subject to the requirements of 326 IAC 8-1-6.

**State Rule Applicability – Natural Gas Combustion**

**326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)**

The natural gas-fired air make-up heating units are not sources of indirect heating; therefore, they are not subject to the requirements of 326 IAC 6-2. The natural gas-fired boiler is a source of indirect heating that was constructed in Huntington County prior September 21, 1983. Pursuant to 326 IAC 6-2-3(a), particulate emissions from the natural gas-fired boiler shall be limited by the following equation:

$$P_t = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

Where:

$P_t$  = Pounds of particulate matter emitted per million Btu heat input (lb/MMBtu)

$Q$  = Total source operating capacity (1 boiler with a heat input of 8.4 MMBtu/hour)

$C$  = Maximum ground level concentration with respect to distance from the point source at the "critical" wind speed for level terrain. This shall equal 50 micrograms per cubic meter for a period not to exceed a sixty (60) minute time period

$N$  = Number of stacks in fuel burning operation.

$a$  = Plume rise factor which is used to make allowance for less than theoretical plume rise. The value 0.67 shall be used for  $Q$  less than or equal to 1,000 mmBtu/hr heat input.

$h$  = Stack height in feet

$$P_t = \frac{50 \times 0.67 \times 6}{76.5 \times (8.4)^{0.75} \times (1)^{0.25}}$$

$$P_t = 0.53 \text{ lb/MMBtu}$$

The particulate emissions from the natural gas-fired boiler are limited to less than 0.53 pounds per million Btu heat input. Based on a heating value of 1,020 million Btu per million standard cubic foot (MMscf) of natural gas and the AP-42 emission factor for natural gas combustion, the boiler is able to comply with this limit.

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

Pursuant to 326 IAC 6-3-1(b)(1) and (14), the natural gas-fired combustion units are exempt from the requirements of 326 IAC 6-3, because the boiler is a source of indirect heating and the air make-up units have potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

**326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)**

The natural gas-fired combustion units are not subject to the requirements of 326 IAC 7-1.1, because the potential sulfur dioxide emissions are less than twenty-five (25) tons per year and ten (10) pounds per hour.

**State Rule Applicability - Emergency Fire Pump**

**326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)**

The fire pump is not subject to 326 IAC 6-2 because it is not a source of indirect heating.

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

Pursuant to 326 IAC 6-3-1(b)(14), the fire pump is exempt from the requirements of 326 IAC 6-3, because it has potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

**326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)**

The fire pump is not subject to the requirements of 326 IAC 7-1.1, because the potential sulfur dioxide emissions are less than twenty-five (25) tons per year and ten (10) pounds per hour.

**326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))**

The fire pump is not subject to the requirements of 326 IAC 10-5 because it is not a large NOx SIP Call engine.

**State Rule Applicability - Teat Dip Manufacturing, Soap and Sanitizer Mixing, Holding Tanks, and Container Filling**

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

Pursuant to 326 IAC 6-3-1(b)(14), the teat dip manufacturing and soap and sanitizer mixing operations are exempt from the requirements of 326 IAC 6-3, because these operations have potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

**State Rule Applicability - Product Labeling**

**326 IAC 8-2 (Surface Coating Emission Limitations)**

This source is located in Huntington County and the product labeling operations do not have the potential to emit twenty-five tons per year or fifteen pounds per day of VOC. Therefore, the product labeling operations are not subject to the requirements of 326 IAC 8-2.

## **Conclusion**

The operation of this soap and sanitizer manufacturing plant shall be subject to the conditions of the Registration No. 069-23695-00052.

**Appendix A: Emission Calculations  
Emissions from Natural Gas Combustion  
One (1) Boiler**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

**Heat Input Capacity**  
(MMBtu/hour)

**Potential Throughput**  
(MMSCF/year)

8.40

72.1

<b>Emission Factor (lb/MMSCF)</b>	<b>* PM</b> 1.9	<b>* PM10</b> 7.6	<b>SO<sub>2</sub></b> 0.6	<b>** NO<sub>x</sub></b> 100	<b>VOC</b> 5.5	<b>CO</b> 84
<b>Potential To Emit (tons/year)</b>	0.07	0.27	0.02	3.61	0.20	3.03

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

\*\* Emission factor for NO<sub>x</sub> (Uncontrolled) = 100 lb/MMSCF.

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All emission factors are based on normal firing.

**METHODOLOGY**

Potential Throughput (MMSCF/year) = Heat Input Capacity (MMBtu/hour) \* 8760 hours/year \* 1 MMSCF/1020 MMBtu

Potential To Emit (tons/year) = Potential Throughput (MMSCF/year) \* Emission Factor (lb/MMSCF) \* 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations  
Emissions from Natural Gas Combustion  
One (1) Boiler**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

**HAPs - Organics**

<b>Emission Factor (lb/MMSCF)</b>	<b>Benzene</b>	<b>Dichlorobenzene</b>	<b>Formaldehyde</b>	<b>Hexane</b>	<b>Toluene</b>
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
<b>Potential To Emit (tons/year)</b>	7.57E-05	4.33E-05	2.71E-03	6.49E-02	1.23E-04

**HAPs - Metals**

<b>Emission Factor (lb/MMSCF)</b>	<b>Lead</b>	<b>Cadmium</b>	<b>Chromium</b>	<b>Manganese</b>	<b>Nickel</b>
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
<b>Potential To Emit (tons/year)</b>	1.80E-05	3.97E-05	5.05E-05	1.37E-05	7.57E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1.4-2, 1.4-3 and 1.4-4 (July, 1998).

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

**Appendix A: Emission Calculations  
Emissions from Natural Gas Combustion  
Two (2) Air Make-up Heating Units**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

**Heat Input Capacity**  
(MMBtu/hour)

**Potential Throughput**  
(MMSCF/year)

4.5

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<b>Emission Factor (lb/MMSCF)</b>	<b>* PM</b> 1.9	<b>* PM10</b> 7.6	<b>SO<sub>2</sub></b> 0.6	<b>** NO<sub>x</sub></b> 100	<b>VOC</b> 5.5	<b>CO</b> 84
<b>Potential To Emit (tons/year)</b>	0.04	0.15	0.01	1.91	0.11	1.61

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

\*\* Emission factor for NOx (Uncontrolled) = 100 lb/MMSCF.

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All emission factors are based on normal firing.

**METHODOLOGY**

Potential Throughput (MMSCF/year) = Heat Input Capacity (MMBtu/hour) \* 8760 hours/year \* 1 MMSCF/1020 MMBtu

Potential To Emit (tons/year) = Potential Throughput (MMSCF/year) \* Emission Factor (lb/MMSCF) \* 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations  
Emissions from Natural Gas Combustion  
Two (2) Air Make-up Heating Units**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

**HAPs - Organics**

	<b>Benzene</b>	<b>Dichlorobenzene</b>	<b>Formaldehyde</b>	<b>Hexane</b>	<b>Toluene</b>
<b>Emission Factor (lb/MMSCF)</b>	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
<b>Potential To Emit (tons/year)</b>	4.01E-05	2.29E-05	1.43E-03	3.44E-02	6.50E-05

**HAPs - Metals**

	<b>Lead</b>	<b>Cadmium</b>	<b>Chromium</b>	<b>Manganese</b>	<b>Nickel</b>
<b>Emission Factor (lb/MMSCF)</b>	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
<b>Potential To Emit (tons/year)</b>	9.55E-06	2.10E-05	2.68E-05	7.26E-06	4.01E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1.4-2, 1.4-3 and 1.4-4 (July, 1998).

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

**Appendix A: Emission Calculations**  
**Emissions from the Diesel-fired Emergency Generator**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

Maximum Output (hp) 85.0
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	Pollutant					
	PM*	PM10*	SO <sub>2</sub>	NOx	VOC**	CO
Emission Factor (lbs/hp-hr)	2.20E-03	2.20E-03	2.05E-03	0.031	0.003	6.68E-03
Potential to Emit (tons/year)	0.05	0.05	0.04	0.66	0.05	0.14

\*Assume PM emissions equal PM10 emissions.

\*\*Assume VOC emission factor equals TOC emission factor.

Emission factors are from AP-42, Chapter 3.3, Table 3.3-1 (10/96).

**Methodology**

PTE (tons/year) at 500 hrs = Maximum Output (hp) x Emission Factor (lbs/hp-hr) x 500 hrs/yr x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emissions from Soap Mixing**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

Material (Soap Ingredient)	Density (lbs/gal)	Maximum Potential Material Usage (gal/yr)	Weight % VOC	Percent Solvent Loss (%)	PTE VOC (tons/yr)
Ethanol	6.61	162,421	95.0%	2.00%	10.20

Material (Soap Ingredient)	Maximum Potential Material Usage (lbs/yr)	Weight % VOC	Percent Solvent Loss (%)	PTE VOC (tons/yr)
Isopropyl Alcohol	201,371	99.0%	2.00%	1.99
STEOL CS-460	75,643	16.0%	2.00%	0.12

There is no soap mixing emission factor available in AP-42. According to AP-42, Chapter 6.4 (5/83, reformatted 1/95), about 1 or 2 percent of the solvent in paint mixing is lost even under well-controlled conditions. The soap mixing process at this source is similar to paint mixing because the final product is expected to retain a portion of the VOC input. Therefore, the paint mixing emission factor is used to estimate the PTE VOC from the soap mixing process at this source.

The materials used in the soap mixing process do not contain any HAPs.

**Methodology**

PTE VOC (Ethanol) (tons/yr) = Density (lbs/gal) x Maximum Potential Material Usage (gal/yr) x Weight % VOC x Percent Solvent Loss x 1 ton/2,000 lbs

PTE VOC (Other Materials) (tons/yr) = Maximum Potential Material Usage (lbs/yr) x Weight % VOC x Percent Solvent Loss x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emissions from Product Labeling**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

Material	Density (lbs/gal)	Maximum Potential Material Usage (gal/yr)	Weight % VOC	Pounds VOC per Gallon of Coating	PTE VOC (tons/yr)
5135	7.26	2.81	90.0%	6.53	0.01
5100	6.76	63.2	99.0%	6.69	0.21
Videojet Ink	7.17	3.16	76.0%	5.45	0.01
Videojet Makeup Fluid	6.67	101	99.0%	6.60	0.33
<b>Total</b>					<b>0.56</b>

The materials used in the product labeling process do not contain any HAPs. The transfer efficiency is 100%; therefore, there are no particulate emissions expected from this process.

**Methodology**

Pounds VOC per Gallon of Coating (lbs/gal) = Density (lbs/gal) x Weight % VOC

PTE VOC (tons/yr) = Pounds VOC per Gallon of Coating (lbs/gal) x Maximum Potential Material Usage (gal/yr) x 1 ton/2,000 lbs

**Appendix A: Emission Calculations  
Emission Summary**

**Company Name:** Ecolab, Inc.  
**Address:** 970 East Tipton Street, Huntington, Indiana 46750  
**Registration:** 069-23695-00052  
**Reviewer:** ERG/SE  
**Date:** April 9, 2008

**Unlimited Potential to Emit (tons/yr)**

Emission Unit	PM	PM10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	HAPs
Boiler	0.07	0.27	0.02	3.61	0.20	3.03	0.07
Process Heaters	0.04	0.15	0.01	1.91	0.11	1.61	0.04
Emergency Generator	0.05	0.05	0.04	0.66	0.05	0.14	Negligible
Teat Dip Manufacturing <sup>(1)</sup>	Negligible	Negligible	--	--	--	--	--
Soap Mixing <sup>(2)</sup>	Negligible	Negligible	--	--	12.3	--	--
Holding Tanks <sup>(3)</sup>	--	--	--	--	0.73	--	--
Container Filling <sup>(4)</sup>	--	--	--	--	Negligible	--	--
Product Labeling	--	--	--	--	0.56	--	--
<b>Total</b>	<b>0.15</b>	<b>0.47</b>	<b>0.08</b>	<b>6.18</b>	<b>14.0</b>	<b>4.78</b>	<b>0.10</b>

<sup>(1)</sup> The teat dip making process consists of manufacturing iodine-based caustic products that do not contain any VOC or HAPs. UPS water will comprise greater than 90% of the end product. Small amounts of iodine powder may be added to the mixture. Because the amount of solids used is very small, the Permittee expects negligible particulate emissions from this process.

<sup>(2)</sup> A very small amount of solid material may be used in the soap mixing process. However, due to the small amounts used, the Permittee expects negligible particulate emissions from the soap mixing process.

<sup>(3)</sup> After the soap mixing process, the liquid product is pumped into one of 17 storage tanks ranging in size from 1,000 gallons to 5,600 gallons. All of these storage tanks are located inside the building. The PTE VOC shown above was provided by the Permittee and was calculated using TANKS version 4.0.9d for ethanol storage. The Permittee expects that the VOC emissions from the product holding tanks would be much less than tanks storing ethanol.

<sup>(4)</sup> In the container filling process, the product is transferred from the holding tanks through closed piping to a fill line where the liquid is filled into a container. Due to the consistency of the final products, no particulate emissions are expected. The Permittee expects VOC emissions to be negligible, because VOC has already been emitted in the soap mixing process and from the holding tanks.