



**Mitchell E. Daniels, Jr.**  
Governor

**Judith A. Monroe, M.D.**  
State Health Commissioner

**Indiana State  
Department of Health**  
*An Equal Opportunity Employer*

March 10, 2006

Christopher A. Limcaco, P. E., President  
Algaewheel, Inc.  
1426 West 29th Street, Suite 206  
Indianapolis, IN 46208

Re: Interim Approval for Installation of Algaewheel, Inc.,  
bacpac™ Units in Indiana

Dear Mr. Limcaco:

This letter is in response to your request that the Indiana State Department of Health (ISDH) approve the installation of Algaewheel, Inc., bacpac™ units. The bacpac™ units precede all treatment components of residential or commercial on-site sewage disposal systems constructed full-sized in accordance with 410 IAC 6-10 or 410 IAC 6-8.1.

Based on review of the design information submitted to the agency, the Indiana State Department of Health acknowledges that if your bacpac™ units are installed so that all wastewater from these units discharges to the septic tank of an approved residential or commercial on-site sewage disposal system, it should not compromise operation of that sewage disposal system. The Indiana State Department of Health believes that your bacpac™ unit has a reasonable and substantial probability of satisfactory operation, as required by our rules.

Interim approval is granted by the Indiana State Department of Health for the installation of bacpac™ units to precede all treatment components of residential or commercial on-site sewage disposal systems, subject to the following conditions:

1. Initially, your bacpac™ units can be installed as part of no more than fifty (50) total full-sized commercial or residential on-site sewage disposal projects.
2. Your bacpac™ units must be installed upstream of the first septic tank(s) in each residential or commercial on-site sewage disposal system.
3. The commercial or residential on-site sewage treatment and disposal systems downstream of the bacpac™ units shall be designed in accordance with the latest ISDH rules for on-site wastewater treatment and disposal systems. ISDH approved technologies along with their associated reductions in field size may be utilized as part of the full-sized system downstream of the bacpac™ units (i.e. recirculating media filters, infiltrator chambers, constructed wetlands, etc.).

4. As described in the literature you provide about installation of your bacpac™ units, the final compartment of the last septic tank to be preceded by a bacpac™ unit shall be fitted with an effluent filter satisfactory to Algaewheel, Inc.
5. A permit must be obtained for construction of any commercial on-site sewage disposal system, and the bacpac™ unit(s) that will precede it, either from ISDH or from the local health department having jurisdiction if the commercial approval has been delegated to the local health department in accordance with 410 IAC 6-10; likewise, a permit must be obtained for construction of any residential on-site sewage disposal system, and the bacpac™ unit(s) that will precede it, from the local health department having jurisdiction.
6. In the case of bacpac™ unit(s) to be installed under permit from a local health department, at the time of application to the local health department Algaewheel, Inc. shall notify ISDH of the intended installation via e-mail to: [adunn@isdh.IN.gov](mailto:adunn@isdh.IN.gov). Prior to installation of the bacpac™ unit(s), Algaewheel, Inc. shall provide to the ISDH a copy of the permit that was issued by the local Health department.
7. Algaewheel, Inc., shall have the wastewater from at least twenty (20) of the first fifty (50) on-site sewage disposal systems fitted with bacpac™ units, sampled and tested in accordance with the attached monitoring requirements (Attachment A). The results of those measurements and analyses shall be submitted to ISDH and to the local health department having jurisdiction on a monthly basis. At least six months of data must be submitted for each of the sampled units.
8. Algaewheel, Inc., shall record all service and maintenance provided to each of its bacpac™ units and will submit copies of those records to the ISDH at the end of the sampling period.
9. Prior to the end of the sampling period, Algaewheel, Inc. shall submit to ISDH copies of its operation and maintenance manual for the bacpac™ units.
10. Algaewheel, Inc. shall immediately inform the ISDH of any failures of the bacpac™ units or any other installed system components, and shall provide the ISDH with an analysis of any failures.

Within thirty (30) days of the submission of the data described under paragraph number seven above, the ISDH will analyze the data and make a final determination on application for the bacpac™ unit. Should the results of those analyses show that the bacpac™ unit does not cause sewage overflows and does not compromise the performance of the septic tank, the ISDH will approve the bacpac™ unit to precede all treatment components of full sized residential or commercial on-site sewage disposal systems. Should the results of those analyses show that the bacpac™ unit is an effective sewage treatment unit, the ISDH may also approve the bacpac™ unit for sewage treatment purposes pursuant to experimental sewage treatment rules.

If Algaewheel, Inc., has installed fifty (50) bacpac™ units prior to the end of the sampling period and issuance of a final approval, Algaewheel, Inc., may request that installation of additional units be approved pending final approval of the bacpac™ unit.

This approval may be revoked or modified by the department for non-compliance or if it is documented that it would not be in the best interests of public health for installations to continue. Any revocation or modification of this approval is subject to administrative review pursuant to Indiana Code § 4-21.5.

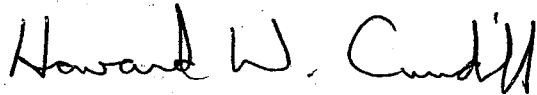
If you wish to request review of this Approval, you must petition for review in writing, demonstrating that:

1. You are a person to whom the Approval is specifically directed.
2. You are aggrieved or adversely affected by the Approval; or
3. You are entitled to review under any law.

Your request for review must be filed in writing with the Director, Consumer Protection, Indiana State Department of Health, 2 North Meridian Street, Indianapolis, Indiana 46204, within fifteen days of the receipt of this Approval Letter.

If you do not object to this Approval, you do not need to take any further action.

Sincerely,



HOWARD W. CUNDIFF, P. E., DIRECTOR  
CONSUMER PROTECTION

cc: Gregg Romaine, Esq.  
Carmen L. Quintana  
Bob Hilton  
Alan Dunn

Attachment

## **ATTACHMENT A**

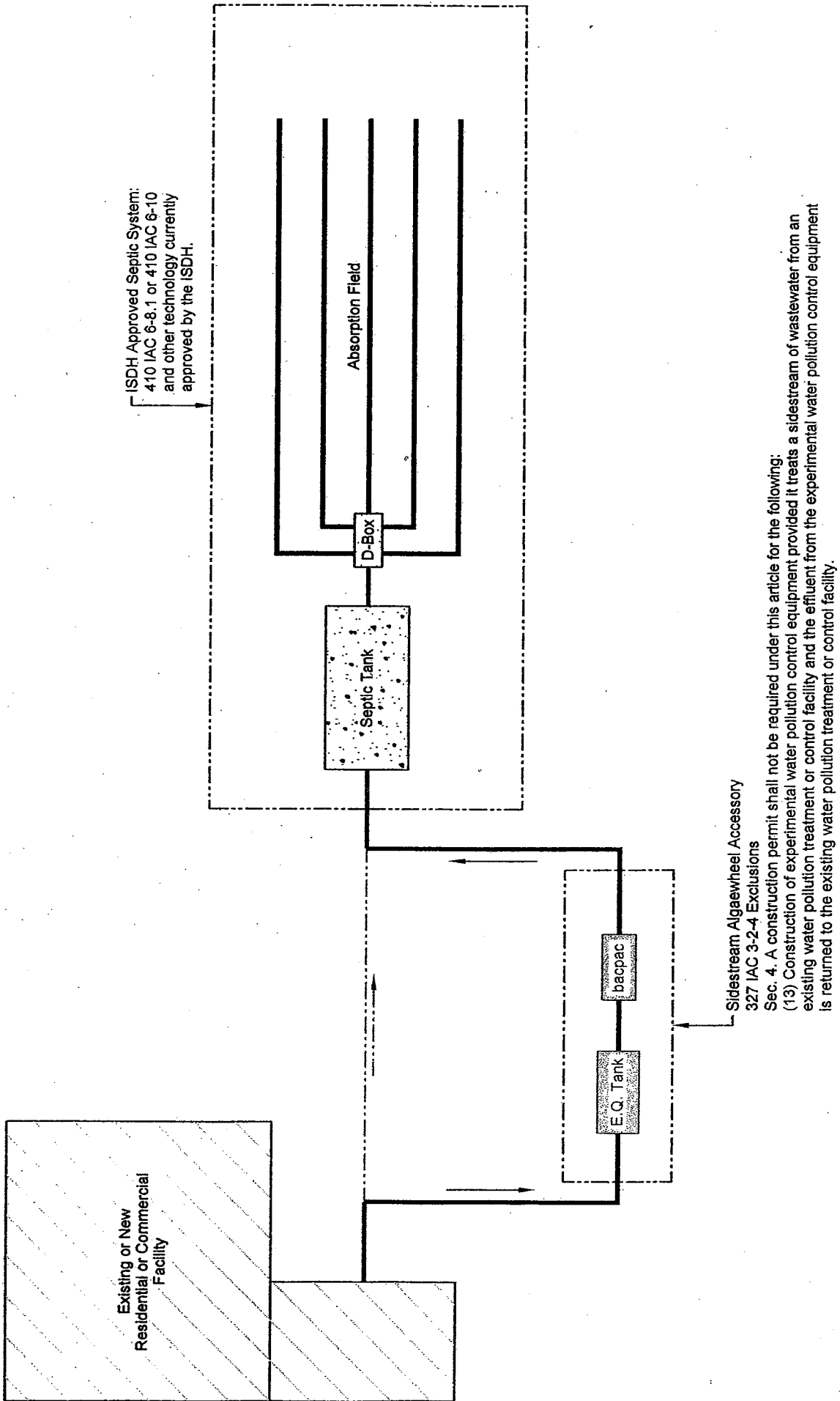
### **Monitoring Requirements for the Algaewheel, Inc., BacPac™ Units**

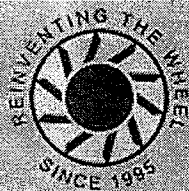
1. Wastewater influent, effluent from the BacPac™ unit, and effluent from the septic tank(s) must be sampled and analyzed every month during the first six months of operation, for:
  - pH;
  - temperature;
  - BOD<sub>5</sub> (5-day Biochemical Oxygen Demand);
  - Total Suspended Solids;
  - Dissolved Oxygen;
  - Ammonia;
  - Total Kjahl Nitrogen;
  - Nitrate;
  - Total Nitrogen;
  - FOG (Fats, Oils, and Grease), if an outside grease trap is utilized.

All analysis shall be performed in accordance with Standards Methods for the Examination for Water and Wastewater, latest edition. Reports of analysis must be submitted to the Indiana State Department of Health (ISDH) and to the local health department having jurisdiction no later than 30 days after each sample is taken.

2. Wastewater flow must be measured monthly at the same time influent and exfluent samples are taken. Average daily flow can then be computed based on the number of days the facility was in use for that period. Pump run time meters and event counters will be used in conjunction with pump drawdown tests to confirm pumping rates to calculate flow rates.
3. Each monitoring well within the absorption field or mound shall be checked for ponded water on the same day that sampling is conducted in conformance with Item No.1, above. If ponding is occurring, the depth from ground surface to ponded water shall be recorded and reported to ISDH and to the local health department having jurisdiction, along with the applicable report of analysis.

# bacpac





**Algaewheel, Inc.**  
THE NEW CONCEPT IN WASTEWATER TREATMENT

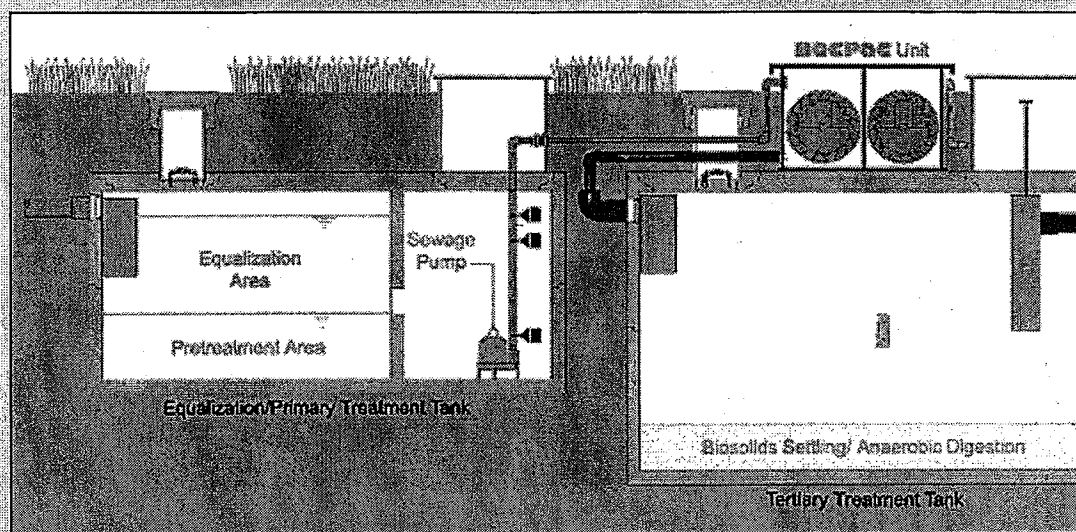
"Lifetime Protection For Your Septic System"

- HOME
- SYSTEM APPLICATIONS
  - » On-Site
  - » Decentralized
- SERVICES
- PROCESS DESCRIPTION
- R & D
- S.E.R.F.
- ABOUT US
- SUBMIT YOUR PROJECT DATA
- CONTACT US

## On-Site Advanced Wastewater Treatment

With 33% of new construction requiring on-site wastewater treatment and 25% of the nation's households currently using an on-site system, it is clear that the industry is in need of an on-site treatment technology that provides a property owner with a cost effective way to protect their drinking waters, surface waters, and natural resources. The Algaewheel BACPAC system was specifically designed and engineered to be effective and environmentally friendly solution for residential and commercial property owners seeking wastewater treatment alternatives.

BACPAC system configuration (Move your mouse over the diagram for detailed descriptions.)



### BACPAC™ System Advantages for Onsite Applications:

- Ecologically based technology requires no chemicals or mechanical treatment equipment
- Affordable initial investment
- Simple installation lowers cost to property owner and improves contractor profitability
- Space saving compact design allows for optimal land use
- Only onsite system that provides primary, secondary, and tertiary treatment
- Complete eco-treatment that provides flexibility in disposal of clean effluent to absorptions fields or discharge
- Easily expandable modular design reduces property owners' future expansion costs
- The enclosed design prevents storm water infiltration that typically results in drainage field overflow eventual system failure
- Unaffected by hydraulic and organic shock loads and won't "dry out" or "die out" with varying flow
- Won't clog with solids
- Virtually maintenance-free, quiet, and energy-efficient operation keeps operational costs low.

### Statistics compiled by the USEPA score the underlying concerns about convent onsite or septic systems in the country today:

- Onsite wastewater-treatment (septic) systems collect, treat, and release about 4 billion gallons of effluent from an estimated 26 million facilities nationwide