



Purpose and Applicability of Water & Wastewater Regulations

Many small businesses generate wastewater that must be discharged or treated in accordance with local, state, and/or federal requirements. This chapter discusses wastewater permitting, operator training requirements, and also identifies wastewater regulatory agencies and common water and wastewater issues.

Goals of the Wastewater Permit Programs

Protecting our water resources is both an environmental and public health necessity. At the federal level, the U.S. Environmental Protection Agency, the U.S. Department of Interior, the U.S. Department of Agriculture, and the U.S. Army Corps of Engineers each have a role in protecting Indiana's water resources. In Indiana, the Indiana State Department of Health (ISDH), the Indiana Department of Natural Resources (DNR), and the Indiana Department of Environmental Management's (IDEM's) Office of Water Quality (OWQ) and Office of Land Quality (OLQ) share that responsibility.

■ Indiana State Department of Health

ISDH is responsible for providing training and technical assistance to county health departments regarding residential septic systems. ISDH also issues construction permits to all commercial on-site non-discharging sewage disposal systems. The various county health departments issue residential septic system permits. Some counties also may require a county-issued construction permit for commercial on-site non-discharging sewage disposal systems.

■ Indiana Department of Natural Resources

The mission of the Indiana Department of Natural Resources is to protect, enhance, preserve, and wisely use natural, cultural, and recreational resources for the benefit of Indiana's citizens through professional leadership, management, and education. To satisfy such a broad and



FOR MORE INFORMATION

- Wastewater permitting for industrial discharges and storm water discharges
- Industrial storm water discharges
- Storm water run-off associated with construction and land-disturbing activities

www.idem.IN.gov/4896.htm



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diverse responsibility, the department is divided into two distinct areas of responsibility: the Regulatory Management Team and the Land Management Team. The Division of Water issues permits for:

1. Alteration of the bed or shoreline of a public freshwater lake.
2. Construction or reconstruction of any ditch or drain that has a bottom depth lower than the normal water level of a freshwater lake (of 10 acres or more) and is within half a mile of the lake.
3. Construction within the floodway of any river or stream.
4. Placing, filling, or erecting a permanent structure in a navigable waterway; water withdrawal from a navigable waterway; or material extraction from a navigable waterway.
5. Extraction of mineral resources from a navigable waterway or under the bed of a navigable waterway.
6. Construction of an access channel.

DNR's Division of Reclamation is responsible for implementing the federal Surface Mining Control and Reclamation Act (SMCRA). The Division of Reclamation issues permits that allow coal mining companies to mine coal in Indiana. The Division of Reclamation works closely with IDEM to protect the waters of the state through the issuance and enforcement of construction permits and National Pollutant Discharge Elimination System (NPDES) permits. The Division of Reclamation has primary responsibility for the compliance and enforcement of all coal mining and wastewater permits.

■ Indiana Department of Environmental Management

IDEM's Office of Water Quality implements and enforces the federal Water Pollution Control Act (as amended), which is also referred to as the Clean Water Act. With oversight from U.S. EPA Region 5, the Office of Water Quality's Permits Branch assumed responsibility for this permit program in 1975.

The Clean Water Act prohibits the discharge of a pollutant into the "waters of the United States" as a point source discharge without an NPDES permit. NPDES is the national program for issuing, modifying, revoking and reissuing, terminating, denying, monitoring, and enforcing permits for the discharge of pollutants from point sources and imposing and enforcing pretreatment requirements by the U.S. EPA administrator or IDEM commissioner.

When IDEM assumed responsibility for managing the NPDES program in 1975, its jurisdiction included all the waters of the state of Indiana. Waters of the state means such accumulations of water, surface and underground, natural and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this state. However, the term does not include any private pond, or any pond, reservoir, or facility built for reduction or control of pollution or cooling of water prior to discharge unless the discharge causes or threatens to cause water pollution.

The Office of Water Quality issues NPDES permits to help ensure that a variety of wastewater dischargers in Indiana comply with the Clean Water Act. It also issues construction permits for facilities needing to construct, install, or modify any water pollution treatment control facility or sanitary sewer.

The Office of Land Quality implements and enforces the Confined Feeding Operations Rules in 327 IAC 19 as well as the Concentrated Animal Feeding Operations Rules in 327 IAC 15-16. OLQ issues permits and inspects these agricultural farms. The Emergency Response section of IDEM is contained within OLQ as well. Emergency Response is charged with protecting public health and mitigating harm during spill events and environmental emergencies. They plan, train, and respond with local, state, and federal agencies to achieve the best results possible.

The Regulated Community: Who Needs an NPDES Permit?

An industrial business that elects to discharge process water to a water of the state must obtain an NPDES discharge permit. The NPDES discharge permit also serves as an operating permit, under which the owner/operator generates and/or collects wastewater for discharge. In most cases, in order for that discharge to meet the standards required by the NPDES discharge permit, it first must be treated.

Should a business elect to increase its capacity or modify its wastewater processing equipment used for wastewater treatment, modification to an existing NPDES permit could be required. The business should contact the Office of Water Quality's Permits Branch. Those persons proposing to build or operate an actual facility which may need a permit should consult the Indiana Code, the Indiana Administrative Code, and the Office of Water Quality at (317) 232-8670 or (800) 451-6027, ext. 2-8670 for a more complete discussion of permitting requirements within Indiana.

For more detailed information, including information on pretreatment permits, please refer to IDEM's website at www.idem.IN.gov/4869.htm.

Storm Water Discharges from Industrial and Construction Sites

Storm water run-off from sites involved in industrial or construction activities may require a general or individual storm water run-off permit from the Surface Water, Operations, and Enforcement Branch in IDEM's Office of Water Quality.

Cooling Water Discharges

Anyone discharging non-contact cooling water—water that is used for the sole purpose of removing unwanted heat, does not come into contact with industrial processes and materials, and is not co-mingled with other wastewater—from a point source into the waters of the state must first obtain an NPDES permit. For detailed information, refer to IDEM's website at www.idem.IN.gov/5914.htm.

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Discharges Associated with Certain Petroleum-Related Activities

Wastewater discharges associated with certain petroleum-related activities may be required to obtain a general NPDES permit under 327 IAC 15, Rules 9, 10, and 11. Petroleum related activities include petroleum production terminals, ground water remediation for gasoline, and wastewater associated with hydrostatic testing of commercial pipelines. For more detailed information, refer to IDEM's website at www.idem.IN.gov/5915.htm.

Permitting Wastewater Discharge from Mines and Quarries

You need an NPDES general permit from IDEM if you are planning on discharging, or are currently discharging, wastewater from a:

- Coal mine
- Coal processing facility
- Coal mine reclamation area
- Sand quarry
- Gravel quarry
- Dimensional stone quarry
- Crushed stone quarry

Anyone planning a point source discharge of wastewater or run-off from a coal mine, coal processing facility, or coal mine reclamation area, or from a sand, gravel, dimensional stone, or crushed stone quarry, must first secure an NPDES permit. For more detailed information, refer to IDEM's website at www.idem.IN.gov/5917.htm.

Types of Discharge Permits Issued by IDEM's Office of Water Quality

The Permits Branch of IDEM's Office of Water Quality issues several types of NPDES permits. For more information, please refer to IDEM's website at www.idem.IN.gov/4894.htm.

Publicly Owned Treatment Works (POTWs) and Municipal, Semi-Public, Federal, or State Permits

Purpose:

POTWs treat and disinfect domestic wastewater prior to discharge.

Types:

- **Major Discharge:**
More than one million gallons/day and/or a population equivalent (PE) of 10,000 or greater
- **Minor Discharge:**
Less than one million gallons/day and/or a PE of less than 10,000 (usually semi-public, minor municipal, state, or federal dischargers)

- **Semi-Public:**
Any facility not municipally, state, or federally owned
- **State Owned:**
A facility owned or managed by a state agency
- **Federal:**
A facility owned by a federal agency

Prior to enactment of the 1972 federal Water Pollution Control Act, many municipalities were served by primary sewage treatment plants that did little more than remove solids. After 1972, all POTWs were required to provide secondary treatment.

Industrial Wastewater Treatment Facilities and Other Industrial Discharge Permits

Purpose:

Industrial NPDES permits limit the levels of contaminants in industrial process water that may be discharged into waters of the state. Individual industrial NPDES permits cover these types of discharges:

Types:

- Process wastewater from existing dischargers (requires NPDES application form 2C).
- Process wastewater from new sources and new dischargers (requires NPDES application form 2D).
- Non-process wastewater from new and existing dischargers (e.g., noncontact cooling water) (requires NPDES application form 2E).
- Storm water run-off associated with industrial activity discharges, discharges from certain facilities subject to federal storm water effluent limitations guidelines, or discharges into receiving streams and waters listed as outstanding state resource waters or as exceptional use streams (requires NPDES application form 2F). Other run-off associated with an industrial activity is eligible for a Rule 6 general NPDES storm water run-off permit.
- Public water supply for the discharge associated with treating water for a public drinking water system.
- Animal feeding operation (AFO) discharges—including confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs)—require *CFO/CAFO Application Packet* (State Form 55051) available at <http://forms.IN.gov>.



FOR MORE INFORMATION

- Dredging permits
- Wastewater facility construction permits

www.idem.IN.gov/4221.htm

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Application forms are available on IDEM's Office of Water Quality website at www.idem.IN.gov/4874.htm.

Animal Feeding Operation Discharges

Animal feeding operations (AFOs), including CFO and CAFO sized farms, that discharge are point sources subject to the NPDES permit program under 327 IAC 15-16. The program regulates construction, expansion, operation, discharges, land application activities, record keeping, self-monitoring, closure, and transfers.

CFOs and CAFOs that do not discharge are subject to the Confined Feeding Program under 327 IAC 19. The program regulates construction, expansion, operation, land application activities, record keeping, self-monitoring, closure, and transfers. For more information, please refer to IDEM's website at www.idem.IN.gov/4994.htm.

AFOs with fewer animals than the CFO size threshold in 327 IAC 19-2-7 and that do not discharge are not regulated by either program.

IDEM's Office of Land Quality administers the NDPEs CAFO Individual Permit and Confined Feeding Programs. For more information, please contact the Confined Feeding Permits Section at (317) 232-4473 or (800) 451-6027, ext. 2-4473, or refer to IDEM's website at www.idem.IN.gov/4994.htm.

Aquaculture Discharges

Aquaculture, or concentrated aquatic animal production facilities, as defined in 40 CFR 122.24, also are point sources subject to NPDES permit requirements. However, the need for such a permit is based on an on-site inspection that determines whether a permit is required, based on such factors as:

- The location and quality of the receiving waters;
- Whether the facility is a significant contributor of pollution to waters of the state; or
- If the holding, feeding and production capacities of the facility are such that it is determined that the facility does not need an NPDES permit because:
 - The aquatic animals are raised in a structure that discharges less than 30 days per year; and
 - Produces less than 20,000 pounds of cold water, or 100,000 pounds of warm water aquatic animals per year.

Discharges into aquaculture projects, as defined in 40 CFR 122.25, also are subject to the NPDES permit program. However, this applies only to those operations which feature the confinement of aquatic animals within the waters of the state or the waters of the United States.

Industrial Wastewater Pretreatment Permits (IWPPs)

IWPPs are for industrial process wastewater that is discharged into a municipal wastewater collection system. Treatment is sometimes required to reduce contaminants to meet permit limits, but the effluent is discharged into a municipal sewer rather than directly into a stream or other body of water. As a result, this wastewater receives further treatment at the municipal facility prior to being discharged to waters of the state.

Currently, 47 Indiana municipalities have U.S. EPA-delegated pretreatment programs in place, under which they regulate industrial discharges to their municipal wastewater collection systems. In addition, IDEM issues IWPPs to industries in those towns and cities that do not have a local pretreatment program in place. IWPP effluent standards are derived from:

- Federal categorical standards, which are either “industry specific,” or based on “units per gallon” of effluent.
- POTW calculations, which derive effluent limits by back calculating the amount of pollutant loads available to industry, taking into account the available additional capacity of the POTW before its capabilities are exceeded. This method is frequently used for smaller POTWs.
- Local limits established in a pretreatment program ordinance. This option is used for non-categorical industries by the 47 municipalities with U.S. EPA-approved pretreatment programs in place. However, in some instances, smaller communities may also have local limits that are used even though IWPPs are issued by IDEM.

■ Obtaining an Individual NPDES Permit

What Information Does the Permit Application Request?

All IDEM applications require relevant administrative information. Below is a partial list of some technical information also requested.

1. For Industrial Facilities:

- Process-related contaminants that can be expected (use Standard Industrial Classification [SIC] code).
- Highest monthly average flow.
- Treatment technologies applied.
- Operational and compliance history.
- Production data from past two years.
- Effluent toxicity for major discharges.

2. For POTWs:

- Treatment capacity for which the facility was designed.
- Loading rates (i.e., rate at which each component of a facility is designed to operate).
- Treatment technologies applied.
- Operational and compliance history.
- Plant design and percent removal for:
 - Biological Oxygen Demand (BOD),
 - Suspended solids, and
 - Nitrogen and phosphorus (when necessary).
- Characteristics of contributing industrial waste (if any).
- How treated effluent will be disinfected.

How is the Individual NPDES Permit Application Reviewed and the Permit Written?

The IDEM permit writer must develop a permit based on the effluent limits, which will be required at the outfall (the end of the discharge pipe) and in the mixing zone of the receiving stream (where the effluent mixes with the stream). Those limits are determined by a wasteload allocation analysis, using the data describing the receiving stream in a model, or simulation, to determine the level of pollutants that can be discharged without adverse effect on the receiving stream, especially during low flow conditions.

Once the modelers have calculated proposed effluent limits, the IDEM permit writer has two primary tasks:

1. To collect the information necessary to develop permit conditions, such as the effluent limits, whole effluent toxicity testing, proposed monitoring frequency, sample types, schedule of compliance (in the event compliance is required) and best management practices; and
2. To develop and justify the monitoring frequency, sampling, and compliance conditions of the permit.

What Does an Individual NPDES Permit Do?

Although individual NPDES permits are somewhat unique, they each:

- Authorize discharges, which are limited to levels set by the permit.
- Set limits for pollutants in the discharges.
- Require monitoring and reporting by the permittee of discharges of specific contaminants at specific outfalls.
- Establish sampling protocol and frequencies.

- Require record retention.
- Outline the permittee's duty to furnish additional relevant information and allow inspections.
- Define upset conditions and establish required compliance schedules for bringing the facility back into compliance after an upset.
- Establish penalties for permit violations and requirements for mitigating adverse impacts on the environment.
- Establish penalties for the falsification of reports.
- Provide a rationale for effluent limits.
- May require other actions, such as the development of combined sewer overflow plans and/or storm water pollution prevention plans, or industrial pretreatment program development and implementation.

How are the Requirements of an Individual NPDES Permit Usually Met?

For Municipal Publicly Owned Treatment Works (POTWs):

Streams have naturally occurring microorganisms capable of breaking down, or consuming, contaminants. This, along with the rate and volume of stream flow, oxygen level, temperature and other naturally occurring conditions, enable streams to break down, absorb or cleanse themselves of contaminants.

Modern municipal POTWs mimic this ability. They depend on, and are limited by, the same balance of loading capacity, volume of flow, and other factors as any stream. However, they are designed to manipulate all these factors in such a way as to optimize the process and, thus, maximize the volumes of contaminated wastewater that can be treated within the limits of this otherwise natural phenomenon. Thus, the level of contaminant breakdown, adsorption, and self-cleansing that might occur during 20 or 30 miles of downstream flow can instead be compressed into the volume of a POTW. It functions like "a stream in a box," enabling the POTW to break down and remove contaminants, but before they reach the receiving stream.

All municipal POTWs utilize a secondary treatment process to meet effluent limits contained in their NPDES permit. Most municipal POTWs may use a combination of the following treatment techniques:

- **Preliminary Treatment:**
This usually consists of processes that remove inorganic grit and sand from the wastewater. In addition, preliminary treatment processes include fine screening to remove large solids. Grinders also reduce the size of larger solids.

- **Primary Treatment:**

Some POTWs have a primary treatment process, usually clarifiers, whose main function is to remove the settleable and floatable solids. Approximately 30 percent of the biochemical oxygen demand and 50 percent of the suspended solids are removed at this stage. These solids are usually sent to a sludge digestion process, while the wastewater is sent to the secondary treatment process.

- **Secondary Treatment:**

All POTWs use some form of secondary treatment. It is an aerobic process, thus oxygen must be supplied to encourage the growth of an adequate population of the proper microorganisms. Although the medium in which they are maintained varies, these microorganisms are central to both the activated sludge (suspended growth), or trickling filters, and the rotary biological contactors (fixed film) secondary treatment processes. These processes are followed by the use of secondary clarifiers, which enable clear water to be separated from the suspended solids utilized in the secondary treatment process.

Some POTWs, especially facilities designed for smaller communities, rely on a pond or lagoon system for secondary treatment. These facilities are designed to provide longer detention times—usually 30 to 120 days—during which microorganisms break down solids and reduce biochemical oxygen demand levels. Other POTWs are required to meet effluent limits more stringent than can be provided by typical secondary treatment processes. These facilities use additional processes to remove suspended solids, such as sand or multimedia filtration or nutrient (ammonia and/or phosphorus) removal.

All POTWs must meet bacteria requirements of their treated effluent prior to discharging it into the receiving waters. Some systems require disinfection which reduces the number of disease-causing microorganisms to levels that are acceptable to protect human health and the aquatic environment. The majority of POTWs use chlorination to disinfect their effluent and then dechlorinate (usually with sulfur dioxide) prior to discharge. An increasing number of POTWs are changing from chlorination to ultraviolet (UV) disinfection. The treated effluent is subjected to an intense bombardment by UV light, which kills disease-causing microorganisms.

How do Industrial Treatment (or Pretreatment) Facilities Usually Meet the Requirements of an Individual NPDES Permit?

Industrial wastewater that is sent to a POTW can be treated first, to bring it into compliance with local or state industrial wastewater pretreatment program (IWPP) requirements. Industrial wastewater generators not participating in pretreatment programs are required to obtain an individual industrial NPDES permit and treat their wastewater prior to discharging it to waters of the state. Whether they discharge under an individual NPDES permit, or participate in an IWPP program, industrial users generate a wide

range of differing types of wastewaters, which may require treatment from a broad array of treatment options. However, the fact that each regulated facility has near total control of its manufacturing process helps reduce substantially the anticipated treatment needs and associated treatment options that likely will be required for compliance with their pretreatment or NPDES discharge permit. The array of treatment options for industrial wastewater treatment includes:

- Physical techniques, such as filtration, distillation, electro dialysis, evaporation, freezing, microstraining, reverse osmosis, sedimentation, or solvent extraction.
- Chemical techniques, such as oxidation, precipitation, coagulation, disinfection, electrochemical treatment, ion exchange and neutralization.
- Biological techniques (such as what POTWs use), such as activated sludge, waste stabilization ponds and/or land application of wastewater or solids.

For a more complete discussion of permitting requirements within Indiana, those persons proposing to build or operate a facility should consult the Indiana Code and Indiana Administrative Code and contact the Industrial NPDES Permits Section of IDEM's Office of Water Quality at (317) 232-8709 or (800) 451-6027, ext. 2-8709.

Antidegradation

The purpose of the antidegradation standards that were implemented in 2012 were to protect water quality for downstream users. The antidegradation rules apply to businesses with a new or increased loading of a regulated pollutant to a surface water of the state resulting from a deliberate action. The antidegradation must include information regarding the discharge, an explanation as to why the discharge is necessary, an outline of treatment alternatives, and the anticipated social and economic benefit of the discharge. There are exemptions to the rule if:

- The discharge is temporary or less than 12 months,
- The additional loading is de minimis values,
- The additional loading is covered in the capacity of an existing permit,
- A water quality improvement project is being implemented or funded, or
- A donation is being made to the Outstanding State Resource Water Improvement Fund.

For more information, please refer to 327 IAC 2-1-3 or contact the Office of Water Quality at (317) 233-5747 or (800) 451-6027, ext. 3-5747.

■ General NPDES Permits

The Office of Water Quality's general NPDES permits-by-rule address certain classes or categories of point source discharges. Those opting for coverage of a new activity under a general permit must secure that coverage prior to engaging in that regulated activity.

To obtain a general permit, the applicant is required to file a written notification, or notice of intent (NOI), indicating to OWQ the intention to comply with the terms of a specific general permit rule in lieu of applying for an individual NPDES permit. The NOI must be submitted at least 150 days prior to any discharge unless an extension has been granted by the commissioner or in accordance with the specific NPDES general permit. Upon receipt of the NOI, and any associated fees, IDEM reviews it for completeness and applicability. The NOI must include the name and address of the facility associated with the proposed discharge, the Standard Industrial Classification code or a description of the project, the location of the facility in latitude and longitude, the name of the receiving waters, a description of how the facility complies or will comply with the permit rules, and any additional information required by the applicable general permit rule.

The NOI must be accompanied by a copy of a public notice published by the applicant in a local newspaper of general circulation with the exception of Rule 14 for on-site residential sewage discharging from disposal systems within Allen County On-Site Wastewater Management District. That public notice must announce both the applicant's intent to seek IDEM's approval to discharge under the general rule that specifically addresses their proposed new activity and the applicant's intent to comply with the conditions of the general permit rule associated with that discharge.

There are no public meeting requirements since the public had opportunity for comment during the rulemaking procedure that established the permit rule. However, anyone seeing the public notice may appeal to the Office of Environmental Adjudication regarding the applicability of that general permit to the specific facility proposed by the applicant.

If the facility qualifies, coverage under the general permit is issued to the applicant. The approval of coverage includes a facility identification number, describes the period of coverage, and contains a copy of the general permit rule which describes the conditions that must be met for the permittee to be in compliance. Those conditions can include requiring the development and implementation of a compliance plan as well as record keeping, monitoring, reporting, testing and/or inspecting.

IDEM issues letters notifying applicants of general permit coverage on the 15th day of each month. The approval to operate under the general permit becomes effective 18 days later after affected parties have had the opportunity to appeal these approvals. Coverage under storm water run-off general permits Rule 5 (construction activity) and Rule 6 (industrial activity), Rule 13 (municipal separate storm sewer systems) and Rule 14 (Allen County sewage disposal) commences with the submittal of the NOI. Cover-

age under Rule 16 (CAFO) commences according to 327 IAC 5-3 or within 180 days of receipt of the application.

A facility can operate under an individual NPDES permit, and one or more applicable general permits. However, discharges to a receiving stream identified as an outstanding state resource water or an exceptional use stream require an individual NPDES permit and are not eligible for a general permit-by-rule. If it is determined that an applicant who filed an NOI for a general permit needs to instead file for an individual NPDES permit, they will be notified of such and will have 120 days to submit an application for an individual permit. General permits are non-transferrable.

Storm Water General Permits

1. **Construction Activity (Rule 5):**

Any persons involved in construction activities that result in land disturbance of one acre or more may be required to obtain a storm water run-off permit from IDEM's Office of Water Quality.

2. **Industrial Activity (Rule 6):**

Industrial storm water permits are required for facilities where activities of the industrial operation are exposed to storm water and run-off is discharged through a point source to waters of the state. Determination of applicable industrial activities is based on a facility's Standard Industrial Classification (SIC) code(s) or facility activities included in the listed narrative descriptions within the rule.

For more detailed information and links to storm water rules, please refer to IDEM's website at www.idem.IN.gov/4896.htm.

Storm Water Pollution Prevention Plan (SWP3) for Industrial Activity: Who needs an SWP3?

Most industrial facilities in Indiana are subject to the Rule 6 permitting requirements. Rule 6 covers the National Pollutant Discharge Elimination System (NPDES) administrative general permit for storm water run-off associated with industrial activity. If your facility is subject to Rule 6, the facility representative must submit a completed *Rule 6 Notice of Intent (NOI) Letter* (State Form 51286). After the NOI letter is submitted, the facility representative must develop and implement a storm water pollution prevention plan (SWP3) and submit results of sampling data, an SWP3 certification checklist, and an annual report within 365 days from the submission date of a timely-submitted NOI letter. The SWP3 certification checklist submittal certifies that the facility has completed and implemented a storm water pollution prevention plan that is consistent with the requirements of Title 327, Article 15, Rule 6, Section 7 of the Indiana Administrative Code.

For more information, please refer to IDEM's website at www.idem.IN.gov/4901.htm.

Industrial Water General Permits

1. Coal Mining Activity (Rule 7):

Facilities that engage in surface mining, underground mining, and reclamation projects that utilize sedimentation basin treatment for pit dewatering and surface run-off must apply for a general permit from IDEM's Office of Water Quality. Facilities that engage in activities that require best management practices for storm water run-off must also apply for a general permit from IDEM's Office of Water Quality.

2. Noncontact Cooling Water (Rule 8):

Facilities that discharge once through noncontact cooling water which is free from wastewater generated by manufacturing processes and other types of wastewater discharges must apply for a permit from IDEM's Office of Water Quality.

For more detailed information and links to this rule, please refer to IDEM's website at www.idem.IN.gov/5914.htm.

3. Oil Related Activity (Rules 9, 10, and 11):

Facilities that operate petroleum products terminals, ground water petroleum remediation systems, and hydrostatic testing of commercial pipelines must apply for a permit from IDEM's Office of Water Quality.

For more detailed information and links to this rule, please refer to IDEM's website at www.idem.IN.gov/5915.htm.

4. Sand, Gravel, Dimension Stone, or Crushed Stone Operations (Rule 12):

Facilities must apply for a permit from IDEM's Office of Water Quality if they discharge wastewater from sand, gravel, dimension stone, and crushed stone operations that utilize sedimentation basin treatment for:

1. Pit dewatering
2. Channel machines
3. Broaching
4. Jet piercing
5. Scrubber water from wet scrubbers used for air pollution control
6. Dust suppression spray water
7. Wash water from spray bars for final screening operations
8. Noncontact cooling water for cooling of equipment

For more detailed information on this rule, please refer to IDEM's website at www.idem.IN.gov/5917.htm.

Construction in a Wetland, or Placing Dredge or Fill Materials in a Wetland

Any person who wishes to place fill materials, excavate or dredge, or mechanically clear (use heavy equipment) within a wetland, lake, river, or stream must first apply to the U.S. Army Corps of Engineers for a Section 404 permit. For more information, please refer to IDEM's website at www.idem.IN.gov/5908.htm.

The U.S. Fish and Wildlife Service (USFWS) has created national wetland inventory maps which identify the general location of wetlands. IDEM advises that a wetland determination/delineation be performed prior to commencement of any construction and/or demolition activity. For more information, please visit USFWS's website at www.fws.gov/wetlands.

State Operating Permits

In Indiana, nearly all point-source discharges to surface waters require an NPDES permit. State operating permits are used to regulate water pollution control facilities not otherwise regulated by an NPDES permit. While these are not commonly used, state operating permits are issued at the discretion of the IDEM commissioner when a discharge may pose a threat to human health or the environment.

Although water discharged directly into the ground does not require an NPDES permit, it may require a state operating permit from IDEM. However, discharge by underground injection of salt or sulfur bearing wastewater and waste liquids associated with the recovery of oil and natural gas do not require a state operating permit. Just as with an NPDES discharge permit, the state operating permit may require that the effluent be treated to reduce pollutants to some environmentally based limit prior to disposal.

Permits for deep well injection are issued by the U.S. EPA Region 5 Underground Injection Control Program. For information about discharges into deep injection wells, review www.epa.gov/r5water/uic or contact U.S. EPA at (312) 886-1492.

Land Application Permits

An alternative to an industrial NPDES discharge permit may be a land application permit. Land application is the process of using wastewater, biosolids (from the treatment of human waste), and industrial waste products as fertilizer and soil conditioners. If these waste streams have sufficient nutrients and the requirements of 327 IAC 6.1 are met, a land application permit can be approved through the Office of Land Quality. These materials are usually spread on the land or injected below the land surface within the root zone of the crop. Examples of industrial waste products that are used for land application are waste paper fibers, food processing wastes and pharmaceutical manufacturing byproducts.

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Anyone wishing to land apply these materials, after the standards have been met, must first receive a permit from IDEM's Office of Land Quality Land Application program. For information about land application permits, review IDEM's website at www.idem.IN.gov/5901.htm or contact the Land Application program within the Solid Waste Permits section at (317) 232-8735 or (800) 451-6027, ext. 2-8735.

Common Water and Wastewater Issues

Water and Wastewater Permit Fees

For a list of fees associated with wastewater permits, refer to IDEM's website at www.idem.IN.gov/4878.htm.

Water Treatment Additives

An NPDES discharge permit has specific requirements for sampling and discharge of water with additives. The *2E Application for Approval to Use Water Treatment Additives* (State Form 50000) must be submitted for existing and new additives that are used in the treatment for wastewater. The form is available at www.idem.IN.gov/5157.htm#owq_wastewater.

Cleaning Equipment and Floors

Cleansers used for industrial cleaning, even if they are the same formula as standard household cleaners, are considered a non-domestic source discharge if the wastewater is generated from cleaning industrial equipment or the area around it. The reason for this is that the area being cleaned has the potential of introducing contaminants, such as machine lubricants, to the wastewater that are not typically found in household wastewater. Therefore, substances that may be in the cleaning water, and the solutions or detergents used for cleaning, must be included in the application for this wastewater discharge. It is unlikely that this discharge would be authorized to go directly into surface water or ground water without treatment. Some communities might have local requirements regarding the cleaning solutions. For example, although it is recommended that low- or no-phosphate detergents and additives be used in all areas, some communities require them to be used.

Check with your local sewer authority to see what is required.

Cooling Water

Water used for machine cooling, solvent coolers and stills, condensers, or in heating, ventilation, and air conditioning (HVAC) systems is considered non-sanitary wastewater. This water cannot be discharged to the surface water without a permit. A discharge to the ground or ground water requires an exemption, notification, or permit. To discharge water used for cooling to the publicly owned treatment works (POTW), you must have written authorization from the local treatment authority.

Chemicals and/or biocides or algaecides are sometimes used to prevent scale build-up, freezing, or slime growth. If these additives are being proposed for use and will be discharged to the ground or ground water, an NPDES discharge permit must be obtained. The permit will have specific requirements for sampling and discharge of water with additives, and some additives on the market currently cannot be discharged at all. You are required to obtain written authorization for each different type of additive you use. It is important to remember this if you change additives.

There may be some restrictions for discharges with additives to a POTW. You are required to notify the POTW each time that you switch additives.

Floor Drains

Prior authorization or a permit must be obtained for the discharge of any fluids into floor drains that will reach ground water, surface water, or a sanitary sewer. It is unlikely that a ground water or surface water discharge permit will be issued for floor drain waste, as most of these discharges are prohibited in local building and plumbing codes. Some POTWs may accept waste from floor drains, such as antifreeze, engine washdown water, and small quantities of oily substances, at specific rates and times. Wastewater that is not authorized for discharge must be managed and disposed of as a liquid industrial waste or hazardous waste, depending on its classification.

Keep water use to a minimum when cleaning floors. Hoses should not be used to wash down the floors. Solvents should not be used for general cleaning of shop floors. Mop floors with biodegradable floor detergent according to the manufacturer's directions. Any accumulation should be recovered by a wet vacuum or mop.

Minimize or eliminate the use of degreasers and solvents where possible. Degreasers put oil into a solution, which makes it nearly impossible to remove the oil from the wastewater by conventional methods. Overuse of degreasers will make oil/water separators ineffective. Degreasers could also contain volatile organic compounds, which can be toxic and are highly mobile.

Currently, wastes entering floor drains may only be legally disposed of if the discharge goes to the following:

- POTWs with approval by the local sewer authority.
- Holding tanks, which are then pumped out with the wastewater and sludge being hauled to an approved facility. Holding tanks should be located to allow for easy access for cleaning and repair.

Any floor drains that do NOT discharge to either of the above must be closed off or rerouted to the POTW or a holding tank. Plugging the drainpipe that connects to the storm sewer/drain with concrete can eliminate the discharge. However, if the discharge

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access is a direct manhole into a storm sewer or drain, a cement contractor can prevent future access to the manhole by installing a lock-down cement cap. Be careful not to block drainage in an existing storm drain with cement.

For holding tanks, above ground storage tanks (ASTs) are recommended. These allow the prompt detection and correction of any leaks. ASTs must be constructed with a material that is compatible with the waste liquids. All ASTs should also have secondary containment that is designed to allow easy access for cleaning and regular inspections (see Chapter 5, *Storage Tank Regulations*). The secondary containment structure should be equipped with a sump pump to allow easy removal of collected precipitation or any waste liquids in the event of a leak. The sump pump should not activate automatically. Instead, it should allow for the manual activation after verification that the liquid is precipitation or product. If product, the liquid should be pumped into a disposal container. Concrete vaults can be used as secondary containment if the structure is constructed with a water-stop joint design and the concrete is coated with an impermeable material compatible with the waste. Concrete vaults should not be used as the primary containment because they crack easily.

Underground storage tanks (USTs) can also be used for holding tanks. If it is made of steel, it should be equipped with cathodic protection. Double-walled tanks are recommended. They should also have a leak detection device or high-level alarm to alert of any overflows or leaks. All piping leading from the floor drains to the holding tank should be double-walled pipe. Buried pipe should also have some type of leak detection system.

Restrooms and Breakrooms

Standard domestic wastewater may be discharged to a POTW, privately owned sanitary treatment system, or septic system. Pouring non-domestic wastes down the drain or in the toilet is prohibited, unless the discharge is to a municipal treatment system and is specifically authorized by the local sewer authority.

Spills and Other Releases

See Chapter 7, *SARA Title III – Emergency Planning and Community Right-to-Know Act*, for information regarding cleanups and release reporting requirements.

Pit or Trench Drain Sludge

This type of material is the semi-liquid residue that accumulates in the bottom of trench drains or holding tanks that receive non-domestic wastewater. Trench drains or holding tanks are typically located in loading or unloading areas; they may also be located so they are convenient to receive vehicle wash water or other types of non-domestic wastewater. This waste may contain oil, antifreeze, heavy metals, degreasers, or other contaminants. As noted previously, this type of wastewater cannot be discharged to the ground, the ground water, to a septic system, or to a POTW without prior approval. This

type of waste cannot be disposed in your facility's solid waste containers and must be treated as a liquid industrial waste unless the material is known to have been impacted by hazardous material, in which case it would have to be handled as hazardous waste and according to procedures outlined in Chapter 4.

If the waste is not hazardous there are three options for handling the sludge, depending on its water content:

1. Check to see if your POTW will allow you to pump this liquid into the sewer system. It may be required that the liquid portion undergoes pretreatment before disposal to a POTW. A common method of treatment is to have the liquid pass through a grit chamber and an oil/water separator.

If your facility has a grit chamber or oil/water separator, an inspection and maintenance program should be in place to ensure that the chamber/separator operates effectively. Check with your local POTW or building/zoning officer for any local requirements. The frequency of servicing is often based on the size of the separator and the volume and contents of the wastewater that flows through it.

Your program should include:

- Regular inspections
 - Recycling or disposal of separated oil
 - Sludge sampling and disposal
 - Cleaning out and refilling the chamber with water
2. You may dry the sludge on-site. If you choose this option you must be able to dry out the material in a container of some type. You cannot dry out the material so that any liquid is allowed to impact the ground, or if not authorized, the on-site sewer system. If you are able to dry out the material in an appropriate manner, the dried sludge can then be disposed of in solid waste containers, which are subsequently directed to a licensed landfill. There cannot be any free liquid left in the sludge.
 3. You may have the sludge pumped from the holding tank by a permitted and registered liquid waste transporter for appropriate disposal at an approved facility. Under no circumstance should wastewater or pit sludge from trenches be directed into a facility's septic tank and/or tile field.

Power Washing

If your business is considering using a power washer, the regulations governing wastewater discharges from power washing operations depend on where the discharge is to be directed, if detergents will be used, and if there will be any pollutants that would be discharged in the rinse water. A permit is generally not needed for power wash discharges from routine building washdown without the use of detergents or other com-

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pounds, or pavement washing where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been previously removed) and detergents or other compounds are not used. For anything other than routine building washdown (use of power washing to remove paint is not routine building washdown), pavement washdown, and vehicle or equipment power washing, the wash water generated may contain pollutants that would need to be discharged through a permitted wastewater treatment facility. Authorities at POTWs are responsible for regulating wastewater that is directed to their facilities. If the discharge goes to a storm sewer system (drain, pipe, conveyance channel, water of the state, water of the United States, etc.) the wastewater could be regulated by the local municipal separate storm sewer system (MS4) and by IDEM. An MS4 may choose to regulate all washing operations, regardless if detergents are used. It is recommended that you consult the local MS4 before proceeding. If the discharge is to surface water, IDEM would have jurisdiction and the discharge would be regulated.

You must obtain permission from the POTW authority to discharge wastewater from a job site into the sewer. It is recommended that you get the approval in writing. A wastewater treatment system authority may require you to pretreat your wastewater prior to discharge into the sewer system. It is important that the POTW authority knows what and when you are discharging. Discuss with the POTW authority the proper way to access the sanitary sewer system. It is also important to note that many cities have strict ordinances against accessing the sanitary sewer by lifting manhole covers.

If there is not direct access to a sanitary sewer system, another option is to collect the wastewater after arranging for disposal at a permitted wastewater treatment facility such as a local POTW. Some POTWs have designated locations for dropping off trucked wastewater (usually called a trucked waste disposal site). Other POTWs may require that trucked wastewater be delivered directly to the treatment plant.

In the event that the powerwashing will generate pollutants per IC 13-30-2-1, the wastewater will need to be collected and disposed in accordance with local and state requirements. IDEM does not require that a specific type of containment method be used for wastewater collection. However, if you do not have a permit, a containment system must be designed so that all of the wastewater is collected and treated. The wastewater cannot be allowed to run into a storm drain or off-site. Applying for an NPDES permit will likely not be a practical option for mobile power washers.



Indiana Code 13-30-2-1

A person may not discharge, emit, cause, allow, or threaten to discharge, emit, cause, or allow any contaminant or waste, including any noxious odor, either alone or in combination with contaminants from other sources, into the environment or any publicly owned treatment works.

Anyone who needs to apply for an NPDES permit or who has questions on water discharges should contact IDEM's Office of Water Quality at (317) 232-8709 or (800) 451-6027, ext. 2-8709 and request to speak with staff of the NPDES program.

Other Regulations that Might Apply to a Job Site

It is necessary to determine whether your actions generate hazardous waste. For example, if your company is power washing old paint from a building, paint chips need to be collected, evaluated, and disposed of properly. Paint chips cannot be left on the ground at the job site. Old paint stripped off commercial buildings may contain metals (such as lead, chromium, cadmium, and mercury), causing it to be regulated hazardous waste. Another example: if solvents are used as degreasing agents, the wastewater may become a listed or characteristic hazardous waste. Additional requirements may also apply at contaminated job sites.

Wastewater Treatment Operator Certification and Continuing Education

The Compliance Evaluation section of the Office of Water Quality's Compliance Branch administers the wastewater certification and continuing education programs. Industrial and municipal wastewater certification exams are offered twice annually in the spring and fall, at three or more testing sites around the state. Exams for the five different classifications of municipal wastewater operators are held in the morning, and exams for the five different classifications of industrial wastewater operators are held in the afternoon. A total of approximately 600 people sit for the exams annually. In addition to these ten different classifications, there is also the apprenticeship program to allow an individual to take the wastewater treatment operator's certification examination before fulfilling the education or experience requirements for certification.

Information is available on IDEM's Wastewater Certification and Continuing Education website at www.idem.IN.gov/5088.htm, and questions may be directed to (317) 232-8791 or (800) 451-6027, ext. 2-8791.

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For More Information

Confined Feeding Operations Permits Program	IDEM – Office of Land Quality <i>Confined Feeding Operations Permits Section</i> (317) 232-4473 or (800) 451-6027, ext. 2-4473 www.idem.IN.gov/4994.htm
Industrial and Pretreatment Permits Program	IDEM - Office of Water Quality <i>Industrial Permits Section</i> (317) 232-8709 or (800) 451-6027, ext. 2-8709 www.idem.IN.gov/4882.htm
Land Application Permits	IDEM – Office of Land Quality <i>Land Application Permits</i> (317) 232-8735 or (800) 451-6027, ext. 2-8735 www.idem.IN.gov/5901.htm
Municipal and Semi-Public Permits	IDEM - Office of Water Quality <i>Municipal Permits Section</i> (317) 233-0469 or (800) 451-6027, ext. 3-0469 www.idem.IN.gov/4873.htm
Storm Water and Wetlands Permits Programs	IDEM – Office of Water Quality <i>Surface Water, Operations, and Enforcement Branch</i> (317) 233-8488 or (800) 451-6027, ext. 3-8488 Storm Water: www.idem.IN.gov/4896.htm Wetlands: www.idem.IN.gov/4870.htm
Wastewater Field Inspections	IDEM - Office of Water Quality <i>Facilities Inspection Section</i> (317) 234-2579 or (800) 451-6027, ext. 4-2579 www.idem.IN.gov/5089.htm
Wastewater Permits	www.idem.IN.gov/4869.htm