Region 5 NPDES Program and Permit Quality Review

Indiana

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Purpose and Approach

This report presents results of a Program and Permit Quality Review (PQR) of the Indiana Department of Environmental Management (IDEM) National Pollutant Discharge Elimination System (NPDES) in Region 5. The PQR was conducted in 2019 by the U.S. Environmental Protection Agency (EPA) under the authority of the Clean Water Act (CWA) to provide oversight of the state NPDES program. Helping states ensure that their NPDES permits are consistent with Federal requirements is a fundamental priority for EPA.

The review examined IDEM's NPDES administrative record for selected permits, gathered information from the State about their NPDES program structure and organization, and visited the IDEM main office where the EPA review team collected additional information and shared preliminary findings with the State. The review followed the EPA's national NPDES PQR Standard Operating Procedure (SOP), examining permit and program "core" elements, and permit requirements associated with national topic areas for the current PQR cycle. Core elements include permit administration, effluent limits, monitoring requirements, standard conditions, and special conditions. National topic areas for the fiscal year (FY) 2018 – 2022 PQR cycle are Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements. EPA Region 5 did not choose any regional topic areas for the Indiana PQR.

As of June 2019, IDEM administers 1,356 individual and 11 general NPDES permits. From this universe, the PQR selected permits issued between October 1, 2015 and January 1, 2018 that had not undergone EPA real-time review. The selection methodology met the minimum number of permit types and facility sizes prescribed in the SOP. Eleven permits were reviewed: 8 municipal permits, 2 non-municipal individual permits, and the small MS4 General Permit (GP).

Major Findings

The IDEM Office of Water Quality (OWQ) strives to uphold the mission of the Clean Water Act (CWA) through its dedication to improving program administration through implementation of process efficiencies and increased communication and coordination across the agency as well as within the regulated community and interested stakeholders. IDEM has demonstrated success with streamlining processes and staff functions, while maintaining solid permit administration, high permit quality, and staff enrichment through cross-training and intra-agency collaboration.

Based on the PQR, NPDES permit conditions appear to conform with federal regulations. However, supporting documentation (e.g., applications, public notice documents, and fact sheets) did not include all elements required by federal regulations. Reviewers found that some applications did not include all applicable elements described by 40 CFR Section 122.21. Some public notices lacked information about the business conducted, receiving water and sludge disposal practices, and comment procedures, as required by 40 CFR Section 124.10.

Action Items

The PQR identifies 5 essential and 24 recommended action items. Many of the action items were shared with IDEM managers as preliminary findings during the PQR on-site visit in June 2019.

Essential action items must be addressed by IDEM to meet NPDES regulations and will be subject to agreed-upon milestones and due dates as a part of a workplan to be developed. Essential action items from this PQR concern permit application requirements, public notice contents, and storm water controls. For instance: applications must contain all required data; and public notices must contain all required contents; and the MS4 General Permit must be updated to comply with the MS4 Remand Rule which was finalized on January 9, 2017.

IDEM should consider recommended action items to more fully implement EPA guidance/policy or otherwise improve program effectiveness. Recommended action items from this PQR are listed in Table 9 at the end of this document.

EPA is available to assist IDEM in addressing all action items and will annually track IDEM's progress with essential action items. The status of all action items will be reported during the next IDEM PQR cycle.

I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Reviews (PQRs) include evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, identifies successes in implementation of the NPDES program, and identifies opportunities for improvement in the development of NPDES permits.

This PQR report identifies action items from a PQR of the IDEM NPDES permits program in 2019. The action items are identified within Sections III and IV of this report and are divided into two categories to identify the priority that should be placed on each item.

- **Essential Actions -** "Essential" action items address noncompliance with respect to a federal regulation which EPA has cited. IDEM must address these action items in order to comply with federal regulations.
- **Recommended Actions -** "Recommended" action items are recommendations to increase the effectiveness of IDEM's NPDES permit program.

The Essential action items are used to augment the existing list of "follow up actions" tracked by EPA Headquarters on an annual basis and are reviewed during subsequent PQRs.

EPA's review team, consisting of 12 Region 5 staff and 1 EPA contractor, conducted a review of the Indiana NPDES permitting program which included an on-site visit to the IDEM Indianapolis office from June 11 to 13, 2019 (with 3 Region 5 staff and 1 EPA contractor).

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. Core reviews evaluate similar issues or types of permits in all states to focus permit quality on the *Central Tenets of the NPDES Permitting Program.*[1]

Topic Area Reviews

National topic area reviews evaluate requirements applicable to specific themes determined to be important on a national scale. The three national topics areas for FY 2018 to 2022 PQR cycle are Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements.

The PQR reviewed 11 permits issued within 3 years prior to the on-site visit. As shown in Table 1, 8 of the permits are individual municipal (POTW) permits, 2 are individual non-municipal (non-POTW)

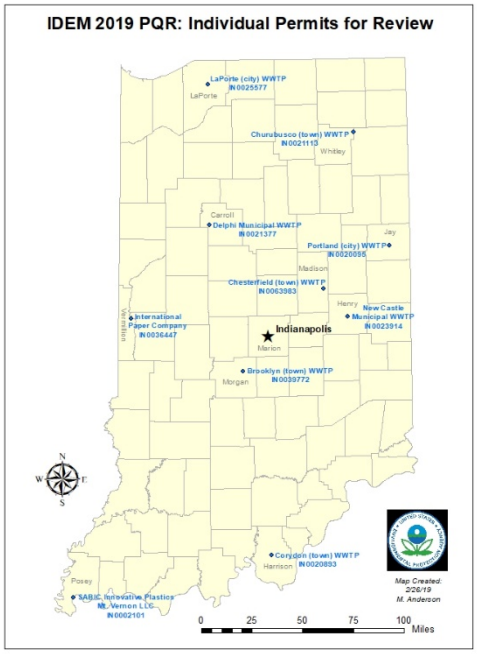
[1] https://www.epa.gov/npdes/central-tenets-npdes-permitting-program

permits, and 1 is the MS4 General Permit (GP). Of the 10 individual permits, all were reviewed for core permitting areas and 8 were reviewed for one or more national topic areas. In addition, the selection considered the location of permittees across the State to ensure that they are not all clustered in one watershed. The locations are shown in Figure 1.

Table 1. Permits Selected for the PQR

Permit #	Small MS4	Nutrient Impaired Receiving Water	Food Processor IU	Minor	Major	POTW	Non-POTW
IN0023914			X		X	X	
IN0025577			X		X	X	
IN0021377			X		X	X	
IN0020893		X	X		X	X	
IN0039772		X		X		X	
IN0063983		X			X	X	
IN0021113		X		X		X	
IN0020095		X			X	X	
IN0002101					X		X
IN0036447					X		X
312 IAC 15-13	X						
Total 11	**1**	**5**	**4**	**2**	**8**	**8**	**2**

Figure 1. Reviewed Individual Permit Discharge Locations and County Name



II. STATE PROGRAM BACKGROUND

A. Program Structure

IDEM is the NPDES permitting authority for the State of Indiana and the Office of Water Quality (OWQ) administers the program. IDEM is not authorized to implement the Industrial Pretreatment Program. Since EPA is responsible for administering and implementing the Industrial Pretreatment Program, EPA Region 5 works with POTWs to ensure that local pretreatment programs meet Federal requirements and works with IDEM to ensure that appropriate pretreatment requirements are included in POTW NPDES permits.

The IDEM NPDES program is administered in the IDEM Central Office in Indianapolis. In addition, IDEM's five Regional Offices are located in Indianapolis, South Bend, Valparaiso, Brownstown, and Petersburg. Central Office staff are largely responsible for drafting, reviewing, and administering NPDES permits, including receipt and review of NPDES applications, development of wasteload allocations, public noticing of the draft permits, responding to comments, and issuance of final permits. Central Office staff also conduct most compliance evaluation activities. Staff in the Regional Offices also conduct field inspections and are assigned based on geographic area.

IDEM's Watershed Assessment and Planning Branch houses the watershed monitoring, assessment, Total Maximum Daily Load (TMDL), and Nonpoint Source (NPS) programs. Technical and Logistical Support Section staff provide support for the programs which includes quality assurance/quality control of collected and submitted data. The branch also supports water quality standards development, NPDES permitting and compliance activities and the "IndianaMap" online interactive information system.

Certain NPDES permits are administered by other state agencies. The lead agency for administering the Pesticide Application General Permit (ING870000) is the Office of Indiana State Chemist (OISC), due to the stringent pesticide application regulations which exist in Indiana. Entities which meet the threshold levels are not required to file a Notice of Intent (NOI) with IDEM if they have obtained the proper license from OISC. Further, IDEM also has a MOA with the Indiana Department of Natural Resources, Division of Reclamation to conduct NPDES compliance monitoring activities for all coal mines operating within the State of Indiana.

As of June 2019, OWQ employed 16 full-time permit writers, including 1 specifically for non-stormwater general permits, and 2 for stormwater general permits. Over the past 3 years, OWQ has issued an annual average of 32 permit renewals, 24 modifications, and 1 revocation/reissuance for major individual NPDES permits. IDEM OWQ also issued an annual average of 20 new, 239 renewals, 41 modifications, 6 revocation/reissuances, and 25 terminations of minor individual NPDES permits. The OWQ Permits Branch NPDES staff are supported by additional staff: 3 senior environmental managers who oversee the CSO program, 1 toxicologist, 1 engineer, 2 technical environmental specialists, 3 biologists, 1 part-time contract employee, and 2 administrative assistants. Additionally, there are 13 wastewater inspectors, 10 compliance staff, and 7 enforcement staff that support IDEM OWQ NPDES permitting. OWQ staffing levels have remained on the average, steady since 2016; however, IDEM reports that the Permit Branch has lost institutional knowledge due to retirements by several senior permit writers and permit support staff. At the time of the PQR, OWQ was in the

process of filling two vacant industrial permit writer positions. The OWQ has been able to refill all but one permit writer full-time equivalent (FTE) and one support FTE.

OWQ encourages and fosters cross-training between the Industrial and Municipal permitting sections to enhance and broaden perspectives and skill sets. Further, the OWQ provides new staff access to EPA's NPDES Permit Writers' Course online modules and supports attendance at the in-person 5-day course when possible. In addition to direct training opportunities, IDEM fosters greater coordination of agency functions which has led to improved and ongoing communication and coordination between the IDEM NPDES and water quality standards programs, as well as compliance and enforcement and other program areas. IDEM holds routine Branch, Section, and individual staff meetings to share information and facilitate an exchange of ideas. IDEM staff have also held biweekly meetings focused on the Combined Sewer Overflows (CSOs) to further develop emerging program issues and discuss specific community issues.

When the permit application is received, administrative staff verify the fee is paid, and route the application to the Section Chief. The Section Chief then assigns the permit to a permit writer based on workload and staff expertise. Soon after assignment, the permit writer contacts the permittee to make an introduction and inform the permittee of the permit development process. Staff follow general standard procedures for this initial outreach call and remain in contact with the permittee throughout the permit development process. Permit development is tracked using an online tracking database which all permit managers can view and query. Monthly Metrics Reports are generated and transmitted to the Governor's office to provide informational data and statistical analyses for each permit that was issued or denied during the previous month and for each active pending application as of the last day of the month.

IDEM conducts outreach activities with existing permittees beginning several months before the renewal application is due. Administrative staff within the Permits Branch send out permit renewal notices via email (or via U.S. mail if an email address is unavailable) approximately 4 months before the due date of the renewal application. IDEM sends reminder notifications approximately 30 days before the due date and as the due date approaches, IDEM increases communication efforts (which may include telephone calls and/or requests for field staff to visit the site).

Permit writers review applications for technical completeness soon after receipt. IDEM noted that historical issues related to application submittals have been corrected over time; the OWQ provides applicants with a checklist to ensure that applications contain appropriate and necessary information. The OWQ staff noted that staff within the Permits Branch are currently reviewing and evaluating the need for enhanced outreach to some permittees with a focus on decreasing the number and frequency of deficient or incomplete applications.

IDEM has conducted Lean evaluations of permitting processes and related functions and has realigned certain staff duties to ensure efficient permit development and processing. OWQ staff follow SOPs for most aspects, and refer to existing guidance, policy, regulations, and procedures for other aspects of permit development. For example, permit writers refer to Indiana's Administrative Code for implementation procedures regarding the application of mixing zones, antidegradation and anti-backsliding, total maximum daily loads (TMDLs) and associated wasteload allocations (WLAs), and establishing case-by-case effluent limitations. In addition, OWQ staff have developed SOPs related to

the general process of permit development (from application to finalizing the permit), conducting outreach to permittees, implementing water quality standards within and outside of the Great Lakes watersheds, conducting reasonable potential to exceed (RPE) evaluations, establishing monitoring requirements, conducting peer reviews of draft permits, pretreatment documents, and permitting nutrient discharges.

IDEM has several in-house data systems which staff utilize to support permit development, such as the Assessment Information Management System (AIMS) database. Further, IDEM's website houses various informational resources that permit writers utilize related to 303(d) lists, TMDL reports, and other water quality assessment tools. The water quality reports and tools are integrated into IDEM's State Modelers Utility program which is an online program that allows staff to pinpoint proposed and existing outfalls using latitude/longitude coordinates and provides the modeler easy access to water quality information to support development of the NPDES permit. Permits Branch staff also routinely participate in TMDL coordination meetings with staff of the Watershed Assessment Branch.

IDEM primarily utilizes the Integrated Compliance Information System for NPDES (ICIS) for monitoring and tracking active NPDES permits. Staff also utilize a secondary data system, called RM (formerly known as TEMPO), for processing incoming Notices of Intent (NOIs) for general permits. Upon approving a facility for coverage, the completed record is then automatically "pushed" or electronically migrated into the USEPA ICIS data system. A new State data system is currently in development which is intended to ultimately replace RM; it will also interact with ICIS.

Permit writers employ templates to write NOIs, fact sheets, permits, and public notices and a boilerplate is used for standard conditions. IDEM's templates are reviewed and updated regularly in response to policy changes, rule changes, or feedback from legal counsel staff. OWQ maintains several permit and fact sheet templates, based on the type of permit or geographical region (i.e., Great Lakes watersheds or non-Great Lakes watersheds). Staff in the Permits Branch use a standardized spreadsheet to conduct RPE evaluations. OWQ staff use CORMIX to calculate alternate mixing zones for acute aquatic life criteria; IDEM allows up to a 1:1 dilution by default for acute mixing zones; therefore, a mixing zone demonstration and effluent plume modeling are required to receive a higher dilution factor.

OWQ Section Chiefs review all draft individual NPDES permits and pretreatment permits. After public notice of any individual permit, the Section Chief reviews the final proposed permit and forwards to the Branch Chief. The Branch Chief reviews the final proposed permit and fact sheet in conjunction with all the relevant documents and is the signatory for all final permit decisions. Final actions such as denial letters, terminations, and/or approvals pertaining to controversial projects are elevated for review and signature by the Branch Chief or upper management. IDEM develops general permits through extensive stakeholder participation, involving internal OWQ workgroups and sometimes external workgroups in the process. The draft general permit and fact sheet are reviewed by the Section Chief, Branch Chief, and upper management before sending to EPA for review. IDEM then shares the draft permit and fact sheet with external stakeholders before it is public noticed. The final general permit goes through a similar process with final signature by either the Deputy Assistant Commissioner or the Assistant Commissioner.

IDEM's website houses draft permits when they are public noticed. The website allows any interested persons (external or internal) to sign up on a list-serve to be notified whenever the public notice web page is updated. Final permits are uploaded to IDEM's Virtual File Cabinet (VFC) and indexed as "public" documents so that anyone can view them. The VFC also stores internal and confidential documents which are only viewable by agency employees who are logged into the system and who have certain viewing rights. In addition, draft and final permits are stored on a shared drive accessible to all permit writers and managers. Upon issuance of the final permit, the permanent files are scanned and/or electronically imported into the IDEM VFC. Finalized/signed letters, monitoring and reporting and enforcement reports are also scanned and stored in the IDEM VFC. IDEM is in the process of preparing all unscanned finalized documents for scanning into the VFC.

B. Universe and Permit Issuance

As of June 2019, the IDEM NPDES program administers 1,356 individual permits and 11 GPs. As shown in Figure 2, most individual permits are minor permits, and a slight majority of the overall total covers non-municipal discharges. There are 52 non-municipal major permits compared to 138 municipal major permits. According to IDEM, significant industries in the State include coal mines and related industries; sand, stone, and gravel quarries; steam electric power plants (primarily coal- and/or natural gas-fired); steel mills; aluminum foundries; pharmaceutical manufacturing; oil refineries; and various food processors. Table 2 identifies the State's 11 GPs with their issuance and expiration dates. The GPs cover a total 10,826 permittees, more than 95 percent of which are stormwater dischargers. The extent of GP coverage is shown graphically in Figure 3.

Timely permit issuance is a priority for IDEM; State statute (IC 13-15-4) requires IDEM to renew/reissue a NPDES permit by its expiration date. IDEM typically maintains zero backlog of NPDES permits. At the time of the PQR, IDEM reported that there are no permits that are administratively continued or expired.

Figure 2. Number of Individual Permits

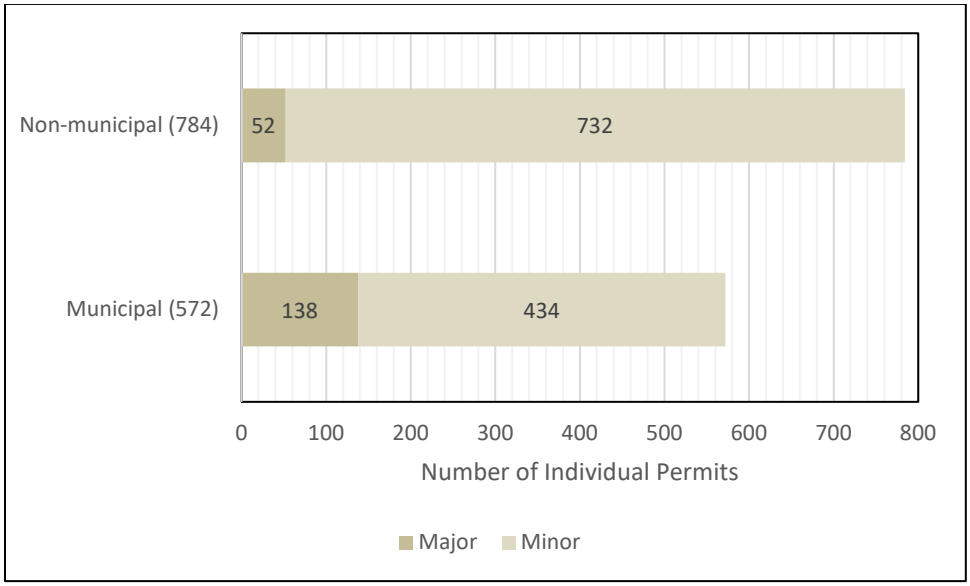
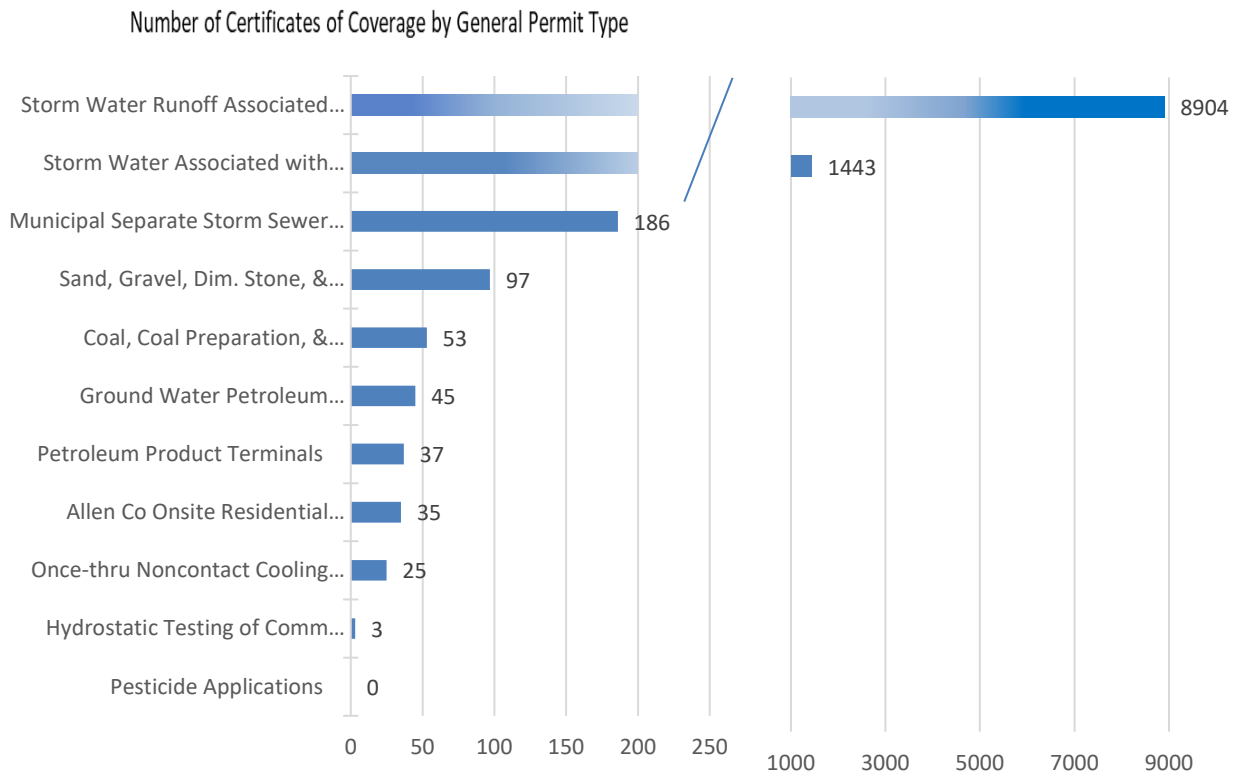


Table 2. NPDES General Permits

NPDES Number	General Permit Name	Issuance Date	Expiration Date	Number of Permitted Facilities
ING08000	Ground Water Petroleum Remediation	11/5/2015	10/31/2020	45
ING25000	Once-thru Noncontact Cooling Water	11/5/2015	10/31/2020	25
ING34000	Petroleum Product Terminals	11/5/2015	10/31/2020	37
ING49000	Sand, Gravel, Dim. Stone, & Crushed Stone	11/5/2015	9/30/2020	95
ING67000	Hydrostatic Testing of Comm Pipelines	11/5/2015	10/31/2020	3
ING87000	Pesticide Applications	10/31/2016	10/30/2021	0
327 IAC 15-7	Coal, Coal Preparation, & Reclamation			53
327 IAC 15-14	Allen Co Onsite Residential Sewage Systems			35
327 IAC 15-5	Storm Water Runoff Associated with Construction Activity			8904
327 IAC 15-6	Storm Water Associated with Industrial Activity			1443
327 IAC 15-13	Municipal Separate Storm Sewer Systems (MS4)			186

Figure 3. General Permit Coverage



C. State-Specific Challenges

The challenges facing IDEM are common to many states. IDEM staffing is at a record low since 1994; therefore, resources are a persistent issue. IDEM noted that certain rulemakings have been set aside because permit writers are the same staff that support permit rulemaking efforts, and timely permit issuance is a high priority. IDEM also noted that conducting thermal studies and CWA Section 316(b) evaluations are resource and time intensive and sought feedback from EPA on how IDEM could receive available support. IDEM requested EPA's support with performing water quality-based economic analyses and sought feedback from EPA regarding CSO program issues—noting there appears to be a lack of leadership at the national level—specifically related to determining when communities have satisfied program requirements after they have implemented their Long-Term Control Plan (LTCP).

D. Current State Initiatives

IDEM has a variety of initiatives underway to continue to improve the efficiency and effectiveness of the NPDES permitting program. IDEM strives to improve processes and communication to support efficient permit issuance and program administration.

IDEM supports greater communication within the permitting group, promotes and facilitates increased coordination across program areas and agency functions, and encourages ongoing communication with permittees and stakeholders. IDEM has realigned administrative duties to provide for more

efficient permit processing, conducted aggressive follow-up with permittees to ensure timely permit applications, and provided cross-training for staff across program areas. IDEM provides applicants with useful tools to support submittal of timely and complete applications. Further, IDEM permit writers conduct early outreach with permittees to ensure permittees know who the permit writer is, understand the permitting process, and establish an avenue for continued and open communication during permit development. In addition, IDEM provides outreach to the regulated community when changes to their permit or new permitting approaches are being implemented.

IDEM has successfully implemented various permitting approaches, taking initiative in emerging program areas. For instance, IDEM executes a permitting approach that has led to a reduction in phosphorus discharges and is now implementing a nitrogen monitoring plan for major sanitary dischargers. In addition, IDEM has successfully implemented the Federal CSO Great Lakes Enhanced Notification Rule, including State rule revisions necessary to implement the rule in NPDES permits and the development of associated NPDES permit template language. IDEM is currently evaluating updates to NPDES permit application forms necessary to comply with the NPDES Updates Rule.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Background

Basic application information is necessary to properly establish permit conditions. For example, information regarding facility type, location, processes and other factors is required by NPDES permit application regulations (40 CFR 122.21). This information is essential for developing technically sound, complete, clear, and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

Program Strengths

All permits contained appropriate discharger name, facility location, specific discharge authorization information, and receiving stream identification. Fact sheets provided a description of the type of activities and wastewater treatment processes at the facility and IDEM's templates for fact sheets include a placeholder section and template text to address industrial wastewater contributions to municipal facilities.

Areas for Improvement

The review found several permits where the outfall coordinates were inaccurate. IDEM was already aware of these errors and was taking steps to verify latitude and longitude coordinates for current permits. Since this issue was already being addressed prior to the site visit, the review team did not identify any areas for improvement in this core review category.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•The PQR did not identify any recommended action items for this section.

2. Permit Application Requirements

Background and Process

Federal regulations at 40 CFR 122.21 and 122.22 specify application requirements for permittees seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the State and used in permit development.

IDEM issues application reminders to permittees and conducts aggressive follow-up to ensure timely and complete application submittals. IDEM uses federal application forms which are received in hard copy format, scanned by administrative staff, and are assigned to a permit writer. The permit writer conducts a review for administrative completeness and creates an electronic folder or "DocSet" on SharePoint for the permit renewal process and uploads the electronic version of the application in the DocSet. Staff then build out the permit development record in the DocSet. Permit writers initiate internal research on the permit and subsequently review the application for technical completeness, including verification that the latitude and longitude coordinates reported on the application are accurate, using online mapping programs. Permit writers indicate in the permit database whether the application is deemed complete. Recently, IDEM started requiring the permit writer to contact the applicant soon after receiving the application to introduce themselves, describe the permit development process, and request any information that may have been missing from the application (IDEM also requests application information via Incomplete Application Letters). This outreach enables an early understanding of the process and verified contact with the permittee. IDEM indicated that throughout the years of observing similar deficiencies in permit submittals and needing to achieve and maintain zero backlog, they began sending an application checklist with the application reminder notices, addressing certain necessary items (e.g., fee, public notice requirements, or any unique application requirements). Permittees are required to submit the application completeness checklist with their application submittal package.

Program Strengths

IDEM implements early and effective outreach to permittees, providing them useful tools (i.e., application checklist) to understand the components of the application, support accountability, and enable permittees to determine whether their submittal is complete. All permit applications were received at least 180 days prior to the expiration date of the permit. By initiating contact with permittees very early in the permit development process, permit writers encourage the permittee to apply on time and to contact the permit writer directly if there are questions related to the application.

Areas for Improvement

Major POTWs did not consistently complete application forms to meet minimum data requirements contained in Federal NPDES application regulations for WET and "priority pollutants" (the pollutants listed in 40 CFR Part 122 Appendix J Table 2). These POTWs have a design average flow equal to or greater than 1.0 million gallons per day (MGD).

- WET. All applications satisfied State requirements at 327 IAC 5-2-3(g) and (i)(5) for one WET sample. Only three applications complied with Federal application regulations at 40 CFR § 122.21(j)(5). The State requires submission of a minimum of 1 WET sample set whereas Federal regulations require all WET test results for samples collected during the 4 ½ years prior to the permit application.
- Priority Pollutants. Only 1 application (New Castle) satisfied NPDES application requirements for 3 or more samples tested for priority pollutants over 4 ½ years prior to permit expiration (See 327 IAC 5-3-2(f) and 40 CFR § 122.21(j)). Of the remaining applications, 4 did not report any priority pollutant data and 1 (LaPorte) provided data only for only 6 priority pollutants. The State should ensure that permit applicants comply with 327 IAC 5-3-2(f) and 40 CFR § 122.21(j).

IDEM indicated during the PQR there are plans to address the inconsistency in application data requirements, given the recent updates to EPA's NPDES applications and forms. Also, the permit writers annotate in the permit database whether the application is deemed complete, but the database itself is not part of the record and this information is not captured elsewhere in the permit file.

Action Items

Essential	•Ensure that major POTW applications include a complete data set for priority pollutants and whole effluent toxicity (WET) (40 CFR 122.21(j)(4)(iv) and (vi), and (5)).
Recommended	•Ensure that the permit record documents that the permit application is deemed complete.

B. Developing Effluent Limitations

1. Technology-based Effluent Limitations

NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop technology-based requirements where applicable. Permits, fact sheets and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

a. TBELS for POTW Dischargers

Background and Process

POTWs must meet secondary or equivalent to secondary standards (including limits for biochemical oxygen demand [BOD], total suspended solids [TSS], pH, and percent pollutant removal), and must contain numeric limits for all these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR 133.

The 8 municipal permits reviewed contained TBELs at least as stringent as federal requirements. These permits did not specify the required 85 percent minimum removal of BOD and TSS. Where permits did not explicitly include BOD and TSS 85 percent removal requirements at 40 CFR 133.102(a)(3) and (b)(3), it was because WQBELs for these parameters are well below the 7-day and 30-day average TBELs of 45 mg/L and 30 mg/L, respectively. In these cases, IDEM makes a Best Professional Judgement (BPJ) determination that the WQBELs meet the 85 percent removal requirement based on influent BOD and TSS. Fact sheets for municipal permits that lack the 85 percent removal requirement do not include a discussion of the 85 percent removal requirement nor do they include IDEM's determination that percent removal is not needed in the permit.

Program Strengths

Permits and accompanying fact sheets reviewed include adequate descriptions of the facility and wastewater treatment processes and identify the applicable standards. Where there are multiple types of treatment systems at a single facility, the fact sheet clearly describes them. Permits include effluent limitations in the appropriate units and forms.

Areas for Improvement

Permit records reviewed lack discussion of the determination that 85 percent minimum removal is not necessary at certain municipal plants. This determination should be clearly documented in the permit record to provide transparency.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•IDEM should include in the permit record citation of the regulatory basis of not including the 85 percent minimum removal requirement in the permit.

b. TBELS for Non-POTW Dischargers

Background and Process

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Available Technology Economically Achievable (BAT) or Best Conventional Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BAT/BCT developed on a case-by-case basis using BPJ in accordance with the criteria outlined at 40 CFR 125.3(d).

IDEM appropriately calculated TBELs for both the non-municipal NPDES permits using federal categorical ELG and BPJ evaluations. For effluent limitations based on ELGs, IDEM permit writers use spreadsheets on a case-by-case basis to develop applicable effluent limitations. IDEM's fact sheets identify the applicable ELGs and discuss facility categorization and flow values used to develop mass-based effluent limitations.

Program Strengths

Permits reviewed during the PQR appropriately implement federal ELGs that are applicable to the discharge. Fact sheets for non-municipal facilities provide a clear description of the facility and wastewater treatment processes and include adequate discussions of the applicability of federal ELGs.

Areas for Improvement

One fact sheet for a non-municipal permit identifies flow as monthly average as well as the facility design flow whereas the application indicates a different monthly average flow value. It was unclear which flow value was used in the calculation of mass-based effluent limitations.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•IDEM should identify in the permit record the flow value used in developing mass-based effluent limitations and the basis for the flow value used.

2. Reasonable Potential and Water Quality-Based Effluent Limitations

Background and Process

NPDES regulations at 40 CFR 122.44(d) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such water quality-based effluent limits (WQBELs), the permitting authority must evaluate whether any pollutants or pollutant parameters could cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard.

The PQR assessed the processes employed to implement these requirements to evaluate how permit writers and water quality modelers:

- determined the appropriate water quality standards applicable to receiving waters,
- evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- determined critical conditions,
- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limits were necessary for pollutants of concern and, where necessary,
- calculated such limits or other permit conditions.

For impaired waters, EPA evaluated how permit writers consulted and developed limits consistent with the assumptions of applicable EPA-approved total maximum daily loads (TMDLs).

Process for Assessing Reasonable Potential

Indiana conducts RPE evaluations to comply with requirements for discharges within or outside of the Great Lakes system. For discharges within the Great Lakes system, IDEM follows RPE procedures at 40 CFR 132 (Water Quality Guidance for the Great Lakes System). IDEM follows 327 IAC 5-2-11.4 and 11.5 for dischargers outside the Great Lakes System.

Similarly, Section 327 IAC 5-2-11.1 contains procedures for establishing WQBELs for dischargers not discharging to waters within the Great Lakes system, also known as "downstate" dischargers.

IDEM has a standard procedure for Great Lakes system dischargers that implements the RPE requirements contained in Section 327 IAC 5-2-11.5(a) and (b). IDEM also developed internal guidance outlining the WQBELs development process for downstate discharges, including detailed instructions on developing WLAs; developing preliminary effluent limitations (PELs); the RPE process; and development of WQBELs for toxics, $CBOD_5$, and dissolved oxygen.

In order to evaluate water quality impacts, permit writers utilize a screening step and when necessary, a full RPE evaluation. The permit writers conduct these evaluations but can receive support from other agency staff to conduct parameter-specific modeling or understand TMDL and WLA implementation.

This screening approach efficiently tests worst-case water quality impact scenarios in order to effectively screen for RPE. During this process, staff use a spreadsheet to compare effluent monitoring data in the most conservative water quality criteria (i.e., zero stream flow dilution) under low stream flow assumptions. This essentially compares the effluent data directly to the water quality criterion.

Permit writers identify pollutants of concern through review of permit application data, the previous permit, monitoring data from the facility, pretreatment permit information as applicable, and applicable TMDLs and 303(d) listings applicable to the discharge. The identification of receiving streams and application of water quality standards is aided by mapping applications that include various information and IDEM's water quality standards. In addition, permit writers review the "303(d) Tool" on IDEM's website and consult with the TMDL group to identify the receiving stream's impairment status and determine whether TMDLs and associated WLAs are applicable to the discharge.

Permit writers evaluate all available data in the RPE, generally data that are available from the last five years for primary pollutants of concern and the last three years for metals parameters. Where the permit writer has conducted a full RPE, the permit writer will document the RPE in the fact sheet using a narrative discussion and summary table. Where the permit writer has conducted a screening and determined a full RPE is unnecessary, the fact sheet will document that determination and the administrative record will include either a screenshot of the screening results or a spreadsheet file of the screening evaluation. Permit writers upload the RPE spreadsheets to the VFC to become part of the administrative record.

Process for Developing WQBELs

Permit writers also develop WQBELs for those parameters that demonstrate RPE and use the same spreadsheet tool to calculate the WQBELs. Permit writers provide up to a 1:1 dilution as a default, in the application of acute aquatic life criteria. Permittees are required to demonstrate to IDEM that an

alternate acute mixing zone greater than 1:1 is appropriate, through submission of a mixing zone study. IDEM permit writers review the permittee's study and then provide a determination on whether an alternate mixing zone is granted. Default mixing zones are provided in the application of human health criteria. For discharges to waters within the Great Lakes system, IDEM permit writers rely on implementation procedures contained in Indiana's Administrative Code (327 IAC 5-2-11.4(b)(4)). For discharges to waters not within the Great Lakes system, staff utilize supporting guidance. IDEM permit writers document the application of mixing zones in the WLA report, the fact sheets, and the administrative record.

IDEM's TMDL group involves permitting staff in the TMDL planning and development process. The TMDL group prioritizes TMDLs based on water quality status and the presence of active watershed groups. The TMDL group coordinates and communicates regularly with the permitting staff, regarding planning for TMDL development as well as TMDL implementation in NPDES permits. Frequent and open communication aids in tracking TMDL implementation. IDEM permit writers identify stream impairments and applicable TMDLs using state-developed databases, mapping applications, and 303(d) reports. Permit writers verify all outfall latitude/longitude coordinates during every permit renewal as it affects multiple IDEM efforts, but especially because it supports TMDL development efforts. IDEM permit writers implement the WLAs in approved TMDLs in NPDES permits and include documentation of the TMDL implementation and resulting effluent limitations in the fact sheet and administrative record. IDEM routinely discusses receiving stream impairment and TMDL implementation in fact sheets. IDEM references the State 303(d) lists and does not rely on only the EPA-approved 303(d) list; IDEM tries to address pollutants ahead of TMDL development where there are significant water quality concerns.

Program Strengths

Reasonable Potential Analysis

IDEM's fact sheets appropriately discuss receiving stream quality, including identification of the receiving stream, impairment status, applicable water quality standards and TMDLs. Permit writers conduct the RPE in a consistent and standardized manner by using spreadsheet screening and RPE tools. Permit records include adequate and clear documentation of the water quality assessment, RPE, and mixing zone implementation.

WQBEL Development

IDEM permit writers develop appropriate WQBELs based on the RPE and overall water quality assessment. Staff use standardized spreadsheet tools to develop WQBELs following the RPE evaluation. Permits reviewed included narrative effluent limitations that reflect applicable narrative water quality criteria.

Areas for Improvement

Reasonable Potential

The PQR team observed through file review and discussions with individual permit writers that IDEM staff document the RPE screening step differently; certain staff include a discussion or summary in the fact sheet whereas other staff may capture a screenshot of the screening results worksheet and save it to the administrative record. IDEM noted during the onsite PQR that they

are already working towards more consistent documentation of the water quality assessment between the municipal and industrial permitting teams. In one permit reviewed, it appeared that the permit writer did not evaluate for RPE two pollutants that were listed as impairing pollutants for the receiving water body.

WQBEL Development

In six permit records, the WLA used in the permit development was not updated for the current permit renewal, instead an older WLA was carried forward.

Action Items

Essential

- Reasonable Potential
  - The PQR did not identify any essential action items for this section.
- WQBEL Development
  - The PQR did not identify any essential action items for this section.

Recommended

- Reasonable Potential
  - IDEM permit writers should consider any pollutant associated with an impairment of the receiving water a pollutant of concern and evaluate for reasonable potential, regardless of whether an approved TMDL has been developed for that pollutant, a WLA has been assigned to the permitted facility.
  - IDEM should ensure permit writers document the water quality assessment process (i.e., RPE screening step and full RPE evaluations) consistently across municipal and industrial permits.
- WQBEL Development
  - IDEM should ensure that permit writers consider updated WLAs and water quality assessments during each permit development cycle and discuss the rationale where a previous WLA is still appropriate to apply.

3. Final Effluent Limitations and Documentation

Background and Process

Permits must include all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations that ensure that all applicable CWA standards are met. The permitting authority must identify the most stringent effluent limitations and establish them as the final effluent limitations in the permit. In addition, for reissued permits, if any of the limitations are less stringent than limitations on the same pollutant in the previous NPDES permit,

the permit writer must conduct an anti-backsliding analysis, and if necessary, revise the limitations accordingly. In addition, for new or increased discharges, the permitting authority should conduct an antidegradation review, to ensure the permit is written to maintain existing high quality of surface waters, or if appropriate, allow for some degradation.

In addition, permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for WQBELs as well as the procedures explaining the basis for establishing, or for not establishing, WQBELs should be clear and straightforward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

Permits reviewed during the PQR included effluent limitations appropriate to the facility and discharge and included effluent limitations that are at least as stringent as those in the previous permit. Fact sheets reviewed as part of the PQR include consistent general discussions of provisions for both anti-backsliding and antidegradation. IDEM's templates for fact sheets include specific discussions addressing the applicability of federal and State regulations for anti-backsliding and antidegradation. IDEM implements the State's anti-backsliding regulations at 327 IAC 5-2-10(a)(11). IDEM indicated during the PQR that permittees are held to existing effluent limitations unless they meet certain anti-backsliding exceptions. Section 327 IAC 2-1.3 outlines the State's Antidegradation Standards and Implementation Procedures.

As required by 40 CFR 124.8, IDEM's fact sheets described the facility operations and wastewater treatment processes; the description is adequate. In addition, fact sheets include location maps and flow schematic diagrams which provide a clear understanding relative to the overall facility operations, treatment processes, expected wastestreams, and location of the discharge within the receiving stream.

IDEM's fact sheets clearly and consistently identify the appropriate receiving water, applicable beneficial uses and water quality standards and they discuss stream impairment status and whether a TMDL applies to the discharge.

Permit writers evaluate TBELs and WQBELs and identify in fact sheets the regulatory basis for each effluent limitation and discuss each pollutant of concern individually. This is a program strength. However, IDEM's fact sheets do not always clearly indicate whether an effluent limitation is a TBEL or a WQBEL and do not distinctly demonstrate that the permit writer compared TBELs and WQBELs to establish the most stringent effluent limitation.

Program Strengths

Effluent limitations are clearly presented in the permit and fact sheets and are appropriate for the type of facility and discharge. Municipal permits established effluent limitations appropriately as average

weekly and average monthly limitations; and industrial permits established effluent limits appropriately as maximum daily and average monthly. WQBELs are calculated correctly and applied appropriately according to the RPE evaluation and WLA.

IDEM's fact sheets are presented in an organized, clear, and logical format. In addition, IDEM is continually updating templates for permits and fact sheets. Certain templates were reviewed during the PQR. The updates are beneficial and create a stronger document with a thorough rationale for the effluent limitations and permit requirements. Fact sheets include useful maps and flow schematic diagrams, consistently characterize the receiving stream quality, and identify the rationale for each pollutant limited in the permit. IDEM's program is strengthened by their attention and dedication to continual process and document improvements.

Areas for Improvement

IDEM's fact sheets do not consistently identify whether an effluent limitation is a TBEL or a WQBEL and do not distinctly demonstrate that the permit writer compared TBELs and WQBELs to establish the most stringent effluent limitation.

Fact sheets lack specific discussion of data from the permit application that was considered in the overall evaluation of the need for effluent limitations. Fact sheets would be strengthened with a brief discussion of how data from all sources were considered in the water quality assessment.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•IDEM should identify for each effluent limitation whether it is a TBEL or a WQBEL and should demonstrate that IDEM compared TBELs and WQBELs to establish the more stringent as the final effluent limitation. •IDEM should include specific discussion of the sources of data evaluated in the water quality assessment/need for effluent limitations, to provide a clear linkage to the available data sources.

C. Monitoring and Reporting Requirements

Background and Process

NPDES regulations at 40 CFR 122.41(j) require permittees to periodically evaluate compliance with the effluent limitations established in their permits and provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual reporting of monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48 requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. 40 CFR 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify appropriate monitoring locations to ensure compliance with the permit limitations and provide the necessary data to determine the effects of the effluent on the receiving water. A complete fact sheet will include a description and justification for all monitoring locations required by the permit. Permits must also specify the sample collection method for all parameters required to be monitored in the permit. The fact sheet should present the rationale for requiring grab or composite samples and discuss the basis of a permit requirement mandating use of a sufficiently sensitive 40 CFR 136 analytical method.

IDEM's permit writers develop monitoring and reporting requirements for municipal permits using an internal guidance document that identifies appropriate sampling frequency and type, according to the type of wastewater treatment process employed at the plant. IDEM noted that the industrial permit writers do not have written guidance for establishing monitoring requirements, but they generally follow requirements contained in 40 CFR 122 for establishing specific sampling types. IDEM permit writers establish sampling locations on a case-by-case basis. Generally, permit writers continue monitoring requirements from the previous permit unless there is a reason to adjust specific monitoring requirements. Fact sheets provide rationale for monitoring requirements.

All permits reviewed appropriately required permittees to submit DMRs electronically and required the use of sufficiently sensitive EPA-approved analytical methods capable of quantifying pollutants at concentrations equal to or less than effluent limitations. In addition, all permits reviewed required WET testing and detailed specific WET testing requirements.

Program Strengths

IDEM establishes appropriate monitoring requirements in NPDES permits for municipal and non-municipal facilities. IDEM adequately considers the type of treatment process, effluent variability, and compliance history in establishing monitoring requirements. Monitoring requirements, including monitoring location, are clearly identified in permits. Permits appropriately require the use of sufficiently sensitive EPA-approved (i.e., 40 CFR 136) analytical methods and require electronic submittal of DMRs. Permits clearly identify reporting requirements.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•The PQR did not identify any recommended action items for this section.

D. Standard and Special Conditions

Background and Process

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain certain "standard" permit conditions. Further, the regulations at 40 CFR 122.42 require that NPDES permits for certain categories of dischargers must contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition, unless such alteration or omission results in a requirement more stringent than those in the federal regulations.

Permits may also contain additional requirements that are unique to a particular discharger. These case-specific requirements are generally referred to as "special conditions." Special conditions might include requirements such as: additional monitoring or special studies such as a mercury minimization plan; best management practices (see 40 CFR 122.44(k)); or permit compliance schedules (see 40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

Part II of IDEM's permits contain standard conditions for NPDES permits, based on boilerplate language. The standard conditions are complete and consistent with federal standard conditions. IDEM's permits reference Indiana rules and statutes and do not include reference to the federal regulatory citations for standard conditions.

IDEM addresses special conditions, such as requirements for whole effluent toxicity testing, development of a Toxicity Reduction Evaluation (TRE), compliance schedules, and pollutant minimization programs, within Part I of the permit. In addition, IDEM's permits may also include specific special conditions (e.g., CSO requirements) as an attachment to the permit. IDEM does allow for variances; the state implements the Streamline Mercury Variance as well as CWA Section 316(a) thermal variances. IDEM has developed specific guidance to support permit writers with implementation of these complex permitting topics: Streamlined Mercury Variance internal guidance dated June 13, 2019 and Guidance for Conducting a Demonstration as a Requirement of 316(a) Alternative Thermal Effluent Limitation Request dated March 2015 which is on IDEM's website.

Program Strengths

IDEM's standard conditions are well organized, clearly presented, complete, and consistent with federal standard conditions established in 40 CFR 122.41 and 122.42. Special studies are clearly identified and are appropriately discussed in the supporting fact sheets.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•The PQR did not identify any essential action items for this section.

E. Administrative Process

Background and Process

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.5 and 40 CFR 124.6); coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR 124.11 and 40 CFR 124.12); responding to public comments (40 CFR 124.17); and, modifying a permit (if necessary) after issuance (40 CFR 124.5). EPA discussed each element of the administrative process with Indiana, and reviewed materials from the administrative process as they related to the core permit review.

IDEM provides public notice of draft NPDES permits for 30 days or sometimes longer for high-profile/interest permits. IDEM noted that where the discharge is close to a county line, IDEM will publish a dual public notice in the neighboring county; IDEM referred to this as an "enhanced public notice." Permit writers follow their SOP *How to Process and Draft Individual NPDES permits* dated April 30, 2019 which outlines how to public notice permits. While the comment period lasts 30 days, IDEM will accept late comments. All comment letters are retained in the permit's administrative record. When comments are received, permit writers develop a "response to comments" document and attach the document to the fact sheet. IDEM's industrial permit writers draft a "post public notice addendum" indicating whether comments were received. This is a program strength and the PQR team recommends that the municipal permits staff develop a similar document for the administrative record.

IDEM noted they have received few permit appeals and generally those have been for industrial permits and requested by the permittee. During an appeal, IDEM rarely enters into agreements for stays on permits; IDEM aims to resolve issues during the appeals process and avoid permit stays.

Program Strengths

IDEM implements an efficient process for providing public notices of draft permits; enlisting support from administrative staff during issuance of the draft permit and ensuring receipt by the permittee, EPA Region 5, and other agencies with whom IDEM consulted on permit conditions. IDEM demonstrates consistent implementation, clear tracking, and documentation of the public notice process. Permit writers receive comments directly in response to public notices and document in the administrative record whether comments are received; this provides transparency in the permit record.

Areas for Improvement

Public notices reviewed as part of the administrative record lacked a brief description of the business conducted consistent with 40 CFR 124.10(d)(iii); while certain public notices include very brief statements on this topic and offer little detail regarding the permitted activity. In addition, the hard copies of public notices included in the administrative record lacked a brief description of comment procedures consistent with 40 CFR 124.10(d)(v). Further, public notices for municipal facilities lacked a general description of the location of each existing or proposed discharge point and the name of the receiving water and the sludge use and disposal practice(s), consistent with 40 CFR 124.10(d)(vii). IDEM indicated during the PQR that they would update public notices to include this required information. Since the PQR site visit, the recent public notices available on IDEM's website have included a description of comment procedures. IDEM’s municipal group should adopt procedures for clearly documenting whether comments have been received on the draft permit.

Action Items

Essential	•Ensure that public notices include a brief description of the business conducted consistent with 40 CFR 124.10(d)(iii). •Ensure that a brief description of comment procedures consistent with 40 CFR 124.10(d)(v). •Ensure that a general description of the location of each existing or proposed discharge point and the name of the receiving water and the sludge use and disposal practice(s) consistent with 40 CFR 124.10(d)(vii). •NOTE: *IDEM indicated during the PQR that they would update public notices to include this required information. Since the PQR, it appears that recent public notices available on IDEM's website include a description of comment procedures.*
Recommended	•IDEM's municipal group should adopt procedures for clearly documenting whether comments have been received on the draft permit.

F. Administrative Record and Fact Sheet

Background and Process

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis;[2] all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file and final response to comments.

Regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit

[2] Per 40 CFR 124.8(a), every EPA and state-issued major or general permit must be accompanied by a fact sheet.

application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

The file review and discussions with various staff from both the municipal and industrial permitting team during the PQR demonstrated that IDEM has developed and maintains a consistent and solid administrative record. The administrative record in the VFC and working files maintained in the DocSet are well organized, logical, clear, concise, and complete. During the onsite PQR, permit writers discussed their processes for permit development, developing and maintaining the permit's administrative record, and illustrated they are knowledgeable in necessary components of the administrative record and developing a defensible permit.

Program Strengths

The VFC houses the electronic version of the administrative record and is complete, including historical permit documents, and for the current permit: correspondence, permit application, RPE evaluations, fact sheets, comments received and response to comment documents, and the final permit.

IDEM's administrative records and internal DocSet that contains the permit writers' working files during permit development are well organized and appear complete. IDEM staff illustrated a well-developed process for developing and maintaining the DocSet (and eventual VFC record), ensuring that appropriate files are transferred and uploaded to the VFC upon final permit issuance.

Areas for Improvement

The PQR team noted that permit records would be strengthened with documentation of IDEM's consultation with coordinating agencies (e.g., Fish and Wildlife Service) for CWA Section 316(b) BTA determinations.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•Permit records should include documentation of IDEM's consultations with agencies (e.g., Fish and Wildlife Service) for CWA Section 316(b) BTA determinations.

IV. NATIONAL TOPIC AREA FINDINGS

National topic areas are aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national scale. National topic areas are reviewed for all state PQRs. The national topics areas are: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES

Permits with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements.

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

Nutrient pollution is an ongoing environmental challenge; however, nationally permits often lack nutrient limits. It is vital that permitting authorities actively consider nutrient pollution in their permitting decisions. Of the permits that do have limits, many are derived from wasteload allocations in TMDLs. For this section, waters that are not protected by a TMDL are considered. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions. For the purposes of this topic area, ammonia is considered as a toxic pollutant, not a nutrient.

Federal regulations at 40 CFR 122.44(d)(vii)(A) require permit limits to be developed for any pollutant that causes or has the reasonable potential to cause or contribute to an impairment of water quality standards, whether those standards are narrative or numeric. To assess how nutrients are addressed in the IDEM program, EPA reviewed all 10 individual permits selected for the PQR and identified 5 for further evaluation: 5 permits that discharge to different impaired water bodies but do not have a completed TMDL.

The State has responsibility under the Clean Water Act to protect waterbodies by designating the waterbody's beneficial uses, adopting water quality standards (WQS) to protect those uses, and setting permit limitations where appropriate to meet the WQS. State WQS are expressed quantitatively, as a pollutant mass or concentration, and qualitatively in narrative WQS. Collectively the narrative WQS, commonly called the "free-from" standard, identifies conditions such as toxics in toxic amounts or unnatural plant growth that should be absent in the waterbody. Many narrative WQS are closely tied to nutrient pollution which in turn is closely tied to causative factors such as nitrogen and phosphorus.

NPDES permits generally include the narrative WQS as a special condition. In contrast, numeric water quality-based effluent limitations (WQBELs) for nitrogen or phosphorus are less common. When a numeric WQBEL is included for these nutrients, it is likely the outcome of a completed TMDL. CWA regulations are clear that the time to fully address water quality protection is at permit issuance, not at the time of TMDL approval.

In an effort to equip states with a framework to scientifically support numeric nutrient water quality criteria, EPA in 2000 published *Ambient Water Quality Criteria Recommendations* for rivers and streams in the nutrient ecoregion encompassing Indiana (EPA 822-B-00-017). The recommendations in this document are not laws or regulations but are guidance for states to use as a starting point for setting numeric criteria, a key component of State WQS.

In 2011, the EPA Office of Water issued a memorandum to EPA Regional Administrators recommending greater engagement with states toward establishing "a work plan and phased schedule for N and P criteria development for classes of waters...[and] interim milestones including but not limited to data collection, data analysis, criteria proposal, and criteria adoption consistent with the Clean Water Act." Indiana's interim milestones are included in Version 5 of the *Indiana State Nutrient*

Reduction Strategy (SNRS) issued jointly in 2015 by IDEM and the Indiana State Department of Agriculture Division of Soil Management. The SNRS stated objectives are to:

- Encourage voluntary, incentive-based, practical and cost-effective actions,
- Use and strengthen existing programs
- Identify existing and additional funds needed and funding sources
- Identify opportunities for innovative, market-based solutions
- Follow adaptive management

As stated in the SNRS, "IDEM's position is that applying the State treatment standard of 1 mg/L total phosphorus to this limiting nutrient sufficiently addresses potential water quality impacts from point sources to fresh water systems; thus, there is no need to interpret Indiana's narrative criteria into water quality-based effluent limits at this time." With this as a starting point, IDEM has since committed to utilizing tools and programs (e.g. 327 IAC 5-10-2 and the Non-rule Policy Document) already in place to reduce phosphorus loads from the State's largest municipal point source discharges. The tools and programs are discussed below in the Findings.

To assess how nutrients are addressed in the IDEM NPDES program, EPA reviewed five NPDES permits, each in different receiving water bodies. Each of the permits regulate discharges to a receiving water that does not support the designated uses of full-body contact recreational use, and/or a well-balanced aquatic community, and nutrients is listed as a cause of receiving water use impairment.[3]

To evaluate permit limitations and special conditions for nutrients, the EPA review considered supporting documentation in each permit's administrative record as well as information about the receiving water from the 2016 Integrated Report which identifies impaired waters on the State's CWA Section 305(b) list and probable causes of impairment on the CWA Section 303(d) list. The EPA review also considered how permits applied narrative and numeric WQS established by 327 IAC 2-1-6, and effluent standards at Indiana Administrative Code Title 327 for nutrients. The review also considered IDEM's No-rule Policy Document (NPD) established under the authority of Indiana Code Title 13 Section 15-1-11-5, *Public awareness and participation*.

<u>IDEM Regulatory Tools and Programs.</u>

Indiana Administrative Code Title 327 *Water Pollution Control Division*, Articles 2 - *Water Quality Standards* and 5 - *Industrial Wastewater Pretreatment Programs and NPDES.* Article 2 expresses narrative WQS in sections 2-1-6 (a) and (b), as follows:

> (a) All surface waters shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to municipal, agricultural and other land use practices, or other discharges that do any of the following: (A) Will settle to form putrescent or otherwise objectionable deposits. (B)Are in amounts sufficient to be unsightly or deleterious. (C)Produce (i) color, (ii) visible oil sheen, (iii, odor, or (iv) other conditions. (D) are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to (i). create a nuisance, (ii) be unsightly, or (iii) otherwise impair the

[3] Source 2016 Integrated Report

designated uses. (E)Are in amounts sufficient to be acutely toxic, or to otherwise severely injure or kill, aquatic life, other animals, or humans. And,

(b) There shall be no substances that result in offensive odors in the vicinity of the water, and the concentration of dissolved oxygen shall average at least 5.0 mg/L per calendar day and not less than 4.0 mg/L at any time.

It is important to note that Article 2 does not include numeric water quality criteria for nutrients. Where impairment is related to nutrients, IDEM generally does not attribute the source of impairment to a specific chemical parameter or indicator. As IDEM states: "In some cases, only the symptoms of impairment can be identified. For example, IDEM may have evidence that biotic communities in a waterbody are impaired but the data are insufficient to determine the actual pollutant or stressor causing the impairment. In these cases, the symptoms are treated as the cause of impairment." (IDEM 2016 Integrated Report, p. 44).

Article 5, Section 5-10-2(2)(a) provides the State broad NPDES authority to require phosphorus removal or control facilities if the State determines that phosphorus reduction is needed to "protect downstream water uses or ensure that WQS applicable to the affected waters are met." It was through this section and Indiana Code Article 13 that IDEM established a non-rule policy to establish the phosphorus technology-based limits for the class of discharges described later in this report. Section 13-14-1-5 provides that IDEM "shall develop and implement a program of public awareness and participation to assure maximum citizen involvement in the evolution and continuation of the environmental programs in the State." In addition, Section 5-10-2 prescribes phosphorus removal for point source discharges that have a daily discharge of 10 pounds per more of phosphorus; are located within the Great Lakes Basin; discharge directly to a lake or reservoir; or enter a tributary within 4-miles upstream of a lake or reservoir.

Permit and Fact Sheets

All five permits include the narrative standard from 327 IAC 2-1-6, which reads, "At all times the discharge from any and all point sources specified within this permit shall not cause the receiving waters to contain substances, materials, floating debris, oil, scum, or other pollutants…".

Of the five permits, four (Portland WWTP, Corydon WWTP, Chesterton WWTP, and Churbusco WWTP) impose 1.0 mg/L monthly average phosphorus limitations as soon as possible but not later than three years from the permit effective date. The phosphorus limitations are based on technology standards at 327 IAC 5-10-2 and WATER-019-NPD. Phosphorus limitations for Portland, Corydon, and Chesterton are due to their DAF ($\geq$ 1.0 MGD), and the Churbusco phosphorus limitation is due to the discharge being located within 40 miles upstream of a lake or reservoir. Phosphorus is was absent from the Brooklyn WWTP, because of facility size (the DAF is 0.34 MGD) and location (outside the 40 miles zone of lake/reservoir influence).

Phosphorus monitoring and limitations are expressed in the four permits as "phosphorus" without a distinction between forms of the phosphorus parameter (e.g., total, elemental, dissolved, or organic). For clarity, the permit should specify that the limit is total phosphorus, and ideally, include the STORET number for the parameter.

Where there is impairment of narrative standard and no TMDL, IDEM did not translate the narrative into numeric WQBELs to control nutrient discharges. EPA learned that IDEM does not have a process to determine the discharge's RPE relative to the narrative standard (specifically for nutrients) and therefore does not generate numeric WQBEL targets based on RPE. As discussed above, regulations at 40 CFR 122.44(d) require the permitting agency to conduct an RPE evaluation and set a WQBEL when the agency makes an affirmative demonstration that that an exceedance occurs. This applies to all criteria including narrative criteria.

Fact sheets address nutrients in the Receiving Stream and Effluent Limitations and Rationale sections. The Receiving Stream section for two of the three major permits state that the receiving stream is impaired for nutrients (Portland) or impaired due to excessive nutrients (Corydon) and refer to the appropriate 303(d) list. The other major facility's fact sheet does not address use attainment status. For Churbusco (minor), the administrative record includes a wasteload allocation report that describes the discharge location as "8-miles upstream of a small pond...[but] it is unclear whether this pond would be classified as a Lake in the State of Indiana. If it is considered a lake, then phosphorus removal may be required by 321 IAC 5-10-4." The Brooklyn (minor) briefing memo Receiving Stream section does not address use attainment status. IDEM should ensure that fact sheets and briefing memos describe the receiving water's use attainment status particularly when the waters are nutrient impaired.

The Effluent Limitations and Rationale section of the fact sheet for each of the three major permits devotes two full paragraphs to describe phosphorus limits, and two to describe Dissolved Oxygen (DO) limits where present. It is IDEM's practice to use Fact Sheets and Briefing Memos to describe the rationale for limitations and monitoring requirements *only* if the parameter is included in the permit. The Brooklyn permit has no phosphorus requirements, so phosphorus is not discussed in the briefing memo. Consequently, the fact sheet and permit record do not provide information about whether phosphorus was considered for the Brooklyn permit. A discussion would be appropriate under 327 IAC 5-10-2(a)(2), shown below, which makes no distinction between small and large dischargers:

> Phosphorus removal or control facilities shall be required for a point source discharge where the commissioner determines, irrespective of the quantitative total phosphorus content of the discharge, that phosphorus reduction is needed to protect downstream water uses or to ensure that WQS applicable to the affected waters of the State are met.

The Cherbusco Effluent Limitations and Rationale section of the briefing memo appropriately includes information about phosphorus requirements but does not indicate whether the rationale for the phosphorus limit is 321 IAC 5-10-4, or something else.

Turning from phosphorus to nitrogen, the other nutrient causative parameter, none of the five permits include limitations or monitoring requirements for total nitrogen.

Where dissolved oxygen (DO) is limited, it is based not on nutrient impairment but on the State's DO criteria at 327 IAC 2-1-6(b)(3).

Program Strengths

Permits correctly apply IDEM rules at 327 IAC Titles 2 and 5, pertaining to phosphorus, and IDEM is making progress to implement phosphorus limits through a non-rule policy issued December 12, 2014 (Policy number WATER-091-NPD). Consistent with the SNRS, IDEM views this policy as a practical technology-based approach to set a standard of 1 mg/L total phosphorus statewide to municipal wastewater discharges with design average flows of 1 MGD or greater. IDEM estimates that the policy will ultimately result in a 60% reduction of total phosphorus loads across the state compared to pre-2015 conditions. In addition, IDEM anticipates that the policy will lay groundwork for potentially more restrictive water quality-based limits in the future by raising POTW awareness about the need for nutrient control. IDEM is commended for proactively reaching out to stakeholders prior to issuing the policy.

A similar approach of stakeholder engagement and policy may lead to future success in controlling nitrogen pollution. When the SNRS was published, IDEM had proposed monthly Total Nitrogen (TN) monitoring in NPDES permits effective after January 1, 2019, to collect data for "a better understanding of nitrogen loadings in Indiana waters and aid the State of Indiana with future updates of the State of Indiana's nutrient reduction efforts."

Areas for Improvement

To more closely align with 40 CFR § 122.44(d)(1), the State should perform an RPE evaluation and, for discharges that have RP, develop permit limitations for facilities discharging nutrients to nutrient-impaired waters that are not protected by a TMDL. NPDES regulations at 40 CFR 122.44(d)(1) state that a reasonable potential analysis must be performed and that effluent limits must be included in permits as needed to ensure the achievement of water quality standards.

For clarity and to enhance enforceability, permits should specify the specific nutrient parameter (e.g., total phosphorus) and, ideally, include the STORET number for the parameter.

To improve consistency of fact sheets and briefing memos in the level of detail regarding nutrient water quality impairment, IDEM should ensure that they include a full description of the receiving water's use attainment status particularly when the waters are on the 303(d) list for nutrient impairment.

Action Items

Essential	•The PQR did not identify any essential action items for this section.
Recommended	•For greater regulatory certainty, IDEM should continue making progress toward establishing effluent limits in permits for any pollutant with the reasonable potential to cause or contribute to an impairment of water quality standards, whether those water quality standards are numeric or narrative, consistent with requirements at 40 CFR 122.44, including sections 122.44(d)(1)(iii) through (vi). •As IDEM continues to implement its approach to control phosphorus from municipalities ≥ 1 MGD or upstream of a lake or reservoir, it should develop an approach for ensuring phosphorus limits are developed where appropriate for minor municipalities and industrial dischargers based on characteristics of the discharge. •Document in the permit record whether the State assessed the discharge proximity to a downstream lake/reservoir. Similarly, the permit record should document if downstream rivers within a specified, reasonable distance are nutrient impaired. •Permits should specify the specific nutrient parameter (e.g., total phosphorus) and, ideally, include the STORET number for the parameter. •Document in the permit record the basis of decisions for nutrient controls in municipal permits, including decisions made not to include nutrient monitoring or limitations for dischargers to nutrient-impaired waters.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

Background

The PQR National topic area *Effectiveness of POTW NPDES Programs with Food Processor Contributions* evaluates successful and unique practices with respect to food processor industrial users (IUs) by evaluating whether appropriate controls are included in the receiving POTW's NPDES permit and documented in the NPDES permit fact sheet or statement of basis. This topic area aligns with the EPA Office of Enforcement Compliance and Assurance National Compliance Initiative, Reducing Significant Noncompliance with National Pollutant Discharge Elimination System Permits by gathering information that can be used to provide permit writers with tools to maintain or improve POTW and IU compliance with respect to conventional pollutants and nutrients.

The food processing sector manufactures edible food stuffs and products (such as dairy, meat, vegetable, bakery, grains) from raw animal, vegetable and marine material. The main constituents of food processing wastewaters are conventional pollutants (BOD_5, TSS, oil and grease (O&G), pH, and bacteria) and non-conventional pollutants (such as phosphorus and ammonia). These pollutants are compatible with the POTW treatment system. However, the POTW may not be designed or equipped to treat the intermittent or high pollutant loadings that can result from food processing indirect discharges.

The General Pretreatment Regulations at 40 CFR 403.5(c)(1) require POTWs with approved pretreatment programs to continue to develop and apply local limits (LLs) as necessary to control any pollutant that can reasonably be discharged into the POTW by an IU in sufficient amounts to pass through or interfere with the treatment works, contaminate its sludge, cause problems in the collection system, or jeopardize workers. POTWs that do not have approved pretreatment programs may also be required to develop specific LLs as circumstances warrant (40 CFR 403.5(c)(2)). LLs and other site-specific requirements are enforced by the POTW through IU control mechanisms.

This PQR reviews the status of the pretreatment program in Indiana, as well as specific language in Indiana POTW NPDES permits. With respect to NPDES permits, the PQR focused on the regulatory requirements for pretreatment activities and pretreatment programs as listed in Table 3, below.

Table 3. Regulatory Focus for this Section of the PQR

Citation	Description
40 CFR 122.42(b)	POTW requirements to provide adequate notice to the Director of new pollutants
40 CFR 122.44(j)	Pretreatment Programs for POTW
40 CFR 124.3(a) and (c)	The POTW must submit a timely and completed application for an NPDES permit or NPDES permit renewal
40 CFR 124.8(a) and (b)	The permitting authority must prepare a fact sheet for every draft permit for a major NPDES facility. Fact sheets must briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit including references
40 CFR 403.5(a), (b) and (c)	National pretreatment standards: Prohibited discharges
40 CFR 403.3	Definitions
40 CFR 403.8	Pretreatment Program Requirements: Development and Implementation by POTW
40 CFR 403.11	Approval procedures for POTW pretreatment programs and POTW granting of removal credits

The IDEM issues NPDES permits directly to POTWs in Indiana. IDEM does not have the authority to implement the pretreatment program; therefore, EPA Region 5 is the Approval Authority for Indiana POTWs. EPA Region 5 implements the pretreatment program which includes approving pretreatment programs established by local Control Authorities and reviewing and approving modifications of existing approved program elements such as Sewer Use Ordinances (SUO), local limits evaluations, annual reports, Enforcement Response Plans, and taking enforcement action as needed. POTWs with approved pretreatment programs have the authority to issue permits to industrial users discharging to the POTW. In addition, or alternatively, many POTWs apply surcharge fees for the pollutant loading from food processors and other high-strength conventional pollutant dischargers. For industrial users

discharging to POTWs without approved POTW pretreatment programs, EPA Region 5 is the Control Authority. The table below provides information on the pretreatment universe in Indiana.

Table 4. Indiana SIUs by Pretreatment Program Status

POTWs in Indiana[1]		IUs controlled in Approved POTW Pretreatment Programs[1]		IUs managed by EPA (IUs discharging to POTWs Without Approved Pretreatment Programs)[2]	
Total	With Approved Programs	SIUs	CIUs	SIUs	CIUs
572	47	583	293	24	17

[1 Data source: EPA Region 5 collected this data through the ICIS database in 2019.]
[2 Data source: EPA OWM provided this data through an ICIS database search conducted in 2016.]

In addition to the NPDES program, IDEM's OWQ Permitting Branch provides expertise to approved pretreatment programs in support EPA Region 5. Further, the IDEM NPDES program regulates SIUs to municipal sewage treatment plants without approved pretreatment programs through Industrial Waste Pretreatment (IWP) permits for which compliance reports are electronically submitted using NetDMR, which is uploaded into the EPA ICIS System. Although IDEM does not have authority to implement the pretreatment program, EPA has encouraged IDEM to take on local program administrative responsibilities.

Four POTW NPDES permits were reviewed as part of the pretreatment PQR. The design average flow among these four POTWs range from 1.5 MGD to 10 MGD. Two of these POTWs (New Castle and LaPorte) implement pretreatment programs approved by EPA Region 5 and issue Indirect discharge permits to industrial users. The other two POTWs (Delphi and Corydon) reviewed do not have approved pretreatment programs. For POTWs without an approved pretreatment program, IDEM issues IWP permits directly to the industrial users discharging to the POTW. A total of seven permits for food processors discharging into those POTWs, and their associated applications and fact sheets, were reviewed as part of the PQR. SUOs were also found online for each of the POTWs. EPA Region 5 selected the permits, listed in the table below, using data retrieved from EPA's ECHO (Enforcement and Compliance History Online) and ICIS databases; annual reports submitted to EPA Region 5 by POTWs with federally approved pretreatment programs; and discussions with IDEM. In addition, EPA Region 5 contacted several POTWs by telephone to confirm the presence of food processor inputs into their sewer system.

The SUOs for the two approved POTW Pretreatment Programs (New Castle and LaPorte) establish local limits for different pollutants. The City of New Castle's SUO contains local limits for only oil and/or grease (100 mg/L) with respect to conventional pollutants and no limits were established for nutrients. The City of New Castle's SUO did not define surcharges, but surcharges are defined in the City's ordinance that specifies rate information. The City of LaPorte's SUO contained local limits that addressed pH (prohibition < 6.0 and > 10.5), ammonia nitrogen (100 mg/L), and fats, oil, and grease (FOG) (150 mg/L). The City of Laporte's SUO contained surcharge values for BOD, TSS, and ammonia. The surcharge is to be applied to all users whose wastewater exceeds normal domestic strength for these constituents, as defined by the SUO.

The SUOs for the City of Delphi and the Town of Corydon, the two POTWs without approved pretreatment programs, contain local limits. The City of Delphi has established limits in pounds of allowed pollutant for CBOD (3,580 lbs/day), TSS (4,390 lbs/day), ammonia-nitrogen (860 lbs/day), total Kjeldahl nitrogen (TKN) (reporting only at this time), and oil and grease (670 lbs/day). The City of Delphi also applies a surcharge when these pollutants exceed the local limit, in addition to any enforcement action for noncompliance. The Town of Corydon has established concentration-based limits for BOD (250 mg/L), TSS (250 mg/L), TKN (30 mg/L), copper (0.14 mg/L monthly average, 0.3 mg/L daily maximum), and oil and grease (100 mg/L). The Town of Corydon also applies surcharges when TSS exceeds 250 mg/L, CBOD exceeds 250 mg/L, and TKN exceeds 30 mg/L.

Table 5. Permits Selected for the Pretreatment Topic Area

Permittee	Permit No.	Approved Pretreatment Program?	Design Flow Average (MGD)	No. of SIUs	No. of Food Processors[1]	Controls on Conventional Pollutants or Nutrients in SUO?
City of New Castle	IN0023914	Yes	6.4	3	1	O&G
City of LaPorte	IN0025577	Yes	4.1	10	4	pH, ammonia nitrogen, FOG surcharge
City of Delphi	IN0021377	No	1.35	1	1	CBOD, TSS, ammonia-nitrogen, total, TKN, and O&G surcharge
Town of Corydon	IN0020893	No	0.92	1	1	BOD, TSS, TKN, O&G surcharge

[[1] Data source: EPA Region 5 collected this data through the ICIS database.]

Seven food processing industrial user permits were also reviewed as part of the PQR; they are identified in the table below.

Table 6. Industrial User Permits Reviewed for the Pretreatment Topic Area

Facility Name	Permit Number	Receiving POTW	Type of Food Processor	Classification by POTW	Average Process Wastewater Discharge (gallons per day [gpd])	Monitored Pollutants
Boars Head Provisions, Inc.	B0220_ mod. 1	City of New Castle	Meat Products	SIU	250,000	Total Phosphorus, BOD, TSS, O&G, pH

Alpha Baking Company	11	City of LaPorte	Commercial Bread Baking	SIU	31,500	BOD, TSS, O&G, pH
American Licorice Company	26	City of LaPorte	Commercial Candy Manufacturing	SIU	17,300	BOD, TSS, O&G, pH
HRR Enterprises	25	City of LaPorte	Meat Products, Rendering	CIU[1]	9,200	Ammonia-N, BOD, TSS, O&G, pH
Lewis Baking Company	7	City of LaPorte	Commercial Bread Baking	SIU	12,400	Ammonia-N, BOD, TSS, O&G, pH
Indiana Packers Corporation	INP000047	City of Delphi	Pork Processing	SIU	870,000	Flow, CBOD, TSS, O&G, ammonia, TKN, COD
Tyson Chicken, Inc.	INP000117	Town of Corydon	Poultry Processing	SIU	488,000	Flow, BOD, TSS, TKN, O&G

[1] The permit issued to the industrial user classifies the industry as subject to 40 CFR Section 432 Subpart J. However, there are no standards for indirect dischargers in this subpart. Therefore, the industry should not be classified as a CIU.

The table below provides a comparison of food processor pollutant monitoring frequencies and limits with those of the receiving POTW.

Table 7. Comparison of Monitoring Frequencies and Limits for Food Processors and Receiving POTW

IU and Receiving POTW	**Pollutant Monitoring Frequency and Limit**									
	Total P		**Ammonia**		**BOD**		**TSS**		**O&G**	
Boars Head Provisions, Inc.	Monthly	Report Only	NA	NA	Monthly	Report only	Monthly	Report only	Monthly	100 mg/L
City of New Castle	Daily	1.0 mg/L	Daily	Summer 1.5 mg/L[1] Winter 3.4 mg/L[1]	Daily	Summer 10 mg/L[1] Winter 25 mg/L[1]	Daily	Summer 12 mg/L[1] Winter 30 mg/L[1]	Monthly	Report only
Alpha Baking Company	NA	NA	NA	NA	5X Month	300 mg/L[1]	5X Month	300 mg/L[1]	5X Month	150 mg/L[1]

IU and Receiving POTW	Pollutant Monitoring Frequency and Limit									
	Total P		Ammonia		BOD		TSS		O&G	
American Licorice Company	NA	NA	NA	NA	5X Month	300 mg/L[1]	5X Month	300 mg/L[1]	2X Month	150 mg/L[1]
HRR Enterprises	NA	NA	2X Year June/Dec	47.3 mg/L[2]	5X Month	300 mg/L[1]	5X Month	300 mg/L[1]	Sampling not required	50 mg/L[1]
Lewis Baking Company	NA	NA	Not specified in permit	100 mg/L[2]	5X Month	300 mg/L[1]	5X Month	300 mg/L[1]	2X Month	150 mg/L[1]
City of Laporte	Monthly	Report Only	Daily	Summer 1.6 mg/L[1] Winter 1.8 mg/L[1]	Daily	Summer 20 mg/L[1] Winter 25 mg/L[1]	Daily	Summer 24 mg/L[1] Winter 30 mg/L[1]	NA	NA
Indiana Packers Corporation	NA	NA	Daily	780 lbs/day	Daily	3,580 lbs/day	Daily	4,390 lbs/day	Monthly	670 lbs/day
City of Delphi										
Tyson Chicken, Inc.	NA	NA	Weekly	330 lbs/day[1, 3]	Daily	776 lbs/day[1]	Daily	523 lbs/day[1]	Quarterly	465 lbs/day[1]
Town of Corydon	Interim – Monthly Final – 5X week[4]	Interim – Report Only Final 1.0 mg/L[4]	5X Week	Summer 1.3 mg/L[1] Winter 1.9 mg/L[1]	5X Week	Summer 15 mg/L[1] Winter 25 mg/L[1]	5X Week	Summer 18 mg/L[1] Winter 30 mg/L[1]	NA	NA

[1] Monthly Average
[2] Daily Maximum
[3] Limit is for TKN, not ammonia.
[4] NPDES permit requires a written progress report to IDEM six months after permit issuance. The progress report includes, among other items, a description of the method(s) selected for meeting the final requirements for phosphorus. The final effluent limitations for phosphorus are deferred for the term of this compliance schedule, unless the final effluent limitations can be met at an earlier date. The permittee is to notify IDEM as soon as the final effluent limitations for phosphorus can be met. Upon receipt of such notification the final limitations for phosphorus will become effective, but no later than 36 months from the effective date of this permit. Monitoring and reporting of effluent phosphorus is required during the interim period.

Program Strengths

All POTW permits reviewed for pretreatment as part of the PQR contain requirements to implement the general and specific prohibitions established at 40 CFR 403.5(a)(1) and (b). Both the permits and fact sheets reviewed for POTWs with approved pretreatment programs (City of New Castle and the City of LaPorte) identify the dates the programs were approved. The permits for POTWs with approved pretreatment programs state, within the special conditions section, that permittees must operate a

POTW pretreatment program in accordance with the federal General Pretreatment Regulations at 40 CFR 403, state, and local laws and regulations, and the approved pretreatment program and any approved modifications. Their fact sheets also document the number of noncategorical SIUs and CIUs, and the POTW total design flows. All POTW permits contain the requirements for notification of new introduction and significant changes in industrial flow or character in accordance with 40 CFR 122.42.

Even though the POTW fact sheets did not clearly identify the POTW conventional pollutant capacity, all of the permits issued to the food processors have similar monitoring frequencies to the receiving POTWs, which may provide the POTWs (and EPA and IDEM) with information to assess if the industrial conventional pollutant flow affects the POTW operations. The five industrial user permits issued by the approved POTW pretreatment programs to food processing IUs include monitoring and limits for conventional pollutants (BOD, TSS, and oil & grease). Two of the user permits issued by the approved POTW pretreatment programs to food processing IUs include monitoring and limits for nutrients (ammonia-nitrogen).

The two IWP permits issued by IDEM to the industrial users discharging to a POTW without an approved pretreatment program include monitoring and limits for conventional pollutants. One permit includes monitoring and a limit for TKN (Indiana Packer Corporation) and the other includes monitoring and a limit for ammonia (Tyson Chicken, Inc.).

Areas for Improvement

The information provided by the POTW in the NPDES application was incomplete concerning the information provided for each SIU. Information in the following areas was either missing or incomplete: description of all industrial processes that contribute to the SIUs discharge; whether the SIU is subject to local limits; and whether any problems at the POTW (e.g., upsets, pass through, interference) have been attributed to the SIU in the past four and one-half years. (As a point of information, approved POTW pretreatment programs may request the Director to have this information waived if the applicant submitted substantially identical information in its annual report submitted within one year of the application or its pretreatment program. See 40 CFR 122.21(j)(6)(iii). This request would then be referenced in the application and information referenced in the fact sheet.)

Although all POTW permits reviewed include the required conditions under 40 CFR 122.42(b), it is recommended that the permits be revised to define the timeframe for “adequate” notice. Furthermore, the permits only require notice to IDEM. The permits should also require that this information be provided to EPA Region 5 to ensure that the Region is aware of changes that may require the POTW to develop a pretreatment program or make changes to its existing pretreatment program.

None of the POTW NPDES permit fact sheets reviewed identify the POTW organic (conventional) and nutrient pollutant capacity, whether the POTWs accept hauled waste (which might affect capacities), nor do they identify and characterize the contributing industrial dischargers, even though the POTWs’ SUOs have local limits and/or surcharge values (see above) for conventional pollutants and nutrients. Inclusion of this information in the POTW NPDES permit fact sheets or administrative record is important for documenting the rationale for WWTP monitoring and sampling requirements and

inclusion of language regarding the control of industrial discharges, to enable the permit writer and inspector to assess if industrial loading exceeds what the POTW can safely accept and treat, as well as needed to assess whether the dischargers are SIUs (discharge ≥5% hydraulic or organic capacity of the POTW). It is recommended that the permittee be required to determine its organic capacity and NPDES permit writer discuss in the fact sheet or administrative record whether the POTW accepts hauled waste, and identify and characterize contributing industrial dischargers, to clarify the need for the pretreatment program, supporting the understanding of domestic to industrial loading capacity that may affect POTW operations. This information will document the types of discharges that were known at the time of permit issuance.

Approved Pretreatment Programs

The permit for the City of New Castle's POTW (issued July 25, 2016 and effective August 1, 2016) did not contain a requirement for a re-evaluation of the SUO and local limits due to the previous permit's SUO and local limits evaluation having been received from EPA in April 2016. Given the timing, this change to the NPDES permit requirements for the current permit seems reasonable. The requirement for re-evaluation of the SUO and local limits must be included in future NPDES permits issued to the City per 40 CFR 122.44(j)(2)(ii).

The POTW permits include the general and specific prohibitions by reference to the federal regulations. It is recommended that the POTW permits be revised to specify the prohibitions found at 40 CFR Section 403.5(a)(1) and (b), rather than incorporating by reference, to clarify requirements and strengthen the permit's effectiveness.

The POTW NPDES permit fact sheets specify the pretreatment program approval dates. However, in most cases a significant period has elapsed, and it is important that information be provided regarding the status of any program modifications that have been submitted, reviewed, and approved since this time. If no modifications have been made since approval, the fact sheets should state as much.

The HRR Enterprises industrial user permit issued by the City of LaPorte classified the industrial user as a categorical industry subject to Subpart J of the Meat and Poultry Products Point Source Category (40 CFR 432); however, that effluent guideline does not contain pretreatment standards. Therefore, the industry should not be considered a CIU; instead, this user would qualify as a SIU due to flow or pollutant contribution, and the basis for the imposed limits be documented.

POTWs without an Approved Program

The IWP Permits issued by IDEM to Tyson Chicken discharging to the Town of Corydon POTW and Indiana Packers Corporation discharging to the City of Delphi POTW require compliance with the SUO but do not contain specific language regarding the following:

- Notification requirements for slug discharges
- Notification requirements for permit violations
- Re-sampling requirements following a violation during self-monitoring

It is recommended that IDEM modify the IWP Permits to include language specifically identifying notification procedures for the elements noted above.

Essential	•The PQR review team did not identify any essential action items in this section.
Recommended	•Revise POTW permits to specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW. Also revise the permits to require that notice be provided to EPA Region 5 to ensure that the Region is aware of changes that may require the POTW to develop a pretreatment program or make changes to its existing pretreatment program. •Revise POTW permits to specify the general and specific prohibitions found at 40 CFR 403.5(a)(1) and (b), rather than incorporating by reference, in order to strengthen the permit's effectiveness. •The permittee should be required to determine its organic capacity in support of determining if the POTW needs to develop a pretreatment program. •Permit fact sheets or administrative records should specify whether the POTW accepts hauled waste and identify and characterize contributing industrial dischargers to clarify the basis for inclusion of language regarding the control of industrial discharges. •Revise industrial user permits, to facilities that discharge to POTWs without an approved pretreatment program, to include slug discharge control and reporting requirements directly into the permit.

C. Small Municipal Separate Storm Sewer System (MS4) Permit Requirements

Background

As part of this PQR, EPA reviewed the State's small MS4 general permit for consistency with the Phase II stormwater permit regulations. EPA recently updated the small MS4 permitting regulations to clarify: (1) the procedures to be used when coverage is by general permits (see 40 CFR 122.28(d)); (2) the requirement that the permit establish the terms and conditions necessary to meet the MS4 permit standard (i.e., "to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act"), including conditions to address the minimum control measures, reporting, and, as appropriate, water quality requirements (see 40 CFR 122.34(a) and (b)); and (3) the requirement that permit terms must be established in a "clear, specific, and measurable" manner (see 40 CFR 122.34(a)).

IDEM's Small MS4 GP is a permit by rule, originally filed in August 31, 1992 and most recently readopted July 29, 2013. This GP was written and issued prior to the MS4 Remand Rule which was effective on January 9, 2017. EPA expects permitting authorities to comply with the final rule when the next permit is being issued following the expiration date of the current permit. IDEM is currently in the process of drafting an MS4 Remand Rule-compliant Small MS4 GP.

Program Strengths

A number of the provisions in the State's permit are written in a clear and effective manner. For instance, the GP consistently uses mandatory language, such as "must" or "shall" when describing permit requirements, which clarifies in those instances what is required of the permittee. Additionally, the permit avoids using conditional language and requiring implementation of BMPs to the MEP, which are both common examples of permit language that is not clear, specific, and measurable (as required by the Phase II regulations at 40 CFR 122.34(a)).

The GP includes multiple requirements for each of the Six Minimum Control Measures (MCMs), which have the potential to be made more clear, specific, and measurable draft permit requirements in the next iteration of the GP under the MS4 Remand Rule.

Areas for Improvement

Specify, within the GP, how and where MS4 Storm Water Quality Management Plans (SWQMPs) should be documented to provide clarity for both the permittee and permitting authority.

Incorporate clear, specific, and measurable permit terms and conditions for the Six Minimum Measures (MCMs).

Include additional requirements for discharges to impaired waters. Additionally, the State should consider specifying in the permit which small MS4 discharge to impaired waters and the relevant pollutant(s) of concern.

Action Items (Small MS4 Permit Requirements)

Essential	•When the Small MS4 Permit is issued, the three following points need to be addressed: •As it relates to 40 CFR 122.34(b), the GP must be sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IDEM should develop clear, specific, and measurable goals for each of the 6 MCMs. IDEM should consider the MS4 permitting compendia produced by EPA and other similar post-MS4 Remand Rule General Permits (most Region 5 states will have analogous permits issued by the time IEPA is ready to reissue) as examples. •As it relates to 40 CFR 122.34(c), the GP must require identification of any impaired water bodies within their boundaries. IDEM is expected to modify the NOI to include an area for MS4s to note any impaired water bodies, and their source of impairment. •As it relates to 40 CFR 122.34(c), the GP must include a section of this GP which includes clear, specific, and measurable requirements for impaired water bodies. Depending on the type of MS4 GP, a comprehensive or two-step approach could be included in the GP in a manner that would pertain to all permittees, or it could be specifically described in the second step authorization.
Recommended	•The GP should be clear about how or where MS4's SWQMPs should be documented. •The SWQMP section of the GP should provide more detail regarding how IDEM expects to manage SWQMP oversight. This should include detailing where MS4s should keep, post, or disseminate their SWQMP, and define the details that must be included.

V. REGIONAL TOPIC AREA FINDINGS

Region 5 elected not to include a Regional Topic in this review.

VI. REVIEW OF PROGRESS ON ESSENTIAL ACTION ITEMS FROM LAST PQR

Region 5 did not participate in the 2012-2017 PQR cycle; therefore, there are no previous essential action items.

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

Region 5 did not participate in the 2012-2017 PQR cycle; therefore, there are no previous recommended action items.

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

This section provides a summary of the main findings of the PQR and provides proposed action items to improve Indiana's NPDES permit programs, as discussed throughout sections III and IV of this report.

The proposed action items are divided into two categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and states.

- **Essential Actions -** Proposed "Essential" action items address noncompliance with respect to a federal regulation. EPA has provided the citation for each Essential action item. The permitting authority is expected to address these action items in order to comply with federal regulations. As discussed earlier in the report, prior PQR reports identified these action items as Category 1. Essential actions are listed in Table 8 below.
- **Recommended Actions -** Proposed "Recommended" action items are recommendations to increase the effectiveness of the state's or Region's NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended actions are listed in Table 9 below.

The following tables summarize only those action items that were identified in Sections III and IV of the report.

Table 8. Essential Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Permit Application Requirements	• Ensure that major POTW applications include a complete data set for whole priority pollutants and whole effluent toxicity (WET) (40 CFR 122.21(j)(4)(iv) and (vi) and (5).
Administrative Process	• Ensure that public notices include a brief description of the business conducted consistent with 40 CFR 124.10(d)(iii), a brief description of comment procedures consistent with 40 CFR 124.10(d)(v), and a general description of the location of each existing or proposed discharge point and the name of the receiving water and the sludge use and disposal practice(s), consistent with 40 CFR 124.10(d)(vii). *IDEM indicated during the PQR that they would update public notices to include this required information. Since the PQR, it appears that recent public notices available on IDEM's website include a description of comment procedures.*
Municipal Separate Storm Sewer Systems (MS4s)	When the Small MS4 Permit is issued, the following needs to be addressed: • As it relates to 40 CFR 122.34(b), the GP is not sufficiently clear, specific, and measurable enough to satisfy the MS4 Remand Rule. IDEM should develop clear, specific, and measurable goals for each of the 6 MCMs. IDEM should consider the MS4 permitting compendia produced by EPA and other similar post-MS4 Remand Rule General Permits (most Region 5 states will have analogous permits issued by the time IEPA is ready to reissue) as examples. • As it relates to 40 CFR 122.34(c), the GP lacks requirements for MS4s to denote any impaired water bodies within their boundaries. IDEM is expected to modify the NOI to include an area for MS4s to note any impaired water bodies, and their source of impairment. • As it relates to 40 CFR 122.34(c), the GP lacks any requirements related to impaired water bodies. IDEM should develop a section of this GP which includes clear, specific, and measurable requirements for impaired water bodies. Depending on the type of MS4 GP, a comprehensive or two-step approach could be included in the GP in a manner that would pertain to all permittees, or it could be specifically described in the second step authorization.

Table 9. Recommended Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
Permit Application Requirements	• Ensure that the permit record documents that the permit application is deemed complete.
TBELs for POTWs	• IDEM should include in the permit record citation of the regulatory basis of not including the 85 percent minimum removal requirement in the permit.
TBELs for Non-POTW Dischargers	• IDEM should identify in the permit record the flow value used in developing mass-based effluent limitations and the basis for the flow value used.
Reasonable Potential	• IDEM permit writers should consider any pollutant associated with an impairment of the receiving water a pollutant of concern and evaluate for reasonable potential, regardless of whether an approved TMDL has been developed for that pollutant, a WLA has been assigned to the permitted facility. • IDEM should ensure permit writers document the water quality assessment process (i.e., RPE screening step and full RPE evaluations) consistently across municipal and industrial permits.
WQBELs Development	• IDEM should ensure that permit writers consider updated WLAs and water quality assessments during each permit development cycle and discuss the rationale where a previous WLA is still appropriate to apply.
Final Effluent Limitations and Documentation of Effluent Limitations Development	• IDEM should clearly identify whether an effluent limitation is a TBEL or a WQBEL and should demonstrate that they compared TBELs and WQBELs and established the more stringent as the final effluent limitation. • IDEM should include specific discussion of the sources of data evaluated in the water quality assessment/need for effluent limitations, to provide a clear linkage to the available data sources.
Administrative Process	• IDEM's municipal group should adopt procedures for clearly documenting whether comments have been received on the draft permit.
Administrative Record and Fact Sheet	• Permit records should include documentation of IDEM's consultations with agencies (e.g., Fish and Wildlife Service) for CWA Section 316(b) BTA determinations.
Nutrients	• For greater regulatory certainty, IDEM should continue making progress toward establishing effluent limits in permits for any pollutant with the reasonable potential to cause or contribute to an impairment of water quality standards, whether those water

	quality standards are numeric or narrative, consistent with requirements at 40 CFR § 122.44, including sections 122.44(d)(1)(iii) through (vi). • As IDEM continues to implement its approach to control phosphorus from municipalities ≥ 1 MGD or upstream of a lake or reservoir, it should develop an approach for ensuring phosphorus limits are developed where appropriate for minor municipalities and industrial dischargers based on characteristics of the discharge. • Document in the permit record whether the State assessed the discharge proximity to a downstream lake/reservoir. Similarly, the permit record should document if downstream rivers within a specified, reasonable distance are nutrient impaired. • Permits should specify the specific nutrient parameter (e.g., total phosphorus) and, ideally, include the STORET number for the parameter. • Document in the permit record the basis of decisions for nutrient controls in municipal permits, including decisions made not to include nutrient monitoring or limitations for dischargers to nutrient-impaired waters.
Pretreatment: Food Processing Sector	• Revise POTW permits to specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW. Also revise the permits to require that notice be provided to EPA Region 5 to ensure that the Region is aware of changes that may require the POTW to develop a pretreatment program or make changes to its existing pretreatment program. • Revise POTW permits to specify the general and specific prohibitions found at 40 CFR Section 403.5(a)(1) and (b), rather than incorporating by reference, in order to strengthen the permit effectiveness. • The permittee should be required to determine its organic capacity in support of determining if the POTW needs to develop a pretreatment program. • Permit fact sheets or administrative records should specify whether the POTW accepts hauled waste and identify and characterize contributing industrial dischargers to clarify the basis for inclusion of language regarding the control of industrial discharges. • Revise industrial user permits, to facilities that discharge to POTWs without an approved pretreatment program, to include slug discharge control and reporting requirements directly into the permit.
Municipal Separate Storm Sewer Systems (MS4s)	When the Small MS4 Permit is issued, the following should be addressed: • The GP should be clear about how or where MS4's SWQMPs should be documented.

	• The SWMQP section of the GP should provide more detail regarding how IDEM expects to manage SWQMP oversight. This should include detailing where MS4s should keep, post, or disseminate their SWQMP, and define the details that must be included.