Region 3 NPDES Permit Quality Review

West Virginia

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U.S. EPA Region 3
1650 Arch Street
Philadelphia, Pennsylvania 19103

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Contents

I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Permit Quality Reviews (PQRs) are an 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, and identifies successes in implementation of the NPDES program and identifies opportunities for improvement in the development of NPDES permits.

EPA's review team, consisting of two Region 3 staff and one EPA Headquarters (HQs) staff member, conducted a review of the West Virginia (WV) NPDES permitting program which included an on-site visit to the West Virginia Department of Environmental Protection (WVDEP) in Charleston from June 23 through 25, 2015.

The WV PQR consisted of two components: permit reviews and special focus area reviews. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and any correspondence, reports or documents that provide the basis for the development of the permit conditions.

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. The core review focused on the Central Tenets of the NPDES Permitting program to evaluate the WV NPDES program. In addition, discussions between EPA and state staff addressed a range of topics including program status, the permitting process, responsibilities, organization, and staffing. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states. The national topics reviewed in the WV NPDES program were: nutrients, pesticide general permit, pretreatment, and stormwater.

Regional topic area reviews target regionally-specific permit types or particular aspects of permits. The regional topic areas selected by EPA Region 3 included: Chesapeake Bay, Concentrated Animal Feeding Operations (CAFOs), and Total Maximum Daily Loads (TMDLs). These reviews provide important information to WV, EPA Region 3, EPA HQs and the public on specific program areas.

A total of 25 permits were reviewed as part of the PQR. 10 permits were reviewed for the core review, and several of these permits plus 15 additional permits were used for the national and regional topic area reviews as indicated below. Permits were selected based on issue date and the review categories that they fulfilled. The permits reviewed during this PQR included:

Core Review

WV0023124	Morgantown WWTP
WV0005525	Mount Storm Power Station
WV0110434	American Fiber Resources LP
WV0024775	Corp of Shepherdstown

WV0027405 Town of PAW PAW
WV0105988 Frankfort PSD
WV0111465 ACME Wood Preserving INC
WV0117072 U.S. Silica Company – Berkeley Springs Plant
WV0116149 Freshwater Institute
WV0076660 Columbian Chemicals

National and Regional Topic Area Reviews

Nutrients:
WV0084000 City of Sulfur Springs
WV0024236 City of Ronceverte
WV0105988 Frankford PSD

Pesticides:
WV0116645 Pesticide General Permit

Pretreatment:
WV0023183 City of Beckley
WV0023353 City of Fairmont
WV0023213 Parkersburg Sanitary Board
WV0023159 City of Huntington
WV0023108 City of Weirton

Stormwater:
WV0111457 Multi-Sector General Permit for Stormwater Associated with Industrial Activities
WV0115924 General Permit for Stormwater Associated with Construction Activities
WV0116025 General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems

Chesapeake Bay:
WV0105988 Frankfort PSD
WV0082759 Berkeley County PSSD
WV0024775 Corp of Shepherdstown

Concentrated Animal Feeding Operations (CAFOs):
WV0116726 Hedrick, Eric, and Rachel CAFO
WV0116475 Capon Valley Charolais Farms CAFO

Total Maximum Daily Loads:
WV0023353 City of Fairmont
WV0027740 North Beckley PSD
WV0105988 Frankfort PSD

II. STATE PROGRAM BACKGROUND

A. Program Structure

WVDEP is the NPDES permitting authority for the state of West Virginia. The main office is located at 601 57th Street SE, Charleston, WV 25305, and coordinates the permitting and enforcement of the NPDES program. WVDEP has six regional offices in Fairmont, Oak Hill, Parkersburg, Romney, Teays, and Wheeling, WV, which house some permit writers and the majority of enforcement inspectors. All categories of NPDES permits are administered by WVDEP. At the time of this PQR, WVDEP maintained 23 permit writers: 10 permit writers for individual non-mining and non-landfill permits, two for landfill permits, four for non-stormwater GPs, and seven for stormwater GPs. Permit writers are generally trained by internal mentoring and EPA's Permit Writer's course. WVDEP also maintains modeling staff that support the NPDES program including two staff for dissolved oxygen modeling, four staff for CORMIX (mixing zone) modeling, a Pretreatment Coordinator, and a CSO Coordinator. Additional support staff include administrative and electronic/data needs regarding the processing of permit applications, DMR data, and uploading of information to EPA's Integrated Compliance Information System (ICIS). While there are five TMDL staff maintained by WVDEP, they are strictly for TMDL development and do not act as support staff for the NPDES permitting program. Permit responsibilities are assigned by the supervisor for each team. Individual permits are assigned approximately six months prior to the upcoming state fiscal year (which runs from July – June), and GPs are assigned to a specific permit writer.

WVDEP maintains an internal oracle database called the Environmental Resources Information System (ERIS) into which permit information/data is entered, and from which feeds are generated to update ICIS. ERIS was designed to be completely compatible with PCS/ICIS, and the data are uploaded routinely. WVDEP's individual NPDES permits are almost entirely electronic. Applications and DMRs are submitted electronically, and feeds are generated and sent electronically to update ICIS for permit data, facility data, and outfall and effluent data. GP registrations are largely electronic as well. GP applications and DMRs are submitted electronically, and feeds are generated and sent electronically to update ICIS for permit data and facility data. While the permit application process is largely electronic, some permits are still mailed, while others are issued electronically via email. The database houses permit information, and can be used to generate draft permits. As long as permit writers ensure that certain fields are properly populated during the draft permit development process, a permit and fact sheet can be printed from the database. Once the permit is issued, relevant information is sent to ICIS.

WVDEP has a variety of tools it uses in its permit development process. These tools include: CORMIX modeling (for mixing zone determinations); GIS software; USGS data for obtaining 7Q10 data; spreadsheets used for dissolved oxygen modeling, reasonable potential (RP) assessment, the use of metal translators, the calculation of Water Quality-Based Effluent Limits (WQBELs), the derivation of pretreatment local limits; and a spreadsheet to calculate runoff reductions for the MS4 program. WVDEP does use permit templates, but data is entered for

each specific permit or the template must be revised to ensure permit specificity. WVDEP uses CORMIX to model site-specific mixing zones; however, in the absence of a site specific mixing zone, WVDEP will grant default mixing zone dilution factors, when appropriate. In most cases, WVDEP will only grant mixing zones when there is recent and reliable background data for the pollutant of concern; exceptions to this are for Whole Effluent Toxicity and chlorine, where zero background is assumed.

WVDEP has several guidance documents for use in the permit development process, including mixing zone guidance, dissolved metals translator guidance, written procedures for dissolved oxygen modeling, and a CSO Policy that includes expectations for Nine Minimum Control and Long Term Control Plan development and implementation. WVDEP's QA/QC procedures are built into its permitting process. Individual permits are drafted by a permit writer along with a fact sheet (for major facilities) or statement of basis (for minor facilities), and an EPA checklist is completed to address specific permit elements. For industrial discharges, permit writers also update the EPA permit rating worksheet to determine the major/minor status of each industrial facility (this is completed at each draft permit renewal). Draft permits are submitted to the appropriate supervisor for review and comment, and specific sets of permits are submitted to EPA for review in accordance with the Memorandum of Agreement (MOA). GP registrations are approved by the appropriate supervisor and a checklist is used for each, and final permits are submitted to the supervisor, the Assistant Director, and Director for final review before final permit issuance.

All NPDES permit development documents, correspondence, DMR data, compliance records, and other relevant information is electronically stored.

B. Universe and Permit Issuance

As of the date of the WV PQR, WVDEP has approximately 10,000 individual non-mining NPDES permits and GP registrations; WVDEP's permit universe is as follows:

Publicly Owned Treatment Works (POTWs)	
Major	52
Non-major	252
CSO	59
Non-municipal	
Major	48
Non-major	133
CAFO	2
General Permits	15
Stormwater (# of Permittees)	
Municipal	2,145
Industrial	1,449
Construction	47
Non-Stormwater GP (# of permittees)	6,522

At the time of the PQR, approximately 10% of WVDEP's major permit universe was backlogged, and approximately 10% of the minor permit universe was backlogged.

At the start of each calendar year, WVDEP evaluates the permits that need to be reissued and those permits are assigned to permit writers who then act as the "point of contact". Permit writers will generate letters detailing what permittees need to do regarding sampling, submission of information and renewal applications, etc., and additional letters are sent as needed as the permit process continues. NPDES permit applications are submitted electronically to WVDEP, where administrative staff check the applications for completeness. WVDEP uses state-developed application forms, which require the same information as EPA's applications. State regulations allow 180 days for the review of permit applications, and DEP's electronic database enables it to monitor this time period. If a permit application is administratively incomplete the clock is "stopped" and the required information is requested. Once the necessary information is received, a technical completeness review begins by the permit writer.

With the electronic submission of applications through the Electronic Submission System (ESS), application information is validated by WVDEP and is then automatically populated into WVDEP's internal database, ERIS. ERIS was developed to be able to handle information for all types of permits – individual, general, etc. Permit writers use information from this database and from previous permits to develop the new draft permit. ERIS is not used to develop permit modifications directly; in these instances, Microsoft Word is used because the conditions of permit modifications are so specific and unique to each permit.

Permit writers may accompany an enforcement inspector on an inspection of the facility during draft permit development, but this is discretionary for each permit writer. Permit application and DMR data are used to evaluate RP for pollutants of concern, using a spreadsheet developed by the state. This spreadsheet also takes into account water quality criteria, background data, any metal translators that are proposed and approved by WVDEP, mixing zone dilutions that can be granted, antidegradation reviews, and its built-in calculations determine reasonable potential and water quality-based effluent limits (WQBELs). In general, permit writers evaluate (using "best professional judgement" or BPJ) pollutants of concern by comparing application and DMR data to water quality criteria, considering applicable TMDLs, and considering the type of discharge for any additional relevant parameters. Pollutants of concern are then entered into the spreadsheet where an RP assessment is conducted, considering all of the information evaluated by the spreadsheet, as noted above. While no background values are evaluated for WET and total residual chlorine (unless there is knowledge that high chlorine levels exist in-stream), background data *is* required for consideration of a mixing zone. If no background data is available, no mixing zone is granted and the discharge must meet the WQBEL at the end of the pipe. Ambient stream data are not available in ERIS, so permit writers must retrieve the data from WVDEP's watershed assessment section, or from other sources such as the Ohio River Valley Water Sanitation Commission (ORSANCO) or the permittee. WVDEP requires specific QA/QC measures/plans to be followed before it will utilize permittee data in the

consideration of WQBEL calculations. CORMIX is used for consideration of site-specific mixing zones, otherwise permit writers follow the state's mixing zone regulations and guidance to determine appropriate values. According to WV regulations, if the instream waste concentration is 80% or higher, mixing zones are prohibited.

WVDEP conducts lognormal RP analyses and the calculation of effluent limits consistent with EPA's Technical Support Document (TSD), with a minor exception. During the assessments, if there are four or fewer effluent data points for a pollutant, no RP Factor values from the TSD are utilized. The state has documented that using RP Factors in this scenario can result in the determination of reasonable potential, even when each of the individual data points does not exceed the water quality criterion. In these cases, an RP Factor of 1 is used. When five to ten data points are available RP Factors are used, and permit writers use default coefficients of variation (CVs). A site-specific CV is calculated when ten or more effluent data points are available.

Technology-Based Effluent Limits (TBELs) are evaluated at each permit renewal. WVDEP applies TBELs to POTWs and non-POTWs based on Federal secondary treatment standards, and relevant effluent limitation guidelines (ELGs) and/or BPJ determinations, as applicable. Permit writers used spreadsheets to develop TBELs that have been tailored to specific ELG requirements. Production figures and a summary of the TBELs are provided in the fact sheet, and TBELs are compared to any calculated WQBELs to determine which is the more stringent. WVDEP typically uses the highest 12-month consecutive average (i.e., a rolling 12-month average) over the past five years for production flows. If a facility has a change in their production during that time, permit writers may use limited information from a previous permit cycle in the TBEL development.

Standard conditions are included in Appendix A of WV permits. Special conditions such as those for Pretreatment, Biosolids, Combined Sewer Overflows (CSOs), Nutrients (related to Chesapeake Bay TMDL requirements), etc., are included, as appropriate, in subsequent parts (i.e., Part D, E, F, etc.) of the NPDES permits.

Draft permit development includes an antidegradation evaluation in accordance with its Antidegradation Implementation Procedures.[1] WV defines Tier 1 waters as those that maintain and protect existing uses of a water body, and the water quality conditions necessary to support those uses. A waterbody that is listed as impaired on the state's 303(d) list is considered a Tier 1 water as it pertains to the specific pollutant listed. Tier 2 waters are those that have been determined to be a high quality water (i.e., the level of water quality exceeds levels necessary to support recreation and wildlife and the propagation and maintenance of fish and other aquatic life). Tier 2 is the default classification for a waterbody that is not listed as impaired on the states 303(d) list. Where a water segment doesn't meet or exceed all applicable water quality criteria, the state will determine whether the water segment will be afforded Tier 2 protection as part of the antidegradation review process using professional

[1] WV's Antidegradation Implementation Procedures can be found at: http://www.dep.wv.gov/WWE/Programs/wqs/Pages/default.aspx

judgement. Where there is insufficient information to establish which tier should apply, Tier 2 is applied until sufficient water quality data is available to determine the appropriate level of protection. Tier 2 reviews include evaluation of new or expanded activities to ensure that they do not degrade water quality (as defined by WV's Antidegradation Implementation Procedures), and may require an alternatives evaluation for any proposed degradation. Water segments within a federally designed Wilderness Area, included in 47CSR2-4.1.c, or listed as an outstanding national resource water are classified as Tier 3. Any proposed new or expanded discharge that would degrade water quality in a Tier 3 water is prohibited. If the Tier has not been determined for a water segment, baseline water quality must be determined for the parameters of concern as well as the existing uses, after which WVDEP will determine the appropriate Tier that applies. Fact sheets document the water classifications and how they were addressed during the draft permit development process.

Upon completion of the draft permit development process, draft permits are public noticed and a specific set of permits are submitted to EPA for review in accordance with the MOA. Draft GPs are also public noticed and sent to EPA for review in accordance with the MOA. Draft permit documents are public noticed for the required 30-day public notice period. The draft permit package to permittees includes the draft permit, fact sheet/statement of basis, and a copy of the public notice document. Procedures for submitting comments and requesting a public hearing are included in the notice, as well as the start and end dates for the public comment period. WVDEP may address comments received during the public notice period via creating a fact sheet addendum, by making revisions to the draft permit documents (if necessary), and by formally summarizing WVDEP answers to permittee questions in the final permit issuance cover letter (this is typically performed in a summary manner, after comments were discussed with the permittee).

C. State-Specific Challenges

WVDEP, like any state, experiences resource concerns such as limited staff that can challenge its ability to address all of the NPDES program requirements; however, WV typically addresses permit reissuance in a timely manner and maintains a low permit backlog. WVDEP has several written guidance or policy documents, describing specific procedures to be followed during the NPDES draft permit development process.[2] These include guidance for the implementation of mixing zones, antidegradation, and development of metal translators. The development of a guidance document for the draft permit development process would help to add transparency to the state's permitting process.

D. Current State Initiatives

WVDEP has a strong electronic information management system including its ERIS database and electronic permit application and DMR system (ESS), which were discussed in Sections II.A. and B. of this report. These electronic tools consolidate information and enable permit writers

[2] In addition to WV's Antidegradation Implementation Procedures discussed previous, NPDES Guidance documents can be found at: http://www.dep.wv.gov/WWE/permit/individual/Pages/default.aspx

to access recent DMR and application data, and existing permits to assist with the development of new draft permits.

WVDEP indicated that standard operating procedures (SOPs) are being developed for WV NPDES permitting processes. Development of SOPs will help to provide clarity and transparency for those processes currently employed by permit writers, such as the assessment of pollutants of concern and RP (including those processes that may differ from EPA's TSD guidance). SOPs will also help to better document draft permit processes and procedures that can be referenced in the state's fact sheets.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Basic facility 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:
WVDEP permits and fact sheets provided a clear description of the facility names, addresses, types of facility and processes/operations, and receiving waters. All permits included basic permit information such as permit issuance, effective, and expiration dates, authorization-to-discharge information, a description of the activities carried out by the facilities and the outfalls to which those wastewaters discharge, as well as receiving water location information.

Areas for Improvement:
The cover letter of a final permit indicates that if the permittee has any questions on the final permit, to contact the permit writer. WVDEP may want to consider adding the permit writer's name to each permit's fact sheet/state of basis.

2. Permit Application Requirements

Federal regulations at 40 CFR122.21 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.

Program Strengths:
WVDEP uses its own permit application forms that require the same information as EPA's forms. Applications are submitted electronically and are available to the public through WV's ESS. Most of the permit applications were received on time, and included the required analytical data and other supporting information. Modifications were made to WV's applications and now includes all of the required analytical testing requirements for POTWs.

Areas for Improvement:
While the majority of the permit applications were received on time, several were received late. WVDEP sends application reminder letters annually, which should help to eliminate the receipt of late applications; for this reason, Region 3 has decided not to develop this into an Action Item. Facility flow diagrams were not always able to be found in the applications. WET test results were not able to be found in permit applications; however, WVDEP permits require all applicable facilities to perform and submit annual WET tests. WVDEP's database and ICIS contain the submitted WET test results; therefore, WVDEP application forms do not require applicants to resubmit the required information. For this reason, Region 3 has decided not to develop this into an Action Item. The most sensitive analytical method was not used for some parameters for the results submitted with the permit application.

B. 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.

1. TBELs for POTWs

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent pollutant removal), and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133. A total of four POTW permits were reviewed as part of the PQR.

Program Strengths:
Overall, the POTW permits reviewed contained numeric limits with appropriate units of measure, and met or were more stringent than the minimum secondary treatment requirements for BOD, TSS, and pH, and for percent removal requirements.

Areas for Improvement:
40 CFR 133.102 requires that BOD5/CBOD5 and TSS effluent limits for POTWs be expressed in terms of a 30-day (monthly) average and a 7-day (weekly) average. While the permits include the required monthly and weekly limits for BOD and TSS, some permits only include a maximum daily effluent limit in Part A. When this is the case, the weekly average secondary treatment limits for BOD and TSS is located in Section C.4 of the permit. WV should consider including a

footnote in Part A, making reference to the weekly average requirements specified in Part C.4. In one instance, a permit (aerated lagoon WWTP) was provided equivalent to secondary treatment limits for TSS (45 mg/l monthly average, 60 mg/l weekly average, and 65% removal), but no justification or data was provided to document that limits equivalent to secondary treatment were necessary. While this may have been an appropriate permitting action, the record provided no documentation (or carry-over of a previous determination) to justify the limits. While secondary treatment requirements for pH are in the permit, the permit expresses the limits as 6 and 9, rather than 6.0 and 9.0. Requiring the reporting of an appropriate number of significant digits will ensure that the secondary treatment levels are being met.

2. TBELs for Non-POTW Dischargers

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 best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

Program Strengths:
For non-POTW permits, effluent limits were appropriately expressed in terms of maximum daily and monthly average limits. The explanation of facility descriptions, process wastewaters being evaluated, and treatment processes were adequately discussed in the fact sheets. WVDEP uses a spreadsheet tailored to the specific ELG requirements, and typically uses the highest 12-month consecutive average (rolling 12-month average) over the last 5 years for production flows. Fact sheets typically include production figures for the facility, but the TBEL calculation results are usually summarized.

Areas for Improvement:
While the calculations of TBELs were adequately documented in the administrative record, the spreadsheets permit writers use to develop the limits are not included as part of the fact sheet documentation. Fact sheets include only a summary of these evaluations, and the supporting calculations are not visible. WVDEP should consider including the spreadsheets as an attachment to the fact sheets as part of the supporting documentation for the effluent limit derivation.

C. Water Quality-Based Effluent Limitations

The 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" (WQBEL), the permitting authority must evaluate the

proposed discharge and determine whether technology-based requirements are sufficiently stringent, and whether any pollutants or pollutant parameters could cause or contribute to an excursion above any applicable water quality standard.

The PQR for WVDEP assessed the processes employed by permit writers and water quality modelers to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record 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, the PQR also assessed whether and how permit writers consulted and developed limits consistent with the assumptions of applicable EPA-approved total maximum daily loads (TMDLs).

Program Strengths:
WVDEP's fact sheets clearly described the receiving waters and the 303(d) status of each. Fact sheets indicated when a TMDL had been completed and provided a brief description of how the TMDL wasteload allocations were applied in the permit. Fact sheets consistently provided a summary of the WQBEL evaluations that were conducted, while the administrative record included a detailed spreadsheet used for WQBEL development. WVDEP requires that reliable background data be available in order for a mixing zone to be granted in its RP analyses. Otherwise, limits must be met at the end-of-pipe. Fact sheets provided thorough discussions of mixing zone allowances. Overall, WQBELs were expressed in the appropriate units of measure and permits contained the WQBELs that were consistent with the RP analyses.

Areas for Improvement:
While the administrative record included the WQBEL spreadsheet, fact sheets only include a summary of the analyses conducted. The WQBEL spreadsheet should be included as an attachment to the fact sheet/statement of basis as supporting documentation for the RP assessment of all parameters, including WET. Although the WQBEL spreadsheets include RP analyses for the indicated pollutants of concern, the record does not explain how pollutants of concern were selected for the limit development process. It was indicated that DMR and application data are evaluated for consideration of the pollutants of concern, but the process seems to rely on professional judgement and is not articulated in the record or in any state guidance documents. The record did not indicate whether or how the state considered its

applicable narrative water quality criteria in developing water quality-based permit conditions. Fact sheets did not consistently include a description of the designated uses of the receiving waters to which the facility discharged. No direct comparison of TBELs and WQBELs was documented in the record. As documented in the "Universe and Permit Issuance" section of this report, WVDEP's RP assessments do not use the RP Factors from EPA's TSD when evaluating four or fewer effluent data points for a pollutant. This does not account for effluent variability of those small data sets.

D. Monitoring and Reporting

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 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.

Program Strengths:
Permits included at least annual monitoring for all limited parameters, included the monitoring locations and frequency of sampling appropriate for the discharge type, and included WET testing where appropriate. Permits also required the use of a sufficiently sensitive 40 CFR Part 136 test method, and specified the method, frequency, and timing of DMR submission and other required reports.

Areas for Improvement:
There are no areas for improvement.

E. Standard and Special Conditions

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain an enumerated list of "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 required by the federal regulations.

In addition to standard permit conditions, permits may also contain additional requirements that are unique to a particular permittee or 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 pollutant management plan or 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.

Program Strengths:
A review of WVDEP's standard permit conditions, included in Appendix A of WVDEP permits, indicated that most of the requirements were at least as stringent as the Federal regulations. Permits reviewed during the PQR also included appropriate special conditions such as compliance schedules, WET testing, stormwater BMP requirements, Pretreatment, sewage sludge management, and nutrient requirements, among others.

Areas for Improvement:
Appendix A.I.14. Liabilities, does not include language regarding administrative penalties at 40 CFR 122.41(a)(3).

F. Administrative 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 (40 124.5). EPA discussed the elements of the administrative process with WVDEP, and reviewed materials from the administrative process as they related to the core permit review.

Program Strengths:
WVDEP's administrative process includes the proper coordination of EPA and state review of draft permits. Permit writers clearly document comments received and responses to comments, including any changes made to fact sheets and/or draft permits (this was noted in fact sheet addendums and in the cover letters to permittees). The record includes the supporting documentation in the evaluation and derivation of effluent limits. The process also includes the required public notice period for draft permits, and almost all of the public notice documents included the information required at 40 CFR 124.10(d).

Areas for Improvement:
Not all public notice documents included the required sludge use and disposal practices and the location of sludge treatment works as required by 40 CFR 124.10(d).

G. Administrative Record

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 a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis; 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; final response to comments; and, for new sources where EPA issues the permit, any environmental assessment, environmental impact statement, or finding of no significant impact.

Current 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 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.

For the 10 permits reviewed, the administrative record contained most of the necessary documents; however, the record was sometimes incomplete in describing the basis for permit development. The record contained permit applications, public notice documents, draft permits, fact sheets, supporting TBEL and WQBEL spreadsheets, final permits, related correspondence, and comments received, but specific documentation related to the application of alternate effluent limitations, and antidegradation and antibacksliding requirements were not always adequately documented in the record.

1. Documentation of Effluent Limitations

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 water quality-based effluent limitations as well as the procedures explaining the basis for establishing, or for not establishing, water quality-based effluent limitations should be clear and straight forward. 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.

Program Strengths:
WVDEP Fact sheets provide a discussion of the treatment processes and types of discharge for non-POTW permits, and assesses and documents all applicable standards. Overall, the derivation of TBELs is adequately documented in the statement of basis/fact sheet, and permit writers use TBEL spreadsheets that are customized for the applicable ELG(s). RP analysis and WQBEL derivation is well documented in the administrative record through the use of both WV's supporting WQBEL spreadsheets and fact sheet summarization.

Areas for Improvement:
While the calculations of TBELs were adequately documented in the administrative record, the Excel spreadsheets permit writers use to develop the TBELs are not included as part of the fact sheet documentation (they are only included in summary form). The Excel spreadsheets should be included as an attachment to the fact sheets so that the calculations used to derive the TBELs are apparent. Alternately, a sample calculation could be included in the fact sheet to serve as an example of how the TBELs were derived.

While the administrative record included the WQBEL spreadsheet, fact sheets only include a summary of the analyses conducted. The WQBEL spreadsheet should be included as an attachment to the fact sheet/statement of basis as supporting documentation for the RP assessment of all parameters, including WET. As described in Section III.C. of this report, the record does not explain how pollutants of concern are selected for the limit development process. The process seems to rely on BPJ, and is not articulated in the record or in any guidance documents. The record did not include any discussion regarding how WVDEP considers its applicable narrative water quality criteria in developing water quality-based permit conditions (while WET evaluations are used for this purpose, it is not documented in fact sheets). Fact sheets did not consistently include a description of the designated uses of the receiving waters to which the facility discharged. No direct comparison of TBELs and WQBELs was documented in the record.

Permit limits were sometimes carried over from previous permits without continuing to include the relevant documentation (for example – application of equivalent to secondary treatment limits without any documentation for those limits in the permit). Occasionally, permit limits were removed from a reissued permit, with no explanation in the fact sheet/statement of basis as to how those changes met the antibacksliding requirements. Fact sheets were sometimes silent on antidegradation evaluations, and we would recommend that fact sheets include a statement regarding whether not such an evaluation is necessary.

H. National Topic Areas

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: nutrients, pesticides, pretreatment and stormwater.

1. Nutrients

For more than a decade, both nitrogen and phosphorus pollution has consistently ranked as one of the top causes of degradation of surface waters in the U.S. Since 1998, EPA has worked at reducing the levels and impacts of nutrient pollution. A key part in this effort has been the support EPA has provided to States to encourage the development, adoption and implementation of numeric nutrient criteria as part of their water quality standards (see the EPA's *National Strategy for the Development of Regional Nutrient Criteria*). In a 2011 memo to the EPA regions titled *Working in Partnerships with States to Address Nitrogen and Phosphorus Pollution through use of a Framework for State Nutrient Reductions*, the Agency announced a framework for managing nitrogen and phosphorus pollution that, in part, relies on the use of NPDES permits to reduce nutrient loading in targeted or priority watersheds.

To assess how nutrients are addressed in the West Virginia NPDES program, EPA Region 3 reviewed three permits, the City of Sulfur Springs (WV0084000) and the City of Ronceverte (WV0024236) which are included in the Greenbrier River Restoration Plan, and the Frankford PSD (WV0105988) which is included in the Chesapeake Bay TMDL.

Background

WVDEP has limited nutrient water quality criteria - it has developed nutrient lake criteria for chlorophyll a and total phosphorus (established at 47CSR2-8.3), narrative criteria regarding algae (established at 47CSR2–3.2.g.), and nitrate criteria (listed in 47CSR2 Appendix E, Table 1).[3] WVDEP has historically addressed 303(d) impairments by developing watershed TMDLs that include numerical wasteload allocations (WLAs) and load allocations (LAs); however, WVDEP has limited TMDLs that address nutrient impairments. WVDEP has several older nutrient TMDLs for lakes (dating from 1998-1999), but these TMDLs did not appear to include any WLA requirements. Therefore, EPA reviewed the Franklin PSD (WV0105988) permit, which is an example of a permit in which WVDEP has implemented nutrient requirements of the approved Chesapeake Bay TMDL. The Franklin PSD permit implemented total nitrogen and total phosphorus annual loads consistent with the WLA requirements of the Chesapeake Bay TMDL.

The White Sulfur Springs and Ronceverte permits have nutrient controls based on the limitations prescribed in the Greenbrier River Restoration Plan. This restoration plan is a cooperative approach undertaken by WVDEP and three POTWs that is expected to expedite the attainment of WV's narrative water quality standards and to focus finite resources where they are most needed. The plan is considered to be consistent with EPA's goal that states may use alternative adaptive management approaches to traditional TMDL development, where they may be better suited to achieve water quality goals.

Seasonal algal blooms interfere with the designated uses of the Greenbrier River. WVDEP previously tried to implement NPDES permit requirements to control phosphorus discharges but the state's Environmental Quality Board (EQB) identified deficiencies in WVDEP's permitting

[3] The water quality standards for West Virginia are found in the Requirements Governing Water Quality Standards Rule - Title 47CRS2: http://www.dep.wv.gov/WWE/Programs/wqs/Pages/default.aspx

strategy and remanded the permit to the agency for action. Since that time, WVDEP has taken a number of significant actions to address the EQB findings, including:

1. Formally listing (in 2010 and on subsequent 303(d) lists) the Greenbrier River as impaired by excessive algae growth;
2. Making changes to WVDEP's Rules Governing Water Quality Standards (47CSR2) to clarify that algae blooms interfering with a stream's designated uses are not allowable;
3. Collecting information to determine residents' opinions on and the tolerance levels of algae in WV waterways, which led to the development of guidelines (including a general threshold level of algae) for determining impairment of algae impacted waters; and
4. Continued studies on algae development in the Greenbrier and other WV rivers, including the development of a standardized procedure (SOP) for measuring percent bottom cover and percent water column fill.

The Greenbrier River Restoration Plan includes a strategy in which final effluent limitations based upon 0.5 mg/l TP limits (phosphorus was determined to be the limiting nutrient for algae growth) are to be incorporated into three POTW permits that have been identified as causing or substantially contributing to the impairment. The POTWs will be afforded time through consent orders to complete the upgrades and are expected to reduce algae growth by 80%. WVDEP has determined that the new point source requirements will result in attainment of WV's narrative water quality standard in the most impacted segments of the Greenbrier River. However, due to the complex nature of nutrient loading and algae growth, the restoration plan includes multiple year post-construction effluent and instream monitoring that will result in the development of a technical report summarizing attainment progress. If attainment of the narrative water quality standard is not achieved, WVDEP will use the new data to reevaluate the causes and sources of the pollution, and determine if TMDL development and/or permitting controls are needed.

The City of White Sulfur Springs (WV0084000) and the City of Ronceverte (WV0024236) permits implement the total phosphorus limitations proposed in the Greenbrier River Restoration Plan, which are applied seasonally, effective from May 1st to October 31st.

Program Strengths:
Overall, West Virginia has implemented innovative programs to protect surface waters from nutrients where local TMDLs do not exist, as evidenced by the Greenbrier River Restoration Plan. The Franklin PSD permit implemented total nitrogen and total phosphorus annual loads consistent with the WLA requirements of the approved Chesapeake Bay TMDL.

Areas for Improvement:
WVDEP may want to consider continuing or increasing coordination between its NPDES and TMDL programs to address scenarios where nutrients concerns exist but TMDLs do not, or where existing TMDLs may need revision. WVDEP may also want to consider adding nutrient monitoring in appropriate permits to help inform the WVDEP TMDL program regarding nutrient contributions from point source discharges.

2. Pesticides

On October 31, 2011, the EPA issued a final NPDES *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*. This action was in response to a 2009 decision by the U.S. Sixth Circuit Court of Appeals (National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009)) in which the court vacated EPA's 2006 Final Rule on Aquatic Pesticides (71 Fed. Reg. 68483, November 27, 2006) and found that point source discharges of biological pesticides and chemical pesticides that leave a residue into waters of the U.S. were pollutants under the CWA. The federal PGP applies where the EPA is the permitting authority. Approximately 40 authorized state NPDES authorities have issued state pesticide general permits as of November 2011.

Background

On January 7, 2009, the Sixth Circuit vacated the EPA's 2006 NPDES Pesticides Rule under a plain language reading of the CWA. National Cotton Council of America v. EPA, 553 F.3d 927 (6th Circuit 2009). The Court held that the CWA unambiguously includes "biological pesticides" and "chemical pesticides" with residuals within its definition of "pollutant." In response to this decision, on April 9, 2009, EPA requested a two-year stay of the mandate to provide the Agency time to develop general permits, to assist NPDES-authorized states to develop their NPDES permits, and to provide outreach and education to the regulated community. On June 8, 2009, the Sixth Circuit granted EPA the two-year stay of the mandate. On March 28, 2011, the U.S. Court of Appeals for the Sixth Circuit granted EPA's request for an extension to allow more time for pesticide operators to obtain permits for pesticide discharges into U.S. waters. The court's decision extended the deadline for when permits would be required from April 9, 2011 to October 31, 2011.

As a result of the Court's decision to vacate the 2006 NPDES Pesticides Rule, NPDES permits are required for discharges of biological pesticides and of chemical pesticides that leave a residue, to waters of the United States. EPA proposed a draft pesticide general permit on June 4, 2010 to cover certain discharges resulting from pesticide applications. EPA Regional offices and state NPDES authorities may issue additional general permits or individual permits if needed.

On October 31, 2011, WVDEP published notice of the availability of a final statewide general permit that provides authorization to entities with control over the decision to perform pesticide applications (i.e., Decision-Makers) to discharge under the federal NPDES program. This permit is titled, "Pesticide General Permit for Point Source Discharges (WV0116645) for Coverage under the NPDES General Permit for Point Source Discharges to Waters of the State of West Virginia from the Application of Pesticides".

The general permit is intended to provide coverage under the Clean Water Act to operators who discharge directly to waters of the State from the application of biological pesticides or chemical pesticides that leave a residue (collectively called pesticides), when the pesticide application is for one of the following pesticide use patterns: (1) mosquito and other flying insect pest control; (2) weed and algae pest control; (3) animal pest control; and (4) forest

canopy pest control. If pesticide applications are not eligible for coverage under the general permit but otherwise exceed the thresholds where permit coverage is required, the Decision-Maker will need to apply for an individual permit. Pesticide applications that will not result in a direct discharge to waters of the Commonwealth do not need permit coverage.

For this PQR, EPA Region 3 reviewed the West Virginia Pesticide General Permit with a focus on verifying its consistency with NPDES program requirements. The Pesticide General Permit mirrors the EPA National Pesticide General Permit in both structure and content. WV uses individual permits when the application is to a special protection water or has the potential to impact endangered species or critical habitat.

Program Strengths:
The Pesticide GP mirrors the EPA National Pesticide GP in structure and content, and individual permit are used when the application of pesticides is to a special protection water or has the potential to impact endangered species or critical habitat.

Areas for Improvement:
There are no areas for improvement.

3. Pretreatment

The general pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement pretreatment standards to control pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

Background

The goal of this pretreatment program review was to assess the status of the pretreatment program in West Virginia, as well as assess specific language in POTW NPDES permits. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR 122.42(b) (POTW requirements to notify Director of new pollutants or change in discharge);
- 40 CFR 122.44(j) (Pretreatment Programs for POTWs);
- 40 CFR 403.8 (Pretreatment Program Requirements: Development and Implementation by POTW);
- 40 CFR 403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval);
- 40 CFR 403.12(i) (Annual POTW Reports); and
- 40 CFR 403.18 (Modification of POTW Pretreatment Program).

The PQR also summarizes the following: program oversight, which includes the number of audits and inspections conducted; number of significant industrial users (SIUs) in approved pretreatment programs; number of categorical industrial users (CIUs) discharging to municipalities that do not have approved pretreatment programs; and the status of implementation of changes to the general pretreatment regulations at 40 CFR part 403 adopted on October 14, 2005 (known as the streamlining rule).

Three (3) POTW permits with approved pretreatment programs were selected for this review, including the City of Beckley (WV0023183), City of Fairmont (WV0023353), and the Parkersburg Sanitary Board (WV0023213). WVDEP provided information on the SIU permits that discharge to the City of Huntington (WV0023159) POTW, which has an approved program, so Region 3 also reviewed these permits. The City of Weirton (WV0023108) permit was also reviewed as a POTW without an approved program.

POTW program oversight (audits and Pretreatment Compliance Inspections (PCIs)):
The State is authorized to administer the Pretreatment Program (1982) and delegates the program administration responsibility to the POTWs. Most of the required data is entered into ICIS. A copy of the approved WVDEP program and the MOA are available. Currently, the WVDEP regulates nine (9) approved pretreatment programs. Eight (8) of these programs have a capacity of greater than 5 MGD. WVDEP generally conducts two (2) pretreatment program audits and 4-5 PCIs each year, ensuring that each approved program is audited at least once in a permit cycle and has a PCI conducted at least twice in the permit cycle.

There are 51 SIUs in POTWs with approved programs. None of these SIUs have an expired Industrial User (IU) permit. There are also 39 SIUs located in POTWs without an approved pretreatment program. There are 11 Categorical Industrial Users (CIUs) in approved programs. None of these permits are expired. There are 9 CIUs in POTWs without an approved program.

Last year, the State conducted 6 PCIs and 4 Audits. Also, 28-31% of the SIUs were inspected by the State. This met the compliance monitoring strategy (CMS) goals, which are 2 PCIs and 1 audit per five-year permit cycle. This translates to 100% of the CMS goal. The most recent EPA audit of the WVDEP Pretreatment Program was conducted in July, 2004. WVDEP reports the necessary information in their 106 semi-annual grant reports to allow EPA to better track the WVDEP compliance information.

The State has updated its regulations to incorporate the Pretreatment Streamlining revisions by reference. According to the WVDEP Pretreatment Coordinator's March 18, 2008 e-mail, the State legislature adopted regulations that needed to be signed by the Governor. A letter from the EPA-Region 3 Water Protection Division Director to the WVDEP Secretary, dated February 25, 2009, stated that the proposed revisions, submitted on January 16, 2009, were consistent with the EPA regulations and the Clean Water Act and were therefore approved. Draft letters were sent to all approved POTWs in July and August, 2009. A December 2, 2009 e-mail from the State AG indicated that the final letters for adoption of the streamlining revisions went to the approved programs.

All discharge monitoring reports (DMRs) and required reports are reportedly received and reviewed by WVDEP.

Review of POTW NPDES Permits and Fact Sheets:

For purposes of this Section, the NPDES permits and fact sheets for the City of Beckley, the City of Fairmont, and the Parkersburg Utility Board were used. The NPDES permits all contain the notification requirements of 40 CFR 122.42(b)(1), any new introduction of pollutants to the POTW; (b)(2), any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants; and (b)(3), information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. The notification is to be made to the Director of WVDEP. The permits also include notification of any substantial change in volume or character of pollutants, also provided to the Director of WVDEP. Likewise, any change in quantity or quality of the effluent and anticipated impact of the change on the POTW is covered. The NPDES language contains requirements to identify SIUs via an Industrial Waste Survey, which goes to the WVDEP Director or his designated official.

The City of Weirton's permit includes a statement that the permittee may accept non-domestic wastewater from the IUs listed, provided each respective IU maintains continued compliance with all applicable requirements of this section and all applicable limitations and monitoring requirements provided in Sections specific to each IU. In addition, there are several permit modifications that cover discharges from specific non-domestic Users, which are not SIUs, and each of which have site-specific limits, requirements and specific prohibitions.

The permits reviewed do contain fact sheets. The fact sheets designate whether a Pretreatment Program is required, is available, and when the Program was approved. It does not include the types of IUs. The permits include a discussion on the need for technical evaluation for local limits, but do not include a time frame for submission.

For POTWs with Pretreatment programs, our review has indicated that the NPDES permits contain the language that each has an approved program, as does the Fact Sheet. These permits do not incorporate 40 CFR Part 403 by reference. The permits contain language that the POTW needs to specifically notify IUs of the applicable pretreatment standards and requirements. The requirements to receive and analyze reports from the IUs and inspect and sample the IUs at least once a year are covered. There is a requirement to evaluate the SIUs for the need for a slug control plan, and to investigate instances of noncompliance by IUs. The program requires annual publication of significant noncompliance notices. Each permit identifies the contents and submittal date for the annual reports by the permittee, by August 31ST of each year. POTWs without a pretreatment program are not required this by their NPDES permit (based on a review of the Weirton permit (WV0023108)).

Significant Industrial User Permit Reviews:

The following three (3) SIU permits were reviewed:

1. SWVA, Inc. dba Steel of West Virginia, Inc., which discharges to the City of Huntington (WV0023159), an approved program.
2. Cabell Huntington Hospital, which also discharges to the City of Huntington (WV0023159), an approved program.
3. Novelis Corporation, which discharges to the City of Fairmont (WV0023353), an approved program.

Generally, the required elements of an SIU permit were included. Individually, some of the permits reviewed had several discrepancies where an element was either missing (not covered), or was found but may have been not covered adequately. For purposes of our review, a Permit Review Checklist was used for each permit.

Program Strengths:
Based on the limited resources available (1 person-year), WVDEP is conducting a reasonable representation of program oversight. This includes conducting audits and PCIs each year. The State conducts at least one (1) audit and at least 2 PCIs at each approved POTW for each NPDES permit cycle (5 years), which meets the CMS goal. WVDEP conducts inspections of all of the known CIUs discharging to non-pretreatment POTWs (9) out of 39 SIUs. The audits of the approved programs included inspections at 1 or 2 of the SIUs discharging to these POTWs – there are a total of 51 SIUs in these 9 approved cities.

Generally, the WVDEP Program legal authority is adequate. The Streamlining Revisions were adopted by reference, by the State legislature, with an effective date of May 1, 2008. The State sent all approved POTWs a letter in July – August 2009 requesting modifications to each Ordinance incorporating the streamlining revisions.

Copies of all DMRs and required reports are received and reviewed.

As for review of the POTW NPDES permits and fact sheets, a review of three (3) of the POTWs that are authorized to administer the pretreatment program in their service areas were reviewed. As stated earlier, these POTWs are City of Beckley, City of Fairmont, and the Parkersburg Utility Board. The NPDES permits all require most of the required pretreatment conditions. The permits also cover a need to re-evaluate the technically-based local limits, but do not require a time frame nor a frequency. This is conducted by the WVDEP NPDES staff on an as-needed basis. POTWs without a pretreatment program are not required to submit reports by their NPDES permits.

Three (3) SIU permits were reviewed; two (2) discharge to the City of Huntington, an approved pretreatment program, and one (1) discharges to the City of Fairmont. These permits had most of the required elements.

Areas for Improvement:
- Certain elements of the SIU permits did not address bypass.

- The Huntington SIU permits mentioned BMP information in their fact sheets, but the actual permits do not address or cover BMPs.
- The permit for the CIU which discharges to Fairmont, did not actually list the parameters that have categorical limits or are covered by local limits. There is only some reference to Categorical Standards and also to the Fairmont Ordinance.
- The Fairmont user permit does not address BMPs at all.
- The Fairmont user permit contains a Table for the effluent limits that prescribes use of grab samples for all pollutants, which is incorrect.
- The Fairmont user permit also does not contain a definition for SNC, even though the term was referred to in the permit.
- WVDEP POTW permits with an approved program do not specify the time frame for submission of the evaluation of local limits.
- EPA could not find any annual report RIDE data elements in ICIS. WVDEP will need to ensure that these data get entered into ICIS.

4. Stormwater

The NPDES program requires stormwater discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to be permitted. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities. West Virginia also maintains a separate general permit to regulate the discharge of stormwater runoff associated with oil and gas related construction activities.

For West Virginia, Region 3 selected three NPDES stormwater permits to review. These permits include:

1. Multi-Sector General Permit for Stormwater Associated with Industrial Activities (WV0111457)
2. General Permit for Stormwater Associated with Construction Activities (WV0115924)
3. General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (WV0116025) [West Virginia regulates Phase II MS4s only; there are no Phase I MS4s in WV]

Multi-Sector General Permit (MSGP) for Stormwater Associated with Industrial Activities (WV0111457)

Background

Federal regulations in 40 CFR Section 122.26(c) contain the NPDES permit application requirements for discharges of stormwater associated with industrial activities. Part 122.26(b)(14) defines the types and categories of industrial discharges that require NPDES permit coverage. These industrial categories have been regrouped in West Virginia's MSGP into 23 sectors based upon similarities in the nature of the industrial activity, the type of materials handled and material management practices employed. Industrial permits generally require industries to reduce the level of pollutants in stormwater runoff from their sites through the

development and proper implementation of a stormwater pollution prevention plan (SWPPP). The SWPPP describes best management practices, procedures for spill prevention, inspection requirements, and training of employees which the industrial facility will implement to prevent pollutants from making their way into stormwater runoff. The focus of the Industrial Stormwater review is to verify that permits and fact sheets comply with federal regulations, are consistent with EPA's MSGP and are protective of water quality. West Virginia's MSGP provides NPDES coverage to approximately 1070 entities throughout the state.

The NPDES Multi-Sector General Permit for stormwater associated with industrial activity is a general permit issued by the West Virginia Department of Environmental Protection. The permit was issued on March 3, 2014, and became effective April 2, 2014. It will expire February 28, 2019. This permit was evaluated as part of this PQR review process.

Program Strengths:
The permit closely aligns with EPA's MSGP.

In addition to the development and implementation of a SWPPP, this permit requires permittees to develop a Groundwater Protection Plan (GPP). The GPP includes an inventory of all operations which have the potential to contaminate groundwater resources and describes the procedures designed to protect groundwater from the identified potential contamination sources.

The permit requires consultation with the US Fish and Wildlife Service if the facility discharges to a stream where endangered and threatened species and/or their habitat are known to be present.

The permit requires analytical monitoring for discharges from certain classes of industrial facilities that have a higher potential to discharge pollutants at concentrations of concern, the point at which a stormwater discharge could potentially impair water quality or impact human health. Permittees are required to meet benchmarks that are specified in the permit for certain sectors. These benchmark values represent the target levels which the WVDEP uses to determine if a stormwater discharge from any given facility merits further monitoring to insure that the facility has been successful in implementing a stormwater pollution prevention plan.

Areas for Improvement:

1. The fact sheet accompanying the permit states that all new facilities must comply with anti-degradation requirements; however, there is no mention of any anti-degradation requirements in the permit document.
2. The permit does not provide an explanation for how to terminate NPDES coverage, if necessary.
3. The permit does not specify the qualifications that are required for the preparer of the SWPPP.
4. The permit does not contain any language related to modifications to the SWPPP. Specifically, the permit should consider when a modification is required, how

modifications are to be tracked and approved by WVDEP, and the time frame allowed for a modification to occur.

5. The permit does not specify the location where required monitoring is to occur.

General Permit for Stormwater Associated with Construction Activities (WV0115924)

Background

Federal regulations in 40 CFR Section 122.26(c) contain the NPDES permit application requirements for discharges of stormwater associated with small construction activities. Part 122.26(b)(15) defines the types of activities (including land disturbing operations such as clearing, grubbing, grading and excavating) that require NPDES permit coverage. In West Virginia, there is one state-wide general permit for construction activities greater than one acre in disturbance – WV0115924. Annually, WVDEP provides NPDES coverage under their general permit to approximately 420 construction sites throughout the state. The focus of the Construction Stormwater review is to verify that WVDEP's general permit and fact sheet comply with federal regulations, are consistent with EPA's CGP and are protective of water quality.

In 2009, EPA published a new Construction and Development Effluent Limitations Guidelines rule (C&D Rule), which established numeric and non-numeric effluent limitations for stormwater discharges associated with construction activity. The numeric limitations have been stayed pending further study; however, the non-numeric limitations remain in effect and are reflected in this permit.

The NPDES Permit for discharges of stormwater associated with construction activity is a general permit issued by the West Virginia Department of Environmental Protection. The permit was issued on December 5, 2012, and became effective January 4, 2013. It will expire January 3, 2018. This permit was evaluated as part of this PQR review process.

Program Strengths:

The permit contains a number of conditions to comply with the C&D Rule that was recently promulgated by EPA. Including, but not limited to sediment and erosion control, buffer alternatives and stabilization requirements. The permit further requires that applicants that are proposing a project greater than 100 acres or a project that discharges to a Tier 3 water submit their application at least 100 days prior to the start of construction to allow for adequate review time and public notice procedures. The permit contains specific requirements for discharges to impaired waters as well as anti-degradation of Tier 3 waters. Further, the permit contains procedures for the consideration of impacts to historic properties.
The permit requires that WVDEP perform a final site inspection prior to the acceptance of a Notice of Termination from a permittee.

Areas for Improvement:

1. The permit does not contain the same prescriptive requirement for post-construction stormwater that the MS4 does. Therefore, any development outside of the MS4 regulated area does not have to manage the first one inch of runoff on-site.
2. Construction of single family residences with less than 3 acres of land disturbance are provided coverage under the general permit; however, they are not required to submit an application for registration with WVDEP.
3. The permit does not include language to comply with provisions from 40 CFR 450.21(d) and (e) of the C&D Rule to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters, such as washout of concrete, paint, oils, and other construction materials.
4. The permit does not include specific instructions on how to conduct required self-inspections.
5. The permit does not require that records be maintained for a period of at least 3 years.

General Permit for Stormwater Discharges from Small MS4s (WV0116025)

Background

Federal regulations in 40 CFR Section 122.34 outline the NPDES permit requirements for discharges of stormwater from small municipal separate storm sewer systems (MS4s). The permit requirements include a description of the minimum control measures (MCMs) that operators of small MS4s must develop and implement as well as EPA guidance. Urban stormwater runoff is a source of various pollutants and the MS4 program was designed to control pollution from the continual development and urbanization of metropolitan areas. The focus of the MS4 Stormwater review is to verify that permits and fact sheets comply with federal regulations and are protective of water quality. In West Virginia, there is one state-wide general permit for small MS4s – WV0116025. The MS4 general permit provides NPDES coverage to approximately 50 entities throughout the state.

The NPDES Permit for discharges of stormwater from MS4s is a general permit issued by the West Virginia Department of Environmental Protection. The permit was issued on July 11, 2014, and became effective August 11, 2014. It will expire August 11, 2019. This permit was evaluated as part of this PQR review process.

EPA notes that this permit was not evaluated for compliance with the Agency's MS4 General Permit Remand Rule, which was promulgated on November 17, 2016. The Remand Rule establishes two alternative approaches a permitting authority can use to issue NPDES general permits for small MS4s and meet the requirements of the court remand. The first option is to establish all necessary permit terms and conditions to require the MS4 operator to reduce the discharge of pollutants from its MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act (''MS4 permit standard'') upfront in one comprehensive permit. The second option allows the permitting authority to

establish the necessary permit terms and conditions in two steps: A first step to issue a base general permit that contains terms and conditions applicable to all small MS4s covered by the permit and a second step to establish necessary permit terms and conditions for individual MS4s that are not in the base general permit. Public notice and comment and opportunity to request a hearing would be necessary for both steps of this two-step general permit. The state is required to comply with the Remand Rule requirements in its next small MS4 general permit. When the state submits its draft for the reissued general permit for review by Region 3, the Agency will review the permit for consistency with the Remand Rule requirements. Region 3 will also be available, at the state's request, and as resources allow, to assist the state in its development of the draft permit.

Program Strengths:
The permit requires that all permittees develop, implement and enforce a Stormwater Management Plan (SWMP). The general permit lists the required components of the SWMP. All SWMPs are required to be submitted to WVDEP for review and approval. The SWMP document shall correspond to the measurable goals specified in the permit for each Minimum Control Measure (MCM) as outlined in the federal regulations. The SWMP shall describe the written plans and best management practices (BMPs) to be implemented to achieve compliance with the permit. The SWMP shall addresses these six main components: (1) Public Education and Outreach; (2) Public Involvement/Participation; (3) Illicit Discharge Detection and Elimination; (4) Construction Site Stormwater Runoff Control; (5) Post Construction Stormwater Management in New and Redevelopment; and (6) Pollution Prevention/Good Housekeeping for Municipal Operations.

For MS4s that discharge to impaired waters or waters with an approved TMDL, the permit further requires the SWMP to document how proposed BMPs will control the discharge of the pollutants of concern. Permittees that discharge to a waterbody with an approved TMDL are required to meet the applicable wasteload allocation. The permit explains measures that permittees are required to take including developing specific BMPs to target the POC, monitoring and mapping requirements. Additionally, for entities that discharge to a receiving water within the Chesapeake Bay watershed, an annual summary of activities conducted to reduce nutrients and sediment in stormwater discharged from the MS4 is required.

The permit contains a very prescriptive post-construction standard, in that permittees are required to maintain on-site the first one-inch of runoff. If there are site constraints that do not allow for capture and treatment of the first inch of runoff, the permit also contains options for off-site mitigation or payment of a fee-in-lieu. The permit also contains specific monitoring requirements, which is not typical of Phase II MS4 permits.

Areas for Improvement:
There were a few recommendations based upon the permit review that the state should consider in its renewal of the permit in 2018.

1. It is recommended that a separate permit be developed for non-traditional type MS4s since they do not have the same jurisdictional controls as municipal entities.
2. The permit does not address discharges to Tier Three waters or contain any anti-degradation requirements. In the future, it is recommended that the permit specify requirements for discharges to high quality waters.
3. The permit should specify when authorization occurs once the NOI is submitted.
4. The permit contains requirements for inclusion of BMPs to address TMDLs in the SWMP; however, the permit lacks specific guidance for permittees regarding what BMPs and/or actions are considered acceptable to WVDEP.
5. It is recommended that the permit contain a specific inspection frequency for construction sites.

IV. REGIONAL TOPIC AREA FINDINGS

A. Chesapeake Bay

The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limits be developed consistent with the assumptions and requirements of any wasteload allocations (WLAs) established by approved Total Maximum Daily Loads (TMDLs). The Chesapeake Bay TMDL was developed and allocations were established within the entire watershed to ensure protection of in-stream water quality standards established by the State of Maryland within the Bay itself. The focus of the Chesapeake Bay review is to verify that permits and fact sheets have been developed to incorporate proper effluent requirements to meet the intent of the TMDL established WLAs assigned to facilities in WV.

Background

On December 29, 2010, EPA established the Chesapeake Bay TMDL, a historic and comprehensive "pollution diet" with rigorous accountability measures to initiate sweeping actions to restore clean water in the Chesapeake Bay and the region's streams, creeks and rivers. The TMDL established WLAs for NPDES point sources throughout the watershed, including sources in WV. Watershed Implementation Plans (WIPs) were developed by the Bay jurisdictions to detail how and when the jurisdictions will meet TMDL allocations. There are 16 "significant" wastewater dischargers in WV with assigned individual WLAs for Total Phosphorus (TP), Total Nitrogen (TN), and Total Suspended Solids (TSS). All of these dischargers have been issued permits by WVDEP that incorporate the individual WLAs. The TMDL also established aggregate TP, TN and TSS WLAs for all "non-significant" wastewater dischargers in WV.

Program Strengths:
As part of EPA Region 3's oversight responsibilities, WVDEP is required to submit for EPA review draft permits for all significant dischargers in the Bay. For this PQR report, Region 3 reviewed NPDES permits including the Frankfort PSD (WV0105988), Berkeley County PSSD (WV0082759), and Shepherdstown (WV0024775) permits.

The Frankfort PSD permit (WV0105988) includes specific total annual loads for nitrogen and phosphorus for various existing WVDEP NPDES Permits which were taken off line and connected to the Frankfort PSD plant. The permit effluent limits are based on the sum of the total annual loads prescribed in the TMDL for the facilities that have been connected. WVDEP has documented that it is tracking the transfer of WLAs for these permits, and the limits are consistent with the assumptions of the WLA requirements of the TMDL.

The Berkeley County PSSD permit includes total annual loads for nitrogen and phosphorus for four separate sewage treatment systems. Outfalls 001, 002, 003, and 004 contain annual nutrient loads for the Opequon/Hedgesville Plant, Inwood Plant, Baker Heights Plant, and North End WWTP, respectively. The permit properly included effluent limitations consistent with the assumptions of the WLAs in the TMDL.

The Shepherdstown permit includes total annual loads for nitrogen and phosphorus that are consistent with the assumptions of the WLAs in the TMDL.

WVDEP's Watershed Implementation Plan (WIP) discusses that WV is significantly under its cap load for Total Suspended Solids (TSS), and has a TSS reserve of approximately 20,000 tons/year delivered. WVDEP Chesapeake Bay permits continue to apply technology-based TSS limits (rather than imposing more stringent limits) and is using a portion of the TSS reserve afforded by WVDEP's WIP. WVDEP has indicated that only 1,000 delivered tons/yr of TSS will need to be used from the surplus for all significant wastewater facilities identified in the TMDL. Therefore, the TSS permit limits are consistent with the assumptions of the Chesapeake Bay TMDL.

Areas for Improvement:
There are no areas for improvement.

B. Concentrated Animal Feeding Operations (CAFOs)

Background

Federal regulations at 40 CFR 122.23 define an Animal Feeding Operation (AFO) as a lot or facility where animals are stabled or confined and fed for at least 45 days per year and where crops, vegetation, forage growth, or post-harvest residue are not sustained in the normal growing season over any portion of the lot or facility. Concentrated Animal Feeding Operations (CAFOs) are the largest of these facilities and are defined as point sources by the Clean Water Act (CWA). Federal regulations authorize the permitting authority to designate any AFO as a CAFO subject to permitting if the facility is a significant contributor of pollution to waters of the United States.

EPA first developed federal effluent limitations guidelines (ELGs) for CAFOs in 1974. In 2003, the EPA revised the CAFO requirements at 40 CFR § 122.23 and the ELGs at 40 CFR Part 412.

The 2003 CAFO Rule stated all CAFOs are subject to the development and implementation of a nutrient management plan (NMP) and annual reporting requirements. Following challenges in federal court to the 2003 CAFO regulations, the EPA published revisions to the CAFO regulations and ELGs (73 Fed. Reg. 70418, November 20, 2008). The revised 2008 CAFO rule required that CAFOs apply for a permit if they discharge or propose to discharge to a surface water. In addition, NMPs have to be reviewed by the permitting authority and the terms of the NMP must be incorporated into the permit, making it a requirement to public notice the NMP. On July 19, 2012, EPA issued a final rule to revise its CAFO permit regulation to remove the requirement that CAFOs that "propose to discharge" must seek NPDES permit coverage. This rule revision is in response to a 2011 U.S. Court of Appeals for the Fifth Circuit decision in *National Pork Producers Council v. EPA*, which vacated portions of the Agency's 2008 CAFO rule. In addition, this action removed from the CAFO permit regulation the option to voluntarily certify that a CAFO does not discharge or propose to discharge.

The NPDES program was established by Section 402 of the CWA to regulate the discharge of pollutants from point sources to waters of the United States. Section 502(14) of the CWA defined CAFOs as point sources that are regulated under the NPDES program, and 40 CFR § 122.23 identified which animal agriculture operations are defined as CAFOs that need to obtain NPDES permit coverage.

EPA can delegate the authority to administer the NPDES program to states, and each state that seeks to be authorized to administer the NPDES program must submit a request to the EPA. West Virginia has been authorized to administer the CWA's NPDES program (33 U.S.C. § 1251 *et seq*.) since 1982. In West Virginia, WVDEP is responsible for administering the NPDES program. WVDEP administers an authorized program to issue NPDES permits for point source wastewater discharging to waters of the State of West Virginia, including from CAFOs. EPA retains general oversight of WVDEP's NPDES permit program. As part of its oversight role, EPA has authority under Section 402(d) of the CWA to review those permits and programs, which are submitted by WVDEP pursuant to a Memorandum of Agreement (MOA). Under this MOA, WVDEP is required to submit the general and individual permits to EPA for its review.

EPA has worked closely with WVDEP and the West Virginia Department of Agriculture (WVDA) over the past four years to develop and issue West Virginia's first NPDES CAFO individual permits for poultry operations, including their NMPs. This effort has been under way since December 06, 2011, when EPA determined that the West Virginia Code of State Rules (CSR), Title 47, Legislative Rule, Department of Environmental Protection, Water Resources, Series 10, National Pollutant Discharge Elimination System (NPDES) Program (47CSR10) meets the applicable regulations governing CAFOs set forth in 40 CFR Parts 122 and 412. Although minor revisions to 47CSR10 will be made during West Virginia's next legislative session, West Virginia agreed to implement its CAFO regulations, effective immediately, as if these revisions have already been made.

West Virginia defines CAFOs at 47CSR10 §13.1. b. using the same CAFO definitions that are identified in 40 CFR § 122.23. All CAFOs that discharge pollutants from the production area into

waters of the United States are required to obtain NPDES CAFO permits. West Virginia's duty to apply is more stringent than the federal CAFO regulations, requiring NPDES CAFO permits for CAFOs that "propose to discharge."

West Virginia's NPDES CAFO regulations require all NPDES CAFO permittees to implement an NMP.[4] West Virginia's NPDES CAFO NMPs must include the nine minimum elements required by the federal CAFO regulations at 40 CFR §122.42(e)(1). West Virginia's NPDES CAFO NMPs must also be developed in accordance with West Virginia's state technical standards.[5]

WVDEP and the WVDA signed a memorandum of understanding (MOU) in 2011 to define the agencies' roles in addressing environmental issues and providing technical assistance to AFOs, including their roles in processing NPDES CAFO Permit applications (WVDEP and WVDA, 2011). WVDEP issues individual NPDES CAFO permits rather than covering CAFOs under a general permit. To obtain a NPDES CAFO individual permit, a CAFO owner or operator must submit a permit application package to WVDEP, including a copy of the site-specific NMP. WVDEP is responsible for ensuring that the NPDES CAFO permit application is complete.

After receiving a complete permit application, WVDEP will forward the NMP to WVDA for review and certification per the MOU between WVDEP and WVDA (WVDEP and WVDA, 2011). WVDA has 30 days to review the NMP submitted with the WV/NPDES CAFO permit application and notify WVDEP that the applicant's NMP is accepted or rejected (WVDEP and WVDA, 2011). NMP deficiencies identified during WVDA's review are communicated to the certified nutrient management planner working with the CAFO so that the applicant and certified nutrient management planner can develop an approvable NMP.

After WVDA accepts the applicant's NMP and WVDEP determines that the permit application is complete, WVDEP drafts the NPDES CAFO individual permit for the facility. The draft permit is subject to a 30-day public comment period, during which time the public can provide comments or request a public hearing on the draft permit. WVDEP can also schedule a public hearing if there is a "significant degree of public interest on issues relevant to the draft permit."[6] After addressing any comments that are received, WVDEP issues the final WV/NPDES CAFO individual permit. The NPDES CAFO individual permit process takes up to six months to complete.[7]

Individual NPDES CAFO permits are effective for five years from the date of issuance. NPDES CAFO NMPs must be updated or revised every three years (State of West Virginia, 2014). NPDES CAFO NMP updates must be submitted to WVDEP, and substantial changes to NMP terms must be made available for public review and comment.

[4] West Virginia Code of State Rules (CSR) §47-10-13.1.h.1
[5] http://anr.ext.wvu.edu/r/download/119142
[6] West Virginia Code of State Rules (CSR) §47-10-12.3.a
[7] http://www.dep.wv.gov/wwe/permit/individual/pages/default.aspx#CAFO

Operations covered under NPDES CAFO individual permits are required, among other things, to implement an NMP, maintain records of manure generation and utilization, and submit an annual report to WVDEP each year summarizing manure generation and utilization at the facility.[8]

WVDEP has issued 2 NPDES CAFO individual permits, both located in the Chesapeake Bay watershed. WVDEP also has received 20 additional NPDES CAFO permit applications, including 18 from facilities in the Chesapeake Bay watershed. WVDEP has not issued any NPDES permits since March 14, 2014. WVDEP received 20 requests from the applicants to withdraw their applications. In 2015 and 2016, these 20 additional NPDES CAFO permit applications were withdrawn. WVDEP has no additional NPDES CAFO application to be processed.

In its oversight capacity, as described above, and as part of this PQR, EPA has reviewed two WVDEP's individual permits and two NMPs, and evaluated whether the permit and NMPs, taken together, (1) are enforceable and consistent with applicable legal requirements, and (2) are effectively implementing the Chesapeake Bay TMDL and West Virginia's Watershed Implementation Plan (WIP). The NPDES CAFO individual permits conform to applicable federal NPDES regulations. Overall, the two NMPs were generally complete with respect to the permit requirements. Therefore, EPA finds that the permits and the NMPs, taken together, are consistent with federal NPDES regulations and are supportive of the best management practices (BMPs) required by West Virginia's WIP in order to achieve reductions necessary under the Chesapeake Bay TMDL.

Improvements made to these NPDES CAFO NMPs were based on EPA's comments and recommendations, which are part of a larger regional effort to provide general comment upon, object to, or recommend approaches to develop and issue NPDES permits for mining and non-mining operations. These improvements include the addition of the CAFO production area best management practices (BMPs), procedures utilized to develop the NMP, and operation and maintenance clauses. EPA looks forward to continuing its cooperation with WVDEP and WVDA to further improve NMPs, in part, by encouraging site-specific documentation of the NMP development process for each facility. The objective of an NMP is to document practices and activities that will help achieve the goals of the producer while protecting or improving water quality.

WVDA made revisions to its NMP development processes, based on EPA's comments and recommendations. These processes are used to develop NMPs in West Virginia and must follow the following description stated below. An NMP is a detailed planning document that identifies conservation practices and management activities that, when implemented, help to ensure that both production and natural resource protection goals are achieved. The objective of an NMP is to document those practices and activities that will help achieve the goals of the producer and protect or improve water quality. Every NPDES permit issued to a CAFO must require that the CAFO implement the terms of a site-specific NMP approved by the permitting

[8] West Virginia Code of State Rules (CSR) §47-10-13.1.h

authority pursuant to 40 CFR § 122.42(e)(5). Those site-specific terms of the NMP are defined as "the information, protocols, BMPs, and other conditions" identified in a CAFO's NMP and determined by the permitting authority to be necessary to meet the requirements of 40 CFR § 122.42(e)(1). In order to meet those requirements, the information, protocols, BMPs, and other conditions in the NMP must, at a minimum, address the following minimum measures: manure storage, mortality management, clean water diversions, prevention of direct animal contact with water, chemical handling, conservation practices to control runoff, manure and soil testing protocols, land application protocols and record keeping requirements. An NMP must discuss the required elements of an NMP in a clear, consistent, and accurate manner. An analysis of how criteria of the nine minimum requirements as set forth in the 40 CFR § 122.42(e)(1) are met, must be included in NMPs. These analyses should be based on best professional judgment (BPJ), inspections, and requirements set forth in 40 CFR § 122.42, applicable effluent limitations and standards, including those specified in 40 CFR Part 412.

Program Strengths:
Following PQRs that were performed in 2007 and 2011, WV has strengthened the CAFO program by completing and employing the following:

1. WVDEP developed an NPDES CAFO individual permit template to help develop and issue NPDES CAFO permits. This template was employed to issue the first NPDES CAFO individual permits in West Virginia.
2. WVDEP and WVDA developed an NPDES CAFO NMP template to help develop and issue NMPs. This template was employed to issue the first NPDES CAFO NMPs in West Virginia.

Areas for Improvement:
There are no areas for improvement.

C. Total Maximum Daily Loads (TMDLs)

The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that effluent limits be developed consistent with the assumptions and requirements of any WLAs established by approved TMDLs. Section 303(d) of the Clean Water Act requires states to develop TMDLs for impaired waterbodies. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs develop water quality-based allocations for point and non-point source discharges. Allocations for point source discharges are implemented through the NPDES permitting process. These WLAs, once incorporated into permits, intend to reduce pollution from point sources as part of the practices to restore and maintain the quality of a state's water resources. The focus of the TMDL review is to verify that permits and fact sheets have been developed to incorporate proper effluent requirements to meet the intent of the TMDL WLAs assigned to facilities in WV. Three permits were reviewed to determine whether WVDEP is developing permits consistent with the assumptions and requirements of approved TMDLs.

Background

The three permits that Region 3 reviewed included the City of Fairmont (WV0023353), North Beckley PSD (WV0027740), and Frankfort PSD (WV0105988) permits.

The City of Fairmont is a sewage treatment facility that discharges to the Monongahela River and is affected by the Monongahela River TMDL for aluminum, iron, manganese, and pH. This TMDL does not include a WLA for wastewater treatment facilities, since the TMDL indicates that these facilities typically do not discharge significant amounts of these pollutants. The permit fact sheet states that monitoring for these parameters, therefore, was not warranted. While the TMDL implies that these facilities are de minimis, the only de minimis dischargers identified in the TMDL are non-mining point sources with "report only" requirements (for aluminum, iron, and/or manganese) in NPDES permits. The TMDL further explains that these specific discharges were accounted for in the TMDL development as part of the background conditions during the model calibration process. The TMDL was unclear whether other point sources, such as wastewater treatment plants, were included in the background. Therefore, during EPA's review of the draft permit, it was recommended that since the permit application does not include any data for the TMDL pollutants of concern, either monitoring be included in the permit or that the facility submit data for these pollutants with the next permit renewal application. The purpose of this monitoring was to verify whether "de minimis" levels are being discharged by this facility and to inform any future TMDL revisions, if necessary. WVDEP subsequently finalized the permit to require that monitoring for appropriate parameters be submitted with the next permit renewal application. This data collection effort is intended to provide the information necessary to verify the existing discharge levels of the TMDL pollutants of concern.

North Beckley PSD is affected by two TMDLs – the Upper and Lower New River TMDLs for Bacteria and Iron. During EPA's review of the draft permit, it was noted that although the permit seemed to include a fecal limit consistent with the assumptions of the WLA requirements of the TMDL, the fact sheet did not document the TMDL or its WLA requirements. Additionally, the TMDL for iron did not provide a WLA for this facility, and since no iron data were available for this discharge, EPA recommended that monitoring be included in the permit. WVDEP amended its fact sheet to address these items, and finalized the permit to include monitoring for iron in order to characterize the pollutant loadings in the discharge. The final permit was consistent with the TMDL WLAs, and collected data to verify existing discharge levels and inform any potential TMDL revisions, if necessary.

The Frankfort PSD permit is a significant Chesapeake Bay discharger and the permit includes WLAs for nitrogen and phosphorus for various existing WVDEP NPDES Permits which were taken off line and connected to the Frankfort PSD plant. The permit effluent limits are based on the sum of the total annual loads prescribed in the Chesapeake Bay TMDL for the facilities that have been connected. WVDEP has documented that it is tracking the transfer of WLAs for these permits, and the permit limits are consistent with the assumptions of the WLA requirements of the TMDL.

Program Strengths:
Overall, WVDEP permits appear to be consistent with the assumptions of the WLA requirements of approved TMDLs.

Areas for Improvement:
It is noted that there are some WV TMDLs that do not assign WLAs for specific point source discharges or categories of dischargers. In these cases, where no application or DMR data are available to characterize the pollutant levels in the discharge, EPA recommends that WVDEP continue to require data collection for the applicable pollutants of concern. The intent of this monitoring is to verify the existing discharge levels, verify the assumptions of the TMDL, and/or to inform any potential TMDL revisions, if necessary.

V. ACTION ITEMS

This section provides a summary of the main findings of the review and provides proposed action items to improve WVDEP NPDES permit programs. This list of proposed action items will serve as the basis for ongoing discussions between Region 3 and WVDEP as well as between Region 3 and EPA HQ. These discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion.

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

- **Critical Findings** (Category One) - Most Significant: Proposed action items will address a current deficiency or noncompliance with respect to a federal regulation.
- **Recommended Actions** (Category Two) - Recommended: Proposed action items will address a current deficiency with respect to EPA guidance or policy.
- **Suggested Practices** (Category Three) - Suggested: Proposed action items are listed as recommendations to increase the effectiveness of the state's or Region's NPDES permit program.

The critical findings and recommended actions proposed should be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals or may serve as a roadmap for modifications to the Region's program management.

A. Basic Facility Information and Permit Application

WVDEP permits include the necessary basic facility information. WVDEP uses an electronic permit application form that requires the majority of the required information that is to be submitted. Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

1. Permit applications for POTWs with a design flow greater than 0.1 MGD are required to include a process flow diagram/schematic (40 CFR 122.21(j)(2)(iii)). This was noted to be missing for one POTW permit. (Category 1)
2. WVDEP permit applications and permit development procedures must address the use of sufficiently sensitive EPA approved methods, as required by the Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting rule. (40 CFR 122.21(e)(3)) (Category 1)

Suggested Practices:

1. WVDEP cover letters for final permits indicate that if the permittee has any questions on the final permit, to contact the permit writer. WVDEP may want to consider adding the permit writer's name to each permit's fact sheet/statement of basis. (Category 3)

B. Technology-based Effluent Limitations

WVDEP POTW permits contain requirements as stringent as federal secondary treatment requirements. Some POTW permits include BOD5 and TSS effluent limits expressed as a 30-day (monthly) average, and as a maximum daily limit in Part A. In these cases, the weekly average secondary treatment limits for BOD/TSS are included in Section C.4. of the permit. Non-POTW permits contain the required ELG/technology-based requirements, and discussions of facility descriptions, process wastewaters, and treatment processes are very well detailed in WVDEP's fact sheets. While the technology-based limits are adequately documented in the administrative records, the spreadsheets permit writers use to develop the TBELs are not included as part of the fact sheet documentation (fact sheets only include a summary of the evaluations). Recommended actions related to documentation are documented in Section V.G. "Documentation (including fact sheet)" of the Action Items section of this report. Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Recommended Actions:

1. It is recommended that the requirements for pH in POTW permits be expressed as 6.0 and 9.0 (as opposed to 6 and 9). Requiring the reporting of an appropriate number of significant digits will enable WVDEP to ensure that the secondary treatment requirements are being met. (Category 2)

Suggested Practices:

1. When BOD5/TSS limits are expressed as monthly average and maximum daily limits in POTW permits, we would recommend that WVDEP include a footnote in Part A that references the weekly average secondary treatment requirements specified in Part C.4. of its permits. (Category 3)

C. Water Quality-Based Effluent Limitations

WVDEP's fact sheets clearly described the receiving waters, 303(d) status, discussions of any applicable TMDLs and relevant WLA requirements, and consistently provided a summary of WQBEL evaluations that were conducted. The administrative record included a detailed spreadsheet used for WQBEL development. While the detailed spreadsheet includes RP analyses for all of the indicated pollutants of concern, the record does not explain how pollutants of concern were selected for the limit development process. WVDEP does not consider effluent variability when conducting a RP assessment for limited data sets (four or fewer data points). WVDEP has a strong practice of requiring reliable background data in order for a mixing zone to be granted in its RP analyses, and fact sheets include a thorough discussion of mixing zones allowances. The record did not indicate whether or how WVDEP considered its applicable narrative water quality criteria in developing water quality-based permit conditions, fact sheets did not consistently include a description of the designated uses of the receiving waters, and fact sheets did not include a direct comparison if TBELs and WQBELs. Proposed action items related to WVDEP's fact sheet documentation are presented in Section V.G. "Documentation (including fact sheet)" of this report. Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

1. WVDEP must consider effluent variability in its RP assessments, including those conducted for small data sets. To do this, WVDEP should conduct an RP assessment on small data sets using the RP multipliers in the TSD, and if RP is demonstrated, WVDEP could consider options such as requiring additional data collection from the permittee prior to making a final RP determination. (40 CFR 122.44(d)(1)(ii) (Category 1)

D. Monitoring and Reporting

Permits included appropriate monitoring for all limited parameters, included the monitoring locations and frequency of sampling appropriate for the discharge type, and included WET testing when appropriate. Permit requirements included the use of sufficiently sensitive 40 CFR Part 136 test methods, and permits specified the methods, frequency, and timing of DMR submission and other required reports. There are no proposed action items to help WVDEP strengthen its NPDES permit program regarding monitoring and reporting.

E. Standard and Special Conditions

WVDEP's standard permit conditions are included in Appendix A of its permits. Most of the requirements were at least as stringent as the Federal regulations. WVDEP permits also include appropriate special conditions such as compliance schedules, WET, BMP requirements, Pretreatment, etc. Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

1. 40 CFR 122.41(a)(3) addresses administrative penalties that should be included in Appendix A.I.14. Liabilities of WVDEP permits. (Category 1)

F. Administrative Process (including public notice)

WVDEP's administrative process includes the proper coordination of EPA and state review of draft permits, permit writers clearly document comments received and responses to comments, including any changes made to fact sheets and/or draft permits. WVDEP's process also includes the required public notice period for draft permits, and contain the majority of required information required at 40 CFR 124.10(d). Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

1. Sludge use and disposal practices, and the location of sludge treatment works must be included in public notice documents for all applicable permits. While this information appeared to be included in most of the permits reviewed for this PQR, it was not consistently included for all applicable permits. (40 CFR 124.10(d)(vii)) (Category 1)

G. Documentation (including fact sheet)

WVDEP's administrative record included most of the necessary documents; however, the record was sometimes incomplete in describing the basis for permit development. The record contained permit applications, public notice documents, draft permits, fact sheets, supporting TBEL/WQBEL spreadsheets, final permits, correspondence, and comments received, but specific documentation related to the application of alternate effluent limitations and antidegradation and antibacksliding requirements were not always adequately documented in the record. While TBEL and WQBEL development was well documented in the administrative record, some of this documentation was lacking in fact sheets. A number of additional items identified in Section III.G. of this report, are addressed below. Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

1. Fact sheets must document (including any relevant carry-over documentation) the application of alternate effluent limitations, such as the application of equivalent to secondary treatment limits that are authorized at 40 CFR 133.105. (Category 1)
2. Fact sheets/statements of basis should fully document that antibacksliding requirements are being met when permit limits are removed in a reissued permit. (40 CFR 122.44(l)(1) and (2)) (Category 1)

Recommended Actions:

1. WVDEP should document the process by which pollutants of concern are selected for the WQBEL development process. This process should be contained in any relevant SOPs that may be developed by WVDEP and/or explained in draft permit fact sheets. (Category 2)

2. It is recommended that the Excel spreadsheets used to derive TBELs be included as an attachment to the fact sheet, so that the calculations are visible and apparent. Alternately, a sample calculation could be included in the fact sheet to serve as an example of how the TBELs were derived. (Category 2)
3. It is recommended that the Excel spreadsheet used to derive WQBELs be included as an attachment to the fact sheet, as part of the supporting documentation for effluent limit derivation. (Category 2)
4. Fact sheets should document how WVDEP considers its applicable narrative water quality criteria in developing water quality-based permit conditions. (Category 2)
5. It is recommended that fact sheets consistently include a description of the designated uses of the receiving waters. (Category 2)
6. It is recommended that fact sheets include a statement regarding whether or not an antidegradation evaluation is necessary. (Category 2)

Suggested Practices:

1. It is suggested that fact sheets provide a clear and direct comparison of any developed TBELs and WQBELs, to document that the most stringent effluent limits are placed in a permit. (Category 3)

H. National Topic Areas

Proposed actions items for core topic areas are provided below.

1. Nutrients

While WVDEP has some nutrient criteria, nutrient requirements are generally implemented in permits based on nutrient TMDL WLA requirements, such as those established in the Chesapeake Bay TMDL. However, WVDEP has implemented innovative programs to protect surface waters from nutrients where local TMDLs do not exist, as evidenced by the Greenbrier River Restoration Plan. Proposed action items to improve WVDEP's NPDES program include the following:

Recommended Actions:

1. WVDEP should consider continuing or increasing coordination between its NPDES and TMDL programs to address scenarios where nutrients concerns exist but TMDLs do not, or where existing TMDLs may need revision. (Category 2)

2. WVDEP should consider adding nutrient (TN and TP) monitoring in appropriate permits to help inform the WVDEP TMDL program regarding nutrient contributions from point source discharges. (Category 2)

2. Pesticides

The WV Pesticide General Permit mirrors the EPA National Pesticide General Permit in both structure and content. WV uses individual permits when the application is to a special

protection water or has the potential to impact endangered species or critical habitat. There are no proposed action items to help WVDEP strengthen its NPDES permit program related to Pesticides.

3. Pretreatment

This section provides a summary of the main findings of the Pretreatment review and provides proposed action items to improve WVDEP's Pretreatment Program programs. This list of proposed action items will serve as the basis for ongoing discussions between Region 3 and WVDEP. These discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, pretreatment program oversight as part of the NPDES permit program.

Critical Findings:

1. In accordance with 40 CFR 403.8(f)(1)(iii), SIU permits need to include the correct specific prohibited discharge standards. One of these standards is a prohibition for pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0. There is no allowance for any excursions. (Category 1)
2. SIU permits must include Bypass provisions, in accordance with 40 CFR 403.17. (Category 1)
3. All SIU permits, including categorical user permits, must list the applicable local limits and/or specific categorical limits. (40 CFR 403.8(f)(1)(iii)) (Category 1)

Recommended Actions:

1. The SIU permits should include the coverage as Best Management Practices (BMPs) in the language addressing compliance with local limits and pretreatment requirements. (Category 2)
2. The sampling method for metals is generally using a 24-hour composite method, and not a grab sample, unless this method is not possible due to discharge characteristics. Single grab samples may be used if the SIU has ably demonstrated that this one sample is representative of the normal discharge characteristics. This methodology is contained in 40 CFR Part 136. (Category 2)
3. SIU permits should contain the applicable definitions covered by the Ordinances, especially for any regulatory definitions referred to in the permit. (Category 2)
4. Fact sheets should include a description or list and the type of SIUs that discharge to the POTW, as part of the documentation that relevant pollutants of concern have been evaluated in the RP assessment. (Category 2)
5. WVDEP permits appropriately include a requirement for evaluation of local limits, but do not include a time frame for submission. It is recommended that permits be revised to include a date for submission of the local limits evaluation. (Category 2)
6. WVDEP needs to ensure that the Annual Report required data is included in ICIS. (Category 2)

4. Stormwater

Proposed action items to help WVDEP strengthen its NPDES permit program include the following:

Critical Findings:

MSGP (WV0111457)

1. The permit must provide an explanation of the process to terminate NPDES coverage. (Category 1) (40 CFR 122.64)
2. Anti-degradation language/requirements must be included in the permit. (Category 1) (40 CFR 131.12)

CGP (WV0115924)

1. Construction of single family residences with less than 3 acres of land disturbance that are provided coverage under the general permit must also be required to submit an application for registration with WVDEP. (Category 1) (40 CFR 124.3)
2. The permit must include language to comply with the C&D Rule to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters, such as washout of concrete, paint, oils, and other construction materials. (Category 1) (40 CFR 450.21(d) and (e))
3. The permit must require that records be maintained for a period of at least 3 years. (Category 1) (40 CFR 122.41(j)(2))

MS4 (WV0116025)

1. The permit must contain anti-degradation requirements. (Category 1) (40 CFR 131.12)
2. The permit must specify when authorization occurs after the NOI is submitted. (Category 1) (40 CFR 122.28(b)((2)(iv)

Recommended Actions:

MSGP (WV0111457)

1. The permit should specify the qualifications that are required for the preparer of the SWPPP. (Category 2)
2. The permit should contain language related to modifications to the SWPPP. Specifically, the permit should consider when a modification is required, how modifications are to be tracked and approved by WVDEP, and the time frame allowed for a modification to occur. (Category 2)
3. The permit should specify the location where required monitoring is to occur. (Category 2)

CGP (WV0115924)

1. The permit should contain the same prescriptive requirements for post-construction stormwater as the MS4 general permit. (Category 2)
2. The permit should include specific instructions on how to conduct the self-inspections required by the permit. (Category 2)

MS4 (WV0116025)

1. It is recommended that the permit include specific requirements for discharges to high quality waters. (Category 2)
2. The permit should include specific guidance for permittees regarding what BMPs and/or actions are considered acceptable to WVDEP to address TMDLs. (Category 2)

Suggested Practices:

MS4 (WV0116025)

1. It is recommended that a separate permit be developed for non-traditional type MS4s since they do not have the same jurisdictional controls as municipal entities. (Category 3)

I. Regional Topic Areas

Proposed action items for special focus areas are provided below.

1. Chesapeake Bay

All three of the Chesapeake Bay permit that were reviewed for this PQR included WLAs for nutrients and TSS consistent with the assumptions of the WLA requirements of the approved Chesapeake Bay TMDL. Additionally, WVDEP is tracking the movement of WLAs between point sources discharges, as appropriate. There are no action items proposed to help WVDEP strengthen the NPDES program related to the Chesapeake Bay.

2. Concentration Animal Feeding Operations (CAFOs)

WVDEP has developed an NPDES CAFO individual permit template to help develop and issue permits. This template was used to issue the first NPDES CAFO individual permits in West Virginia. Additionally, WVDA made revisions to its NMP development processes, the goal of which is to identify conservation practices and management activities that, when implemented, help to ensure that both production and natural resource protection goals are achieved. EPA will continue to cooperate with WVDEP and WVDA to further improve NMPs, in part, by encouraging site-specific documentation of the NMP development process for each facility. There are no proposed action items to help WVDEP strengthen its NPDES program related to CAFOS.

3. Total Maximum Daily Loads (TMDLs)

Overall, WVDEP permits appear to be consistent with the assumptions of the WLA requirements of approved TMDLs. The follow proposed action item is suggested to help WVDEP strengthen its NPDES permit program:

Suggested Practices:

1. It is recommended that WVDEP continue to require data collection for TMDL pollutants of concern where no TMDL WLA is assigned and no discharge data exists,

in order to characterize the pollutant loadings in the discharge, verify assumptions of the TMDL and/or inform any future TMDL revisions, if necessary. (Category 3)