

Final

Region 8 NPDES Permit Quality Review

Colorado

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Region 8
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Contents

I.	PQR BACKGROUND	4
II.	STATE PROGRAM BACKGROUND	5
	A. Program Structure	5
	B. Universe and Permit Issuance	7
	C. State-Specific Challenges	15
	D. Current State Initiatives	15
III.	CORE REVIEW FINDINGS	16
	A. Basic Facility Information and Permit Application	16
	1. Facility Information	16
	2. Permit Application Requirements	16
	B. Technology-based Effluent Limitations	17
	1. TBELs for POTWs	18
	2. TBELs for Non-POTW Dischargers	18
	C. Water Quality-Based Effluent Limitations	19
	D. Monitoring and Reporting	21
	E. Standard and Special Conditions	21
	F. Administrative Process	23
	G. Administrative Record	24
	1. Documentation of Effluent Limitations	25
	H. National Topic Areas	26
	1. Nutrients	26
	Background	26
	2. Pesticides	28
	Background	29
	3. Pretreatment	32
	Background	32
	Critical Findings	35
	4. Stormwater	35
IV.	REGIONAL TOPIC AREA FINDINGS	43
	A. Compliance Schedules	43
	Background	43
V.	ACTION ITEMS	45
	A. Basic Facility Information and Permit Application	45
	B. Technology-based Effluent Limitations	46

C.	Water Quality-Based Effluent Limitations	46
D.	Monitoring and Reporting	47
E.	Standard and Special Conditions	47
F.	Administrative Process (including public notice)	47
G.	Documentation (including fact sheet)	47
H.	National Topic Areas	48
1.	Nutrients	48
2.	Pesticides	48
3.	Pretreatment	48
	Critical Findings	48
4.	Stormwater	49
I.	Regional Topic Areas	49
1.	Compliance Schedules	49

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, the EPA promotes national consistency, and identifies successes in implementation of the NPDES program and identifies opportunities for improvement in the development of NPDES permits.

The EPA’s review team, consisting of four EPA Region 8 staff, one EPA Headquarters (HQ) staff, and one contractor staff conducted a review of the Colorado NPDES permitting program which included an on-site visit to the Colorado Department of Public Health and Environment (CDPHE) in Denver on August 21, 2017 through August 24, 2017.

The Colorado 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 Colorado NPDES program. Permits reviewed as a part of the core permit review included:

- CO-0020834 – City of Steamboat Springs
- CO-0021067 – Widefield Water and Sanitation District
- CO-0021547 – City of Brighton
- CO-0026646 – City of Pueblo
- CO-0026701 – City of Loveland
- CO-0026753 – Colorado Springs Utilities – Las Vegas
- CO-0037966 – Centennial Water and Sanitation District
- CO-0039748 – Fremont Sanitation District
- CO-0040339 – City of Salida
- CO-0046174 – Fruita Development LLC-Gilsonite Refinery Sand and Gravel
- CO-0047627 – City of Fort Collins – Drake
- CO-0048054 – XTO Energy-Lorencito Canyon
- CO-0048691 – SWG Fountain Valley, LLC
- CO-0048959 – Metro Wastewater Reclamation District-Northern Treatment Plant

- CO-0048996 – Noosa Yoghurt WWTF
- COG—860000 – Pesticide General Permit
- COR-090000 – MS4 General Permit
- COR-900000 – Multi-Sector General Permit for Stormwater Discharges associated with Industrial Activity
- COR-400000 – General Permit for Stormwater Discharges from Construction Activity

In addition, discussions between the 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 Colorado 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 area selected by EPA Region 8 includes an evaluation of the implementation of compliance schedules. These reviews provide important information to Colorado, EPA Region 8, EPA HQ and the public on specific program areas. A total of twenty permits were reviewed as part of the PQR. Permits were selected based on issue date and the review categories that they fulfilled.

II. STATE PROGRAM BACKGROUND

A. Program Structure

Colorado received authority to administer the NPDES permit program in 1975 and in 1982 for the general permits program. Colorado does not have authority to implement permits for federal facilities, federal pretreatment requirements, federal biosolids requirements, and does not have jurisdiction for permitting discharges on tribally-owned lands within Indian reservations. The Clean Water Program, within the Water Quality Control Division (WQCD) of CDPHE is responsible for administering the NPDES permit program. The Water Quality Control Commission (Commission) is the administrative agency responsible for developing water quality standards. The Commission is appointed by the Governor and confirmed by the state Senate for three-year terms. The Commission also serves a quasi-judicial role in administrative hearings concerning appeals of certain decisions of the WQCD. Within the Clean Water Program is the Watershed Section, Clean Water Compliance and Enforcement Section, and the Permits Section, which is divided into three units that manage permits based on discharge type. Permits Unit 1 manages stormwater and construction permits; Unit 2 oversees municipal permits, industrial stormwater general permits, and some industrial permits; and Unit 3 administers industrial permits, especially those permits that fall under federal Effluent Limitation Guidelines (ELGs) and standards. Each Unit is led by a Unit Manager, who report to the Section Manager. The main office is located in Denver; all permit support is conducted from the main office. CDPHE also maintains three field offices that employ inspection staff only.

The Permits Section employs 20 permit writers, which includes three vacant positions. Permit writers are trained through internal mentoring and attendance at the EPA’s NPDES Permit Writers’ Course. Permit writers conduct water quality modeling during permit development; however, Units 2 and 3 have staff who are the primary water quality modelers for NPDES permitting. CDPHE employs three staff who support development of Total Maximum Daily Loads (TMDLs). In addition to technical staff, the WQCD administrative staff support with intake of permit applications and data management professionals that assist with data collection, data entry into the EPA’s Integrated Compliance Information System (ICIS), management of electronic Discharge Monitoring Reports (eDMRs), and transition to the electronic reporting rule requirements. Section and Unit Managers assign permits to staff following receipt of permit renewal applications and based on sector familiarity or staff expertise and in consideration of the permit writer’s workload.

The WQCD uses a SharePoint-based database (“Aquifer”) to house data and manage workflows until permits are finalized. Staff are able to “check out” permit materials from this database; this enables version control on working versions of permit documents. The WQCD also uses the Permit Builder Tool and AMMTOX; both tools are spreadsheets equipped with macros, formulas, and linked tabs, and MDL-win, a statistical program used when data are mixed (i.e., includes non-detects and detected values). The Permit Builder Tool uses specific data inputs to calculate applicable WQS, evaluate reasonable potential (RP), and calculate water quality-based effluent limitations (WQBELs).

The WQCD uses templates for development of permits, fact sheets, and water quality assessment documents. Further, staff have different templates for several categories of permits including individual and general permits (e.g., industrial stormwater, and construction stormwater general permits). The WQCD has developed an information system to generate draft permits; however, it was not in use at the time of the PQR. Administrative staff use the Aquifer data base to generate certifications under the construction stormwater general permit.

Permit writers use spreadsheets and databases to evaluate reasonable potential and refer to formulas in the reasonable potential tab of the Permit Builder Tool to identify how the discharge monitoring report data statistics compare to proposed WQBELs. WQCD staff use the Permit Builder Tool to calculate mixing zones with the assumption of complete (i.e., 100 percent) mixing; they require permittees to submit mixing zone analyses to periodically verify the mixing zone for their discharge.

The Permits Section has developed numerous policies and guidance to support the development of NPDES permits. Some of the policy and guidance documents include:

- CW-1: Reasonable Potential
- CW-1: Applicability of Nutrients Management Control Regulation, Dilution
- CW-3: Compliance Schedules
- WQP-19: Policy for characterizing ambient water quality for use in determining WQBELs
- WQP-20: Baseline monitoring frequency
- Whole Effluent Toxicity (WET) testing policy

- Antidegradation significance determination guidance
- Colorado Mixing Zone implementation guidance

The Permits Section provides internal permit training amongst staff to share expertise on specific topics and sends permit writers to the EPA’s NPDES Permit Writers’ Training Course. Permit writers are encouraged to seek peer quality assurance and quality control (QA/QC) and discuss specific permit scenarios, options, and precedence in order to develop their skills and increase their knowledge and experience with permit development. In addition, work group leaders and Unit Managers within the Permits Section provide QA/QC for permit writers during review of draft permits. Permits staff do not use a specific QA/QC checklist during reviews; however, the work flow process via the Aquifer database functions as a checklist. As specific processes are completed during permit development, work flow is automatically directed to the next reviewer, alerting them to the need for a specific review—including reviews by work group leaders and other management.

Permit files are maintained electronically using HP Records Manager and HP Trim. Permit documents under development, including draft permits, fact sheets, and supporting documents, are maintained in the Aquifer database. Once the permit documents are finalized, final versions are transferred to HP Records Manager. Permits staff delete earlier versions of draft documents once they have been finalized. Permit-related correspondence is uploaded into HP TRIM by administrative staff and permit writers. Monitoring and reporting data are received via netDMR (i.e., electronic reporting of DMRs); however, they may still receive hard copies that are manually entered into NPDES-ICIS and subsequently scanned into HP Records Manager. All final correspondence related to compliance and enforcement, including email, and mailed letters, is uploaded into HP Records Manager in accordance with CDPHE’s file plan. Privileged and confidential communications are handled separately and in accordance with the file plan. Staff are developing a process by which older and existing paper correspondence is converted to electronic format for uploading into HP Trim. Facility compliance records are maintained in NPDES-ICIS and NPDES Permit Compliance Evaluation Inspection reports are stored in HP Trim.

B. Universe and Permit Issuance

As provided during the audit, the CDPHE permits 370 municipal facilities (93 major and 214 non-major) and 343 non-municipal facilities (1 major, 342 non-major) under individual NPDES permits. The State considers CAFOs as “permitted” facilities and “registered” facilities; there are 114 registered and 10 permitted CAFOs in Colorado. CDPHE’s universe of stormwater permittees includes 124 municipal facilities, 917 industrial stormwater, and 4,522 construction stormwater. CDPHE regulates 1,540 permittees under non-stormwater general permits. CDPHE also administers seven general permits that regulate discharges to groundwater. The State’s 22 general permits fall into six sectors: Mining, Commerce and Industry (non-Mining), Pesticides, Sewage Systems, Construction, and Municipal Separate Storm Sewer Systems (MS4s). The general permits that CDPHE administers include the following:

- Sand and Gravel Mining (2)
- Subterranean Dewatering or Well Development
- Hydrostatic Testing of Pipelines, Tanks and Similar Vessels

- Coal Mining
- Produced Water Treatment Facilities
- Metal Mining Industry Storm Water
- Aquatic Animal Production
- Commercial Washing of Outdoor Structures
- Non-Contact Cooling Water
- Water Treatment Plant
- Non-Extractive Industries Storm Water
- No-Exposure Exclusion from CDPS Storm Water Permitting
- Pesticides Application
- Domestic Wastewater Treatment Plants (2)
- Construction Dewatering
- Remediation Discharges to Surface Water
- Construction Stormwater
- MS4 Cherry Creek Reservoir Basin
- MS4 Non-Standard
- MS4 Standard

CDPHE indicated that 136 individual permits are backlogged (approximately 18 percent of the universe of individual permits)

CDPHE sends out application reminder notices with links to appropriate application forms approximately 270 days prior to permit expiration; the reminder notice is generated by a database, based on permit expiration and expected renewal dates. CDPHE follows up with applicants at the 180 and 90 days prior to permit expiration, to obtain a status update and work towards a timely application submittal. For general permits, CDPHE has provided pre-populated application forms for the permittee to verify or correct information. CDPHE uses state application forms, based on the EPA NPDES permit applications. Individual permit application forms have not been updated recently but general permit application forms are updated with each permit renewal cycle to collect information that aligns with changing permit requirements. Upon receipt, applications are scanned into Records Manager and WQCD support staff enters preliminary data into the Aquifer database to verify information including facility address, latitude/longitude coordinates, receiving water name, and permittee name. WQCD support staff generate a letter for the applicant notifying them that CDPHE has received their application and conduct the initial application review to determine whether it is administratively complete. Also upon receipt, Unit Managers assign the permit to permit writers, where the permit development process begins with a full application review to determine whether it is technically complete. The Aquifer database supports permit work flow activities for each permit assigned. WQCD permitting staff estimated that a minor permit that requires an individual water quality assessment (WQA) can be developed in 1 month, and completion of internal reviews, public notice, and issuance within 6 months. Staff stated that a major permit that requires a WQA for multiple dischargers can take approximately a year to draft and issue.

For individual permits, permit writers begin the permit development process with the application review and consultation with the applicant to clarify application information, as necessary. The permit writer may also review the previous permit, inspections, and compliance documents during the initial phase of permit development. Permit writers typically begin permit development with generation of the WQA. The WQA template guides a large part of the permit development process in that permit writers must first create a facility map identifying the discharge location, and subsequently identify various attributes of the receiving water body, including: identification of the specific segment, applicable WQS (including Total Maximum Daily Loads [TMDLs]), impairment status, characterize ambient water quality and

receiving stream flow, in order to develop WQBELs. Permit writers employ the Permit Builder Tool, entering facility-specific data inputs to calculate applicable WQS, evaluate RP, and calculate WQBELs. The WQA also guides permit writers through various analyses as appropriate for the facility, including evaluation of antidegradation procedures, and parameter-specific concerns for bioaccumulative parameters, sodium adsorption ratio, electrical conductivity, nutrient parameters, and application of federal Effluent Limitation Guidelines and Standards (ELGs). The WQA receives peer review and review by a work group leader, before permit development continues. Permit writers begin drafting the fact sheet and permit upon receiving approval on the WQA. Permit writers often consult with unit managers and work group leaders during permit development, to ensure consistent implementation of Division policies and procedures. Unit managers review the fact sheet and permit in detail prior to distributing for applicant and public review and comment.

For general permits, permit staff maintain a running list of suggested changes to the permit based on feedback from staff from permits enforcement, administrative/support, permittees, and other stakeholders. The permit writer becomes familiar with the specific regulated sector through site visits, discussions with permittees, trade group representatives, and conducting general research. The permit writer reviews ICIS-NPDES data, applicable federal ELGs, federal permits and guidance, and the WQCD permitting policies. Permit writers use a combination of the current general permit and fact sheet and the most current individual permit and fact sheet templates as starting points for generating the renewal permit documents. The WQCD conducts stakeholder outreach during the permit development process and includes the unit manager in the development of the general permit. Further, the unit manager reviews the draft permit and fact sheet in detail; upon their review and approval, the unit manager provides the draft permit and fact sheet to the section manager for their review and approval.

The WQCD moved towards a watershed-based permitting approach circa 2007, because the Division asserted that a watershed-based approach provided better data for developing WQBELs and protecting water quality. The watershed-based permitting approach begins with evaluation of the WQS and one to two years after the WQS are in place, the permit renewal cycle starts. The Division may administratively extend some individual permits in order to allow permit renewals to align with the timing of the watershed-based permitting cycle; in some cases, there may be a one-year lag time between WQS evaluation/update and the permit renewal cycle to commence. CDPHE stated that applications are typically received by the time the watershed-based permitting cycle begins and permit writers coordinate with applicants to collect updated information while awaiting the start of the permit renewal cycle, to ensure all parties are prepared for the renewal. As part of watershed-based permitting, CDPHE develops the WQA and models all dischargers together; providing a more realistic representation of the receiving water body's water quality and assimilative capacity.

CDPHE implements technology-based effluent limitations (TBELs) through application of federal ELGs for industrial facilities and Colorado's Regulations for Effluent Limitations, Regulation No. 62, Volume 5 of the Code of Colorado Regulations (CCR), 1002-62 (5 CCR 1002-62). Regulation No. 62 establishes effluent limitations for biochemical oxygen demand (BOD), total suspended solids (TSS), carbonaceous BOD, total residual chlorine, pH, oil and grease, and percent removal

for BOD and TSS. TBELs in regulation are established through the Water Quality Commission. CDPHE also established TBELs for nutrient parameters in Regulation No. 85, 5 CCR 1002-85. Requirements for establishing TBELs based on best professional judgment (BPJ) are outlined in Regulation No. 61.8(2)(a). BPJ-based effluent limitations are developed following consideration of the availability of appropriate technology, its economic reasonableness, the age of equipment and facilities involved, the processes employed, and water or energy consumption. Requests for BPJ-based limitations are reviewed by a hearing officer during an adjudicatory hearing.

Colorado's water quality standards (WQS), containing numeric and narrative criteria, are established in Regulation No. 31, 5 CCR 1002-31 (*The Basic Standards and Methodologies for Surface Water*). The regulation establishes statewide standards that are applicable to all state surface water as well as site-specific water use classifications and accompanying standards. Table value standards (TVS) are based on criteria set forth in three tables contained in the Basic Standards regulation; these are levels of pollutants determined to be generally protective of the corresponding use classifications. They are applied in most circumstances, unless site-specific information indicates that one of the following approaches is more appropriate.

Colorado's WQS (Regulation 31.6) allow for the adoption of temporary modifications to WQS "where the use classification is based upon a future use for which the waters are to become suitable" and "where the Commission determines that there is significant uncertainty regarding the appropriate underlying standard" (e.g., if the existing quality of a water body is the result of natural or irreversible human-induced conditions". Temporary modifications are accompanied by an implementation plan and studies to eliminate the temporary modification and determine the appropriate long-term WQS.

Colorado's WQS, Regulation 31.9(2) allow for the establishment of compliance schedules "Where the Commission has adopted new standards, temporary modifications or revised standards that have become more stringent, or where the Division has developed new interpretations of existing standards, including, but not limited to, implementation requirements through approved TMDLs and Wasteload Allocations and antidegradation reviews; the Division may include schedules of compliance in Colorado Discharge Permit System (CDPS) permits when it determines such schedules to be necessary and appropriate." Colorado also maintains a policy, CW-3, regarding the implementation of compliance schedules in permits.

Permit writers identify pollutants of concern based on discharge type. For minor domestic discharges, parameters regulated in Regulation No. 62, *E. coli*, total residual chlorine, and ammonia are considered pollutants of concern. Generally, metals are not considered pollutants of concern in minor domestic discharges, unless the receiving water body is impaired by metals, and in which case, permits establish monitoring requirements or WQBELs based on a TMDL. Most major domestic discharge permits identify metals as pollutants of concern. Permit writers identify pollutants of concern in industrial discharges using federal ELGs as well as ELG development documents, specific pollutants related to the industry, or pollutants based on chemical addition.

Permit writers evaluate RP following procedures contained in the WQCD guidance document, Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential (November 18, 2013). RP is evaluated both quantitatively and qualitatively, based on a modification of the EPA’s guidance on evaluating RP presented in Chapter 3 and Appendix E-1 of the EPA’s Technical Support Document for Water Quality-based Toxics Control (“TSD”). The WQCD uses the 95th percentile to characterize the effluent concentration for a quantitative reasonable potential evaluation; the maximum estimated pollutant concentration is an estimate of the pollutant concentration in an effluent that exceeds the 95th percentile of the data set, at the 95% confidence level. To conduct a quantitative evaluation, permit writers require a minimum of 10 effluent data points from the previous five years. The RP guidance document includes specific instructions regarding how to manage data sets with 1) all values above method detection limits and 2) values below detection limits. Equations presented in the RP guidance document are housed in the Permit Builder Tool. Permit writers compare the maximum estimated pollutant concentration with the maximum allowable pollutant concentration (or, the calculated assimilative capacity identified in the WQA), which is a value that accounts for dilution, background pollutant concentration, and pollutant loadings from other dischargers. If the maximum estimated pollutant concentration is greater than the maximum allowable pollutant concentration, RP exists. If the maximum estimated pollutant concentration is less than the maximum allowable pollutant concentration, the permit writer conducts a qualitative analysis of RP. A qualitative determination of RP may be made when source controls are employed to reduce the concentrations of certain pollutants; to assure that source controls are maintained. In addition, permit writers may make a qualitative determination of RP where federal ELGs exist for a parameter and where the quantitative analysis returns a determination of no RP. As the federal ELG is generally less stringent than WQBELs, if the discharge contained concentrations at the ELG (above the WQS), the discharge may cause or contribute to excursion of a WQS.

If the WQCD determines that a pollutant demonstrates reasonable potential, the permit establishes a WQS-based effluent limitation. If the WQCD determines that no reasonable potential exists, the permit will not establish an effluent limitation; however, the permit may include monitoring requirements. Permit writers employ the Permit Builder Tool to develop WQBELs, using stream-specific applicable water quality standards and ambient water quality data, in addition to facility-specific effluent monitoring data and calculated effluent coefficients of variation (CV). The WQCD developed the Policy for Characterizing Ambient Water Quality for Use in Determining Water Quality Standards-Based Effluent Limits (May 2002), to provide specific guidance for characterizing upstream ambient water quality for use in developing WQBELs. The WQCD uses ambient water quality data sourced by the Division, U.S. Geological Survey (USGS), River Watch of Colorado, and any other monitoring organizations that respond to a data call by the WQCD. Permit writers prioritize Division and USGS data; however, will use any representative data that are available on the statewide data sharing network. Permit writers use ambient background data either from the receiving water body or from a comparable watershed. In the absence of those data, permit writers assume zero as the ambient background value. The upstream background pollutant concentrations used in the mass-balance equation vary based on the regulatory definition of existing ambient water

quality, but for most pollutants, existing quality is determined to be at the 85th percentile. For metals, existing quality is determined to be the 50th percentile; for pathogens such as *E. coli* and fecal coliform, the geometric mean represents existing quality. Permit writers input ambient water quality data into the AMMTOX model during their evaluations of RP.

Colorado’s mixing zone requirements are established in Regulation No. 31.10 and are accompanied by CDPHE’s Colorado Mixing Zone Implementation Guidance (April 2002). CDPHE applies different size restrictions based on the water body classification—whether they are reviewable waters or use-protected waters. The regulatory mixing zone for streams and rivers is directly scaled to channel width, whereas the mixing zone for lakes is based on an area measurement. The WQCD evaluates stream low-flow values and critical conditions, and generally assumes 100 percent dilution. Most discharges are to waterways with high flow and rapid mixing. Extreme mixing ratios exist under two conditions: when large amount of effluent discharge to small amounts of low flow and when small amounts of effluent discharge to high amounts of low flow. Based on the Mixing Zone Implementation Guidance, “Both of these types of extremes generate circumstances leading to exclusion of discharges from the necessity of calculations and estimates related to mixing zones.” Further, according to the mixing zone regulations, the threshold for exclusion is a ratio of 2:1 for effluent to receiving water; when the effluent is more than twice the volume of the receiving water at chronic low flow, permits can be developed on the basis of a fully-mixed condition. In addition, the threshold for exclusion for the opposite extreme is a ratio of effluent to stream of 1:20 under low-flow conditions; CDPHE finds there is “...no reason to expect that the discharge would raise special issues of environmental concern.” For discharges that don’t meet the extreme mixing ratio, the WQCD requires the permittee to conduct a mixing zone study during the next permit term. Permits staff noted that it is uncommon that permittees need to conduct a new mixing zone study because conditions remain such that the original mixing zone analysis is appropriate. Mixing zone studies are not required with every permit renewal and the mixing zone policy is silent on study frequency. When determining if a mixing zone study is required, CDPHE evaluates whether the watershed has changed due to installation of a dam or other diversion, or due to drought conditions, and allows hydrology and other site-specific conditions dictate the frequency of mixing zone study updates. Permits staff review the mixing zone study upon permit renewal to verify that a mixing zone reduction is not necessary.

The amount of available assimilative capacity (i.e., dilution) that may be used by the permittee in terms of WQBELs developed for the discharge may be limited based on a mixing zone analysis or other factors. Other factors that reduce available assimilative capacity may include the presence of a water diversion downstream of the discharge; the likelihood of bioaccumulation of toxins in fish or wildlife; and the presence of threatened and endangered species. The WQCD assumes that the full assimilative capacity can be allocated unless a decision has been made regarding the amount of assimilative capacity that can be used by the facility. Permit writers used the Permit Builder Tool and the AMMTOX model to develop WQBELs. The WQCD’s standard WQBEL development process consists of the use of steady-state, mass-balance equations for most pollutants; the mass-balance equation accounts for upstream concentrations, critical low-flow values, effluent flow, and the applicable WQS. The

WQA describes the WQBEL development process in detail. The WQA presents parameter-specific discussions applicable water quality standards, a characterization of ambient water quality, projected effluent limitations, a summary of data used in the RP analysis, results of the RP analysis, discussion of AMMTOX modeling, mass-balance modeling, technology-based limitations, WQBELs calculations, comparison of applicable effluent limitations, and an evaluation of antidegradation requirements. The WQA also discusses whether specific comments were made during the comment period, relative to WQBELs.

Permit writers evaluate the receiving water body's impairment status and establish permit requirements accordingly; for impaired water bodies that do not yet have an approved TMDL, permit writers establish monitoring requirements for the impairing pollutants and subsequently evaluate RP during the permit renewal application phase. For impaired water bodies where there is an approved TMDL, permit writers review the TMDL to determine if the facility is listed as a contributing source of the impairing pollutant. Permit writers implement the TMDL in the permit through incorporation of assigned wasteload allocations and other associated requirements. Permit writers collaborate closely with TMDL staff during permit development to ensure consistent and appropriate TMDL implementation in permits.

Antidegradation provisions are established in Regulation No. 31.8 and establish three levels of protection for Colorado's waters—Outstanding Waters, Reviewable Waters, and Use Protected Waters. Reviewable waters are to be maintained and protected at their existing quality unless it is determined that allowing poorer water quality is necessary to accommodate important economic or social development in the area in which the waters are located. New or increased water quality impacts to reviewable waters must undergo an antidegradation review. The WQCD maintains procedural guidance in the document, "Antidegradation Significance Determination for New or Increased Water Quality Impacts" (December 2001), to provide a documented methodology and ensure that antidegradation reviews are conducted in a consistent manner. For a reviewable water, the first consideration is to determine if new or increased impacts are expected to occur. If they are expected, the next step is to go through the significance determination tests and calculate antidegradation-based effluent limitations. If a new or increased water quality impact is determined to result in significant degradation, then an antidegradation-based effluent limitation (ADBEL) is needed. If a new or increased water quality impact is determined to result in a finding of no significant degradation, then the new limitations would be the WQBELs. If the new or increased water quality impact is determined to result in significant degradation, and the permittee chooses to accept the levels that would keep them insignificant, such as the antidegradation based average concentration (ADBAC) or the Threshold Load (TL), then potential limitations would be the new WQBEL and the ADBEL set at the ADBAC or TL concentration. The discharger also has the option of pursuing an alternatives analysis for an effluent limitation set as some limit resulting from the alternatives analysis.

Permit writers establish monitoring frequencies based on the WQCD document, WQP-20, Baseline Monitoring Frequency, Sample Type and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities (effective May 1, 2007). Appendices A through D of the monitoring guidance document serve as the starting point/template for

establishing monitoring frequencies and other monitoring requirements. Reporting requirements are established based on discharge categories, facility size, and industrial sectors. In conjunction with the monitoring frequency policy. In addition, other reporting requirements are developed for special studies, additional monitoring studies, mixing zone analyses, and compliance schedules based on interim benchmarks to report status of progress towards achieving compliance with final effluent limitations. Permits contain requirements for permittees to use sufficiently sensitive analytical test methods, capable of detecting and measuring pollutants at, or below, applicable water quality criteria or permit limitations. Permit writers review application data with attention to whether sufficiently sensitive methods were employed for the analysis and ensure that the permits include the requirements to use appropriate analytical methods.

Two areas where the Division routinely includes requirements in discharge permits as implementation of narrative WQS include toxicity, through requirements for whole effluent toxicity (WET) testing, and protection of irrigated crops, through requirements for electrical conductivity and sodium adsorption ratio. In addition, WQCD establishes narrative conditions for inspections, corrective actions, surface water management plans, best management practices, and annual report requirements. In addition, some municipal permits may contain narrative conditions specific to pretreatment program requirements, despite the state not being authorized to administer the pretreatment program. The WQCD uses boilerplate language for standard NPDES conditions and include the standard conditions in Part II of all permits. The WQCD updates standard conditions as requirements change; the most recent update to WQCD's standard conditions incorporated requirements for sufficiently-sensitive methods.

The WQCD prepares fact sheets for all NPDES permits. Permit writers draft fact sheets concurrent with individual permit development; for general permits, fact sheets are drafted with general permit certifications. Permit writers use templates to prepare the fact sheets and templates contain boilerplate language. Drafting the WQA is the first step in the permit development process, followed by fact sheet development. The WQCD updates fact sheets to reflect changes in the revised draft permit and incorporate public comments and WQCD responses to comments.

Colorado's Section 401 Certification Regulation, Regulation No. 82, outlines the procedures to request a Section 401 certification in Colorado and identifies the procedures and criteria that will be used by the WQCD in acting on certification requests. Federal permits that require Section 401 certifications in Colorado are: 1) federal CWA Section 404 permits issued by the Army Corps of Engineers for the discharge of dredged or fill material; 2) licenses issued by the Federal Energy Regulatory Commission (FERC); 3) federal CWA Section 402 permits issued for federal facilities by the EPA; and 4) other federal permits or licenses that may be determined to require a Section 401 certification. Based upon the information provided by an applicant, the Division may approve, conditionally approve or deny Section 401 certification requests. WQCD staff in the Watershed Section review and process Section 401 certifications.

Draft permits are posted on CDPHE’s website during the public notice period. In addition, the public notice is sent to the Denver Post newspaper with a link to CDPHE’s website where the public notice and all relevant documents are posted. Public notices are distributed on the second Thursday of each month, and more frequently as necessary. WQCD distributes a Public Notice summary list to all permittees included in the public notice, counties involved, and any other interested parties. A copy of the list is also sent out to the WQCD email distribution list. As public comments are received, WQCD permit writers or administrative support staff upload comment documents to the Records Manager.

The WQCD has received some permit appeals, mostly regarding permittee challenges to the permit. The WQCD encourages staff and permittees to exhaust the administrative procedures before issuing a permit appeal. Permit appeals are addressed through the Office of Administrative Courts.

WQCD staff noted that the Aquifer database is the internal system that permit writers use throughout the entire permit development process, beginning with retrieval of appropriate templates, drafting the permit documents, processing internal QA and reviews, to managing public comments and responses on the draft permit. WQCD staff indicated that the intent is to have the Records Manager serve as the permit administrative record; the process is in transition in that portions of the permit record are retained in hard copy while others are maintained electronically (Records Manager).

C. State-Specific Challenges

CDPHE indicated that they face certain challenges during permitting on a watershed-level basis because the approach requires modeling multiple discharges in a WQA and staff then need to determine who receives the assimilative capacity available in the watershed. CDPHE commented that stakeholders are challenging the agency’s use of flow limits in permits. CDPHE also indicated that they are facing an increasing number of applicants that are discharging to off-stream ponds that are closely hydrologically connected to surface waters, in an attempt to avoid NPDES permitting requirements. CDPHE has permitted these as discharges to surface waters; however, this has created challenges including determining appropriate points of compliance (e.g., monitoring wells or end-of-pipe).

D. Current State Initiatives

CDPHE indicated they are conducting a routine review of their permitting regulations in October 2018. CDPHE may also propose changes resulting from the EPA’s PQR in 2019; the agency pre-notices regulation changes to obtain stakeholder involvement and has included a line item that specifically addresses changes because of the PQR, however given the timing of the finalization of the PQR any regulatory changes will need to go through an additional public notice process. CDPHE also plans to incorporate changes that implement the NPDES Update Rule, including potentially allowing calculation of WQBELs based on actual flow rather than design capacity. This would require a modification to Regulations 22 and 61, and is being discussed as a part of a stakeholder process.

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 found in 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.

All permits reviewed clearly presented appropriate permit issuance, effective, and expiration dates as well as proper signatures, facility location, and receiving water identification. Further, all permits appropriately identified all authorized outfalls and provided sufficient outfall locational information. Reviewers commented that for some permits, upstream receiving water monitoring locations are identified in the same table as discharge outfalls, thereby causing a slight misperception that ambient receiving water monitoring locations are discharge points. A recommendation, to lessen possible misunderstandings, is to present identification of discharge outfalls and monitoring locations separately.

Fact sheets reviewed for municipal permits consistently provide a thorough discussion of facility information and locational information and a clear description of wastewater treatment processes. Fact sheets reviewed for non-municipal permits did not consistently provide a clear description of facility operations, associated waste streams, and wastewater treatment processes. The EPA recommends CDPHE add more detail in fact sheets developed for this sector in the future.

Permit records and the fact sheets provide adequate information regarding the receiving water body, the location within the receiving water where the discharge occurs. The fact sheet did not consistently discuss the designated uses of the receiving water although the WQA document does contain this detailed information. The EPA recommends the WQCD incorporate the receiving water information presented in the WQA document in the fact sheet for permit renewals, given that the WQA is not always presented with the draft permit and associated fact sheet.

2. Permit Application Requirements

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

Colorado uses state application forms: The Colorado Discharge Permit System (CDPS) Domestic Wastewater Treatment Plant Permit Application and the Industrial Individual Wastewater Discharge Permit Application. A footer on the industrial application form suggests it was revised

April, 2011 and a footer on the domestic discharge application form indicates the version is from April, 2014.

POTWs are required to submit applications in accordance with 40 CFR 122.21(a)(2)(B), which requires data submittals consistent with 40 CFR 122.21(j)(4)(vi) and (ix) (Effluent Monitoring for Specific Parameters, reporting of a minimum of three samples and maximum daily values) and 40 CFR 122.21(j)(5) (Whole Effluent Toxicity). It did not appear that the state application forms were equivalent to the EPA forms, as effluent testing requirements appeared to be inadequate; the EPA noted that it does not appear that the application did not request these required effluent characterization data. Further, the CDPS Domestic Wastewater Treatment Plant Permit Application, Receiving Water Information section, asks applicants to submit “any other studies or other analyses which you feel may help the Division in its development of effluent limitations for your facility;” however, the form does not present it as a requirement. The CDPHE’s application forms need to have submittal requirements on the specific data that applicants are required to submit, consistent with the requirements in 40 CFR 122.21, and contain all elements required by the e-reporting rule (40 C.F.R. 127, Appendix A).

Except for two permits, all permit records contained the current permit application package. The applications reviewed were timely submitted and the data and information required in the state forms was complete, with the following exceptions listed below. In many cases, permit application data were not located in the permit file attached to the application; rather, reviewers located the data separate from the application or not at all in the file. In addition, some permit applications lacked required facility maps and flow schematic diagrams. The EPA recommends the permit writers include a note to the permit file indicating the location of additional data to be considered with the permit application. As stated previously, the applications were not technically complete because the state application forms did not include all of the necessary/equivalent data required by 40 CFR 122.21 and 122.22.

The EPA noted that permit records lack documentation of WQCD staff conducting a review for technical completeness; this documentation is relevant to scenarios where the state has administratively extended the permit. In accordance with 40 CFR 122.6, an expired permit may continue if the permittee has submitted a timely application which is a complete application for a permit. It would be a best practice to include documentation in the permit record that demonstrates that the application is deemed complete.

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. The EPA reviewed 11 POTW permits as part of the PQR.

Colorado's POTW permits appropriately established TBELs based on federal secondary treatment standards and included proper pollutants, limit frequencies (i.e., average weekly and average monthly limit bases), and units of measurement. Further, permits appropriately established minimum percent removal requirements for BOD and TSS. Fact sheets for POTW permits provided a general description of wastewater treatment processes which supported the TBELs established in the permits. In addition, fact sheets for POTW permits identified the basis for TBELs, citing Colorado's Regulation No. 62.

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

Three non-POTW permits were reviewed as part of the PQR, including a steam electric generating facility, a yogurt processing facility, and an oil and gas extraction facility. Fact sheets included a basic description of facility operations and associated waste streams. However, the basic description of the facility operations and associated waste streams in the fact sheets did not adequately characterize the facility to determine if the respective ELGs applied to the facility.

For example, all reviewed fact sheets that accompanied the non-POTW permits reviewed by the EPA identified applicable ELGs. However, the fact sheet for the steam electric generating facility indicated that steam electric ELGs established in 40 CFR 123 did not apply to the discharge and lacked clarity in the rationale for the determination that the steam electric ELGs did not apply. The fact sheet is further weakened by a minimal facility description and lack of discussion of ELG applicability.

The original permit for the yogurt and milk processing facility represented a misapplication of federal ELGs for yogurt and milk processing, it appears that there may have been a translation error between the fact sheet and permit. The mistake was corrected in a subsequent permit modification after the permittee identified the mistake. The documentation in the fact sheet was appropriate. Final effluent limitations established in the modified permit were based on the ELGs, for appropriate pollutants, and in the correct form.

The oil and gas extraction permit did not include final effluent limitations based on TBELs found in 40 CFR 435-Oil and Gas Extraction Point Source Category and discussed on page 48 of the CO-0048054, XTO Energy, Lorencito Canyon fact sheet; rather, the final effluent limitations were based on water quality-based effluent limitations.

The EPA recommends that the WQCD ensures that fact sheets include an informative discussion of facility operations, processes, and associated waste streams and resulting ELG categorization and applicability.

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 will cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, including narrative criteria for water quality.

The PQR for Colorado 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).

CDPHE permit records clearly identify the receiving stream, the specific location of the discharge within the receiving water body, designated uses, and applicable WQS. In addition, permit records discuss the receiving stream’s impairment status and whether there are TMDLs applicable to the discharge. Most of this information was provided in the WQA document.

WQCD staff prepare WQAs as an integral step in the permit development process. The WQA document is a separate document in the permit record in which pollutants of concern are identified and evaluated for RP, and WQBELs are developed. The WQA incorporates receiving water information related to the location of the discharge, such as applicable water quality criteria, critical conditions, stream flow, ambient water quality data, as well as facility-specific effluent monitoring data, to evaluate if the discharge has RP. The WQA document summarizes the RP results for each pollutant considered and for those pollutants that demonstrate RP, the WQA presents the proposed WQBELs. Overall, the WQA document provides a comprehensive and succinct analysis of the potential impact the discharge has on water quality and is a critical component of the permit record. The fact sheets reviewed did not always present the reviewer with a full understanding of pollutants of concern identified for the discharge, designated uses of the receiving water body, impairment status and TMDL considerations for the receiving water, assumptions used in the RP evaluation, and the determination that WQBELs are necessary for the discharge. Further, fact sheets lacked illustration of the RP analysis and calculations for WQBELs, where WQBELs were deemed necessary. Fact sheets discussed antidegradation and anti-backsliding inconsistently; some fact sheets addressed these topics whereas others were silent. The EPA recommends the CDPHE include WQA information in the fact sheet, given that the fact sheet is directly linked to the draft permit and provides the rationale and basis for permit conditions and effluent limitations. The EPA also recommends the WQCD append the WQA to the fact sheet, as it would illuminate complex issues such as RP analysis, WQBEL development, anti-backsliding considerations, and antidegradation evaluations. The fact sheet would be much strengthened with a more robust discussion, similar to what is included in the WQA.

Certain fact sheets reviewed for POTW permits provided clear statements regarding whether the pollutants of concern were likely to be in the discharge. However, fact sheets for POTW permits would benefit from a more robust discussion of non-domestic or industrial users in the service area and potential POTW impacts from industrial or non-domestic contributions. POTW applications contained some useful information related to the non-domestic dischargers contributing to the wastewater treatment plant; however, such information was not always included in the respective fact sheet.

All fact sheets and/or WQA documents reviewed clearly indicated the discharge demonstrated RP for WET and accordingly, all permits reviewed established numeric effluent limitations for WET. In addition, fact sheets presented a complete explanation of chronic WET limitations, RP evaluation, and monitoring requirements. Reviewers found that certain permits reviewed lacked both short-term and long-term WQBELs (i.e., average monthly and maximum daily effluent limitations). The WQA and fact sheet did not always provide a rationale for why certain pollutants (e.g., mercury) lacked both forms of effluent limitations. In addition, certain permits established effluent limitations that were less stringent than previous limitations. In some cases, fact sheets did not discuss anti-backsliding, so it was unclear to reviewers if the permit writer considered anti-backsliding during the permit renewal. The EPA recommends the WQCD fact sheets include standard language regarding anti-backsliding, to ensure that permit writers address permitting considerations consistently.

WQCD fact sheets and WQA documents discussed “temporary modifications” to applicable WQS, but with little detail as to the intent of a temporary modification, or the result of obtaining one. The EPA recommends that WQCD clearly delineate what temporary modifications are, why they are necessary, how they are obtained, how the temporary modification is reflected in the permit limitations, and the duration of such a modification.

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.

WQCD permits generally established appropriate monitoring requirements and clearly identified the monitoring location and reporting frequency. Permits established proper monitoring frequency based on the type of discharge and corresponding limit basis. Further, permits appropriately required influent monitoring for BOD and TSS to determine compliance with minimum percent removal requirements in accordance with 40 CFR 133.

All permits reviewed included WET monitoring and reporting requirements. Permits specified that the permittee shall employ sampling and analytical methods consistent with 40 CFR 136. All permits reviewed require, within the General Monitoring, Sampling, and Reporting Requirement section, that permittees “select a test procedure that is sufficiently sensitive for all monitoring conducted in accordance with the permit.” Permits established appropriate minimum reporting requirements and included the standard condition related to NPDES recordkeeping requirements. The fact sheets contained a thorough and well-documented rationale for monitoring and reporting requirements.

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. The regulations at 40 CFR 122.42 also 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.

Reviewers noted that certain federal standard conditions appeared to be lacking from Colorado’s permits or written such that they presented a slightly less stringent requirement. In addition, certain standard conditions included in Part II of Colorado’s permits contained inconsistent internal references to other permit sections (specified below). The EPA recommends the WQCD review permit standard conditions and ensure they are consistent with the federal standard conditions at 40 CFR 122.41.

Specific examples of where Colorado’s permit conditions appeared to be inconsistent with the federal standard conditions include the following:

- Part II.B.8 (Permit Violations) of Colorado’s permits appeared to address the requirements of 40 CFR 122.41(a) (Duty to Comply) and specifically referenced 40 CFR 122.41(a)(1), however did not specifically address 40 CFR 122.41(a)(2) which specifies civil penalties, negligence and criminal penalties and 40 CFR 122.41(a)(3) which specifies administrative penalties.
- The provision in Part I, Section B.5 (Facility Operations and Maintenance) appeared to contain a typo that changed the meaning of the requirement specified in 40 CFR 122.41(d). Specifically, the provision stated “...any discharge of sludge use or disposal...”, whereas 40 CFR 122.41(d) states “...any discharge or sludge use or disposal...” (emphasis added)
- The provisions in Part I, Section D (General Monitoring, Sampling, and Reporting Requirements) did not contain the requirements contained in 40 CFR 122.41(j)(5) which addresses falsifies, tampers with or knowingly renders inaccurate any monitoring device or method or 40 CFR 122.41 (k)(2) which addresses false statements, representation or certification in any submitted record or document or required to be maintained.
- The signatory requirements contained in Colorado’s permits stated that in the case of corporations, a responsible corporate officer will sign all reports and other information required. The permit described the responsible corporate officer as someone who is responsible for the overall operation of the facility; however, it did not specify personnel who are considered to be a responsible corporate officer, as specified in 40 CFR 122.22(a)(1)(i).
- Federal reporting requirements contained at 40 CFR 122.41(l)(1)(i) appeared to be absent from Colorado’s permits; this requirement stipulates that notification of planned changes is required when the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source. Part II.A.2 of Colorado’s

permits included the other requirements for federal notification of planned changes; however, Part II.A.2.a lacked the clarifying language provided in 40 CFR 122.41(l)(1)(ii).

- The bypass condition in Colorado’s permits modified the bypass by substituting “substantial damage to property” for “severe property damage”.
- The provision in Part II, Section A.8.a (Upsets) defined upsets as incidents causing noncompliance with “permit effluent limitations”, whereas 40 CFR 122.41(n)(1) (Upset Definition) defined it with regard to “technology based permit effluent limitations”. Additionally, Part II, Section A.8.c allowed for affirmative defense of upset for violation of WQBELs. This is less stringent than 40 CFR 122.41(n)(1).

Specific instances of inconsistent internal references include the following:

- The provision in Part II, Section A.3.b (Noncompliance Notification) should refer to Section A.3.a instead of Section A.4.a to be consistent with the requirements of 40 CFR 122.41(l)(6).
- The bypass condition in Colorado’s permits, Part II.A.7.d, should refer to the Noncompliance Notification requirements (Part II.A.3) and Bypass Notification (Part II.A.6) instead of paragraph (a) to be consistent with 40 CFR 122.41(m)(2) (Bypass not exceeding limitations).
- The provision in Part II, Section A.7.e should refer to paragraph (b) instead of paragraph (a) to be consistent with 40 CFR 122.41(m)(4)(ii).
- The provision in Part II, Section A.8.b should refer to paragraph (c) instead of paragraph (b) to be consistent with 40 CFR 122.41(n)(2).
- The provision in Part II, Section A.8.c should refer to Part II, Section A.3 instead of A.4 to be consistent with 40 CFR 122.41(n)(3)(iii).

F. Administrative Process

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

The EPA’s review revealed that WQCD staff implement strong practices regarding responses to public comments received. Staff update fact sheets to reflect WQCD’s responses to public comments which is useful in the administrative process. The EPA recommends the WQCD staff document in the permit record whether a public hearing was requested or whether no hearing was requested or held.

Reviewers noted that Colorado’s administrative records reviewed do not include an affidavit of public notice in a newspaper of general circulation, in accordance with 40 CFR 124.10(c). During the entrance interview, WQCD staff indicated that public notices are done only through the Denver Post, regardless of the facility and discharge location within the state. In addition,

WQCD staff noted they public notice multiple permits in the same notice. The NPDES federal regulations at 40 CFR 124.10(c) require publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity. The EPA informed the WQCD that by publicly noticing many permits at once and only in the Denver Post on a monthly frequency, a number of geographic areas affected by the permit decision and outside the Denver Post metropolitan area may not get appropriate notice.

G. Administrative Record

The administrative record is the foundation that supports the NPDES permit. If the 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 to justify the permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft and final 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, any environmental assessment, environmental impact statement, or finding of no significant impact. The EPA commends the WQCD's efforts in ensuring relevant permit development documents that are part of the administrative record are uploaded to the public-facing Records Manager website. The EPA reviewers readily had access to pertinent permit records through the public-facing Records Manager website.

The EPA noted that the administrative record for the final permit generally does not include the draft permit, as required by 40 CFR 124.18. During the entrance interview, WQCD staff noted that they have not saved the public notice version of NPDES permits. In addition, the documentation regarding the justification and basis for compliance schedules were not included in the administrative records. The EPA recommends the WQCD ensure that the administrative record is complete in both hard and electronic copy and include relevant documents to the permit's administrative record including the draft permit and relevant documentation for compliance schedules

The NPDES regulations at 40 CFR 124.8(b) 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.

Reviewers noted that fact sheets did not consistently provide contact information for permit writers as required by 124.8(b)(7) and directed the WQCD to revise fact sheet templates to include this information. In addition, the EPA recommends the WQCD make a stronger connection between the WQA document and the fact sheet, the reviewers noted that in some instances, it did not appear that the WQA document was part of the administrative record. The

WQA document contains waterbody-specific information as well as RP and WQBEL development calculations and permit-specific effluent limitations. The EPA commended the WQCD on the thorough WQA documentation, but noted that the RP and WQBEL development calculations contained in the WQA information is necessary in the fact sheet, as required by 40 CFR 124.8(b).

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.

Fact sheets for POTWs included sufficient discussion of the basis for TBELs but the fact sheets for non-POTWs lacked detailed discussions pertinent to understanding the basis for final effluent limitations. Fact sheets for non-POTWs did not consistently provide sufficient detail regarding the expected waste streams associated with the facility's industrial processes. Further, fact sheets for non-POTWs did not provide a thorough discussion of applicable federal ELGs and more importantly, facility-specific applicability and categorization. All WQA documents identified pollutants of concern and certain fact sheets went further to state which pollutants were expected to be in the discharge.

The administrative record included WQA documents that provided an in-depth discussion and rationale for the RP evaluation and WQBEL development. These WQA documents afforded reviewers a thorough understanding of the receiving water designated uses, existing water quality, including impairment status and applicable TMDLs. Further, the WQA presents the assumptions used in the RP evaluation, historical compliance with effluent limitations, resulting RP determinations, and WQBELs, as well as anti-backsliding and antidegradation. Reviewers found that the WQAs contained much of the information that is typically included in fact sheets; Colorado fact sheets contained a basic discussion of water quality evaluations, RP assessments, and resulting final effluent limitations. The EPA recommends the WQCD consider including detailed language from the WQA, into the fact sheets. The transfer of information to the fact sheet would greatly strengthen Colorado's fact sheets and provide a more complete picture of the water quality assessment and resulting WQBELs. The EPA reviewers noted that in some fact sheets reviewed, there appeared to be a disconnect with how final effluent imitations were determined to be necessary and subsequently calculated.

The EPA's review revealed that Colorado's fact sheets provided good detail of whether the final effluent limitations were technology- or water quality-based, which suggested that the permit writer had compared TBELs and WQBELs and selected the most stringent. However, the EPA

recommends as a best practice to be explicit about the comparison. In addition, the EPA recommends the WQCD include additional details regarding granting temporary modifications in permits; at least one permit included the temporary modification but lacked definition of the term and lacked description of the process and timeline for the temporary modification.

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, the EPA has worked at reducing the levels and impacts of nutrient pollution. A key part in this effort has been the support the 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.

Background

In 2012, the Colorado through its Water Quality Control Commission adopted a section 31.17 in the Basic Standards and Methodologies for Surface Water, Regulation #31, to address nutrients. Section 31.17 establishes interim numerical values for phosphorus, nitrogen and chlorophyll *a* for the protection of classified uses of Colorado surface waters. The adoption of the interim phosphorus, nitrogen and chlorophyll *a* values in section 31.17 was the result of a decade-long effort involving numerous stakeholder work group meetings. Colorado, however, did not adopt these nutrient values into the specific watersheds as water quality standards.

In lieu of establishing water quality standards in the specific watershed basins, Colorado adopted a technology-based Nutrients Management Control Regulation #85. Control regulation #85 establishes numerical effluent limitations for domestic wastewater treatment plants and industrial wastewater dischargers that are likely to have significant levels of nutrients in their discharges. It also describes requirements for other point source dischargers and voluntary steps for nonpoint sources to address nutrients. Regulation #85 establishes monitoring requirements for point source dischargers and a program aimed at monitoring of surface waters for nutrients and related parameters to characterize nutrient sources and current nutrient conditions in the receiving waters. Colorado determined that the interim numeric values in 31.17 could be used for the adoption of water quality standards for any surface waters in Colorado beginning May 31, 2022.

Colorado determined that this two-part strategy (Regulations 31.17 and Control Regulation 85) for addressing nutrients was the best policy option to make effective progress in addressing nutrients management. Colorado believed that to rely on the usual standards-based approach alone (table value criteria, followed by segment-specific water quality standards, along with possible temporary modifications and discharger-specific variances, then assessment and listing decisions, total maximum daily load development, and then incorporation into discharge permits with compliance schedules) would result in substantially less progress in controlling nutrients in the next decade than will the technology-based approach set forth in new Regulation #85.

Regulation #85 set mandatory requirements for selected existing and new POTWs and non-POTWs (e.g., industrial facilities). Effluent limits were set for total phosphorus (TP) and total inorganic nitrogen (TIN). Regulation #85 set a limit for TIN rather than total nitrogen (TN) in recognition of the variable fraction of TN that includes “recalcitrant” dissolved organic nitrogen which is difficult or impossible to biologically treat. Exclusions are provided for POTWs below 1 MGD and POTWs in disadvantaged communities and a delayed implementation until May 31, 2022 for the effluent limits was established for POTWs currently permitted, POTWs with a design capacity less than 2 MGD or POTWs in certain watersheds. For other POTWs, the following control nutrient limits apply:

Parameter	Rolling Annual Median	95 th Percentile
Total Phosphorus	1.0 mg/L	2.5 mg/L
Total Inorganic Nitrogen as N	15 mg/L	20 mg/L

For New Treatment Facilities:

Parameter	Rolling Annual Median	95 th Percentile
Total Phosphorus	0.7 mg/L	1.75 mg/L
Total Inorganic Nitrogen as N	7 mg/L	14 mg/L

In 2016, the EPA approved the interim numeric values for chlorophyll *a* in 31.17, approved with recommendations the numeric values for phosphorus and nitrogen for lakes and reservoirs, and took no action with respect to the interim numeric values for phosphorus and nitrogen for rivers and streams or the delayed effective dates.

Colorado modified its nutrients reduction strategy in response to the EPA’s 2016 action. First, Colorado determined that the 2022 timeframe is appropriate for adoption of the chlorophyll *a* standard. Second, Colorado determined that it should propose phosphorus and nitrogen standards for lakes and reservoirs that are direct use water supply reservoirs and where there are public swim beaches. With the exception of direct use water supply reservoirs and lakes

and reservoirs with public swim beaches, the commission has decided to further delay the effective dates of the phosphorus and nitrogen numeric values below dischargers to 2027. Third, Colorado determined more time is needed to revisit the numeric values for phosphorus and nitrogen for rivers and streams and delayed the implementation of nutrient standards based on 31.17 from May 31, 2022 to December 31, 2027.

Colorado developed a voluntary incentives program, Policy 17-1, to encourage early reductions of nutrients by domestic and non-domestic wastewater treatment works, despite delaying the adoption of numeric nutrient values to 2027. A facility that achieves early reduction of nutrients will be offered an incentive in the form of an extended CDPS permit compliance schedule, which increases the number of years that the wastewater facility has to meet the water quality based effluent limits after 2027.

Permittees who wish to participate in the incentive program are required to submit a nutrient reduction plan and annual nutrient monitoring reports to the division by December 31, 2019. In order to qualify for the incentive program, the permittee must reduce nitrogen and/or phosphorus discharge concentrations to levels below those in Regulation #85 by December 31, 2026. If a permittee is able to make early reductions in its discharge of nutrients, the permittee will qualify for an incentive which gives it additional time to comply with numeric nutrient values in Regulation #31, and Regulations #32 through 38 that are anticipated to be adopted in 2027. The amount of additional time granted will depend on the amount of nutrient concentration reduction that the wastewater facility achieves between 2019 and 2026.

Program Strengths

Colorado is making progress to reduce nutrient loadings to the surface waters of the State by implementing a two-part strategy with nutrient criteria in Regulation #31 and a Control Regulation #85. The two-part strategy requires monitoring to assess the quality of the receiving waters, effluent limitations for tiers of POTWs and non-POTWs, and a voluntary incentives program for treatment works to reduce nutrient loadings using tools such as BNR optimization, water quality trades, a source reduction plans, watershed nutrient reductions, or capital improvements.

Critical Findings

There are no critical findings or recommended actions to improve the program's implementation of this component.

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 the 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, the 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 the EPA a two-year stay of the mandate. On March 28, 2011, the U.S. Court of Appeals for the Sixth Circuit granted the 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. The EPA proposed a draft pesticide general permit on June 4, 2010 to cover certain discharges resulting from pesticide applications. The EPA Regional offices and state NPDES authorities may issue additional general permits or individual permits if needed.

Discharges from Applications of Pesticides General Permit (COG860000)

The CDPHE developed a two-year CDPS general permit, COG-860000, in 2011 that modeled the EPA’s general permit. The duration of the term was designed to allow the CDPHE to obtain the resources necessary to implement the state level NPDES program for this category of discharges including permitting, data management and compliance assistance. The two-year term of the 2001 general permit was modified by one year in 2013 and the permit was renewed on September 8, 2014 with an effective date of January 1, 2015 and an expiration date of December 31, 2019. During the 2014 renewal of the state PGP, the CDPHE held stakeholder meetings to provide the permitted universe the opportunity to comment on the renewal process and discuss issues with the 2011 permit.

The CDPHE PGP is applicable to defined Operators who discharge to surface Waters of the State of Colorado from pesticide applications, with the exception of treatment areas controlled by a Federal agency or tribes. The CDPHE pesticide general permit, regulates point source discharges of biological pesticides and chemical pesticides that leave a residue. The permit covers the following pesticide use patterns; mosquito and other flying insect pest control; weed and algae pest control; animal pest control; and forest canopy pest control. The general permit has limitations on coverage for (1) discharge of a pesticide application to receiving waters impaired by the active ingredient or a degradation byproducts of the active ingredient in the pesticide

and (2) discharge of a pesticide application to outstanding waters, unless the pesticide application is intended to restore or maintain water quality or protect public health or the environment that either do not degrade water quality or only degrade water quality for a short-term or temporary basis.

Operators that performed the eligible activities listed in the permit are automatically covered by the CDPHE PGP without submission of an application or Notice of Intent (NOI). The operators covered under the general permit are required to submit annual reports to address their activities, based on the type of operator and the activities resulting in a discharge to Waters of the State. The Operators who have to submit an annual report is listed in Table 7-2 of the CDPHE PGP and presented below. Annual reports for a calendar year are due February 1st of the following year or 30 days after an initial discharge from a declared pest emergency control activity. According to the CDPHE, about 70 annual reports were received in 2017 at the time of the audit.

PGP Part/Pesticide Use	Which Decision-makers must submit an Annual Report	For Which Pesticide Application Activities?
All four use patterns identified in Part 1.1.1	Any Decision-maker with an eligible discharge to an Outstanding Water consistent with Part 1.1.2.2	Activities resulting in a discharge to an Outstanding Water
1.1.1(a) – Mosquito and Other Flying Insect Pest Control	Any Agency for which pest management for land resource stewardship is an integral part of the organization’s operations.	All mosquito and flying insect pest control activities resulting in a discharge to surface Waters of the State
	Mosquito control districts or similar pest control districts	All mosquito and flying insect pest control activities resulting in a discharge to surface Waters of the State
	Local governments or other entities that exceed the annual treatment area threshold identified here	Adulticide treatment if more than 6,400 acres during a calendar year
1.1.1(b) Weed and Algae Pest Control	Any Agency for which pest management for land resource stewardship is an integral part of the organization’s operations.	All weed and algae pest control activities resulting in a discharge to surface Waters of the State
	Irrigation and weed control districts or similar pest control districts (see Definition of	All weed and algae pest control activities resulting in

	Irrigation Control District in Appendix A)	a discharge to surface Waters of the State
	Local governments or other entities that exceed the annual treatment area threshold identified here	Treatment during a calendar year if more than either: 20 linear miles or 80 acres of water (i.e., surface area)
1.1.1(c) – Animal Pest Control	Any Agency for which pest management for land resource stewardship is an integral part of the organization’s operations.	All animal pest control activities resulting in a discharge to surface Waters of the State
	Local governments or other entities that exceed the annual treatment area threshold identified here	Treatment during a calendar year if more than either: 20 linear miles or 80 acres of water (i.e., surface area)
1.1.1(d) – Forest Canopy Pest Control	Any Agency for which pest management for land resource stewardship is an integral part of the organization’s operations.	All forest canopy pest control activities resulting in a discharge to surface Waters of the State
	Local governments or other entities that exceed the annual treatment area threshold identified here	Treatment if more than 6,400 acres during a calendar year

An operator who is required to submit an annual report and is a large entity must prepare a Pesticide Discharge Management Plan (PDMP) and have the plan completed prior to the discharge covered under the PGP. The contents of the PDMP must include the following elements:

1. Pesticide Discharge Management Team
 - a. Person(s) responsible for managing pests in relation to the pest management area
 - b. Person(s) responsible for developing and revising the plan
 - c. Person(s) responsible for developing, revising, and implementing corrective actions and other effluent limitation requirements.
2. Problem Identification
3. Pest Management Options Evaluation
4. Response Procedures

- a. Spill Response Procedures
 - b. Adverse Incident Response Procedures
5. Documentation to support eligibility requirements under other Federal Laws
 6. Signature Requirements

Program Strengths

Colorado's General Permit# COG860000 for Discharges from Applications from Pesticides was issued on September 8, 2014 with an effective date of January 1, 2015 and an expiration date of December 31, 2019. This permit is the 1st renewal of Colorado's 2011 PGP developed concurrently with the EPA PGP. The Colorado PGP adequately provides coverage of pesticide applications to and over Waters of the State, given the resource constraints at the CDPHE.

Critical Findings

There are no critical findings or recommended actions to improve the program's implementation of this component.

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 Colorado 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).

The Colorado Department of Public Health and Environment issues NPDES permits directly to POTWs in Colorado. Region 8 directly implements the pretreatment program for Colorado POTWs. For PQRs related to pretreatment, the information in the table below is typically pulled from ICIS and confirmed with the Region. Data in the table are summarized for 2018. According to ICIS, there are 27 approved pretreatment programs in Colorado. During the five years from 2013 through 2017, Region 8 conducted two visits per POTW at seven of the POTWs (either a PCI and a PCA). Region 8 conducted one visit (a PCI or PCA) at the remaining POTWs during the five-year timeframe.

State of Colorado Pretreatment Program at a Glance 2018		
	ICIS	Reported by Region
Number of Approved POTW Pretreatment Programs	28	27 ¹
Number of SIUs in POTWs with Approved Pretreatment Programs	219	TBD
Number of SIUs in POTWs without Approved Pretreatment Programs	7	7
Percent of SIUs with expired Permits (Administratively Continued)	TBD	TBD
Number of CIUs in POTWs with Approved Pretreatment Programs	177	TBD
Number of CIUs in POTWs without Approved Pretreatment Programs	7	7
Number of Pretreatment Compliance Inspections in 2017	3	2
Number of Pretreatment Compliance Audits in 2017	2	2
Percentage of POTWs for which CMS Goals were met	0%	
Date State Program updated for Streamlining Regulations	4/1/2007	

¹ One local program (CO0039641) was discontinued in the past 5 years.

As part of the PQR, three permits were reviewed for POTWs that are known to have approved pretreatment programs and one for a POTW that does not have a pretreatment program (“nonapproved”). From available data, the design flows for the four Colorado POTW permits reviewed range from 3 million gallons per day (MGD) to 28.8 MGD.

Permittee	Permit No.	Pretreatment Program Required?	Design Flow Average	Permit Expires

City of Loveland, Wastewater Treatment Facility	CO0026701	Yes	10 MGD	8/31/2020
City of Brighton	CO0021547	No	3 MGD	2/28/2021
Metro Wastewater Reclamation District-Northern Treatment Plant	CO0048959	Yes	28.8 MGD	4/30/2021
City of Fort Collins-Drake Water Reclamation Facility WWTF	CO0047627	Yes	23 MGD	4/30/2021

Region 8 Permit Issuance Practices

The Region 8 Pretreatment Coordinator is staffed within the NPDES permit group and works with all NPDES authorized states within Region 8 to ensure the appropriate pretreatment program implementation language for POTWs with or without pretreatment programs is included in the State-issued NPDES permits. The Region 8 Pretreatment Coordinator has developed standardized pretreatment conditions and provides it to the NPDES authorized states for use in approved POTW program permits. The Region 8 Pretreatment Coordinator reviews draft permits at public notice to ensure the language is appropriate. The Region 8 Pretreatment Coordinator also provides oversight to Colorado’s NPDES permit program and reviews municipal NPDES permits. The NPDES permit applications are not reviewed by the Pretreatment Coordinator. The Pretreatment Coordinator evaluates the justification in the fact sheets to determine if the State appropriately evaluated industrial contribution information, required to be in the permit application for reasonable potential or justification for whether a pretreatment program is required or not. The EPA Region 8 Pretreatment Coordinator and the NPDES Enforcement staff conduct quarterly meetings with the Colorado permits and enforcement staff to discuss NPDES and pretreatment issues.

As part of direct implementation activities for pretreatment, the EPA Region 8 permits and enforcement team reviews annual reports and local limits evaluations, as well as assesses compliance and takes enforcement actions as needed. The EPA Region 8 confirms the appropriate standards applied to CIUs discharging to POTWs without approved programs through site inspection. EPA Region 8 notifies CIUs discharging to unapproved POTWs of Pretreatment requirements via letter and conducts compliance evaluation and data entry for Colorado.

Program Strengths

Based on this PQR, all POTW permits reviewed clearly incorporate requirements to implement the general and specific prohibitions established at 40 CFR Section 403.5(a)(1) and (b). For those permits reviewed for POTWs with pretreatment programs, the permits clearly indicate the date the program was approved. The permits state that permittees must operate a POTW

pretreatment program in accordance with the federal Clean Water Act, the federal General Pretreatment Regulations at 40 CFR Part 403, and the approved pretreatment program and any approved modifications.

Region 8 tracks its Industrial User inspections in ICIS.

Critical Findings

Region 8 is not meeting CMS goals in Colorado¹. Region 8 did not meet the CMS goal of at least one audit and two inspections within 5 years (2013-2017) at any of its 27 POTWs with approved pretreatment programs (zero percent).

Approved Pretreatment Programs

The fact sheets for the permits for POTWs with approved pretreatment programs lack mention that the POTW has an approved pretreatment program. Also, these fact sheets lack discussion of why a pretreatment program is required, types of industrial users contributing discharge to the POTW, and do not appear to address industrial user contributions during the reasonable potential analysis.

4. Stormwater

The NPDES program requires stormwater discharges from certain MS4s, industrial activities, and construction sites to be permitted. Generally, the EPA and NPDES-authorized states issue individual permits for Phase I medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities. CDPHE uses general permits (GP) for industrial, construction and Phase II MS4 stormwater facilities.

Background

1. CDPHE's stormwater general permits at the time of the Permit Quality Review (PQR) were as follows: Stormwater Discharges Associated with Construction Activities (COR030000),² Construction Dewatering (COG070000), Coal Mining Process Water & Storm Water Combined (COG850000), Metal Mining Industry Storm Water (COR040000), Non-Extractive Industries Storm Water (COR900000), Sand and Gravel Mining Wastewater and Storm Water Combined (COG500000), Statewide MS4 General Permit (COR090000), Non-Standard MS4 General Permit (COR070000), and Cherry Creek Reservoir Basin MS4 General Permit (COR080000).

The Statewide MS4 GP (COR090000) and Cherry Creek Reservoir Basin MS4 GP (COR080000) are the newest iteration of the Division's MS4 regulatory tools and were developed over the past few years. These permits have undergone several minor amendments and modifications

¹ CMS goals are one PCA and two PCIs conducted per 5-year NPDES permit term. This PQR does not look at each POTW's NPDES permit term, but it looks at compliance for the period of 2011 through 2015.

² The EPA reviewed the draft Construction General Permit (CO400000) because it was expected that this draft permit would be effective within the next 6 months.

since issuance in 2016. The State’s Stormwater Discharges Associated with Construction Activities GP (COR030000) was in draft format when reviewed as part of the PQR and not finalized and issued until after the PQR site visit. CDPHE’s Construction GP (CGP) covers all types of construction activities within CDPHE’s jurisdiction. The CGP is the permit with the largest number of covered sites, though the individual sites covered are ever changing as construction activities begin, end and site stabilization occurs. The State’s Non-Extractive Industries Storm Water GP (COR900000) is the primary regulatory mechanism the Division applies to non-extractive industrial sites. Extractive industrial sites, such as sand and gravel and other mining facilities, are covered by other GPs or individual permits applicable to their operations. The Non-Extractive Industries Storm Water GP was issued March 7, 2012 and was effective October 1, 2012 through June 30, 2017. The permit has been administratively continued.

Stormwater Discharges from Municipal Separate Storm Sewer Systems (COR090000)

For Colorado, EPA Region 8 reviewed the Statewide MS4 GP COR090000, which was issued in 2016 and has undergone three modifications since issuance. This permit was issued on April 15, 2016 and became effective July 1, 2016, and will expire June 30, 2021.

The Statewide MS4 GP COR090000 (MS4 GP) follows the standard format of general permits, containing all of the required eligibility, authorization and application information in Part 1 of the permit. Part 1 of the MS4 GP also contains the coverage area of the permit, which is traditional MS4s (e.g. cities, counties). Non-traditional MS4s (e.g. military bases, universities) are permitted under a separate permit Non-Standard MS4 GP (COR070000). As with all of CDPHE’s general permits, the permit itself is posted on the Division’s website, but permit applications/Notices of Intent (NOIs) are not available online through the CDPHE Environmental Records database which is publicly available online database. Other reporting information including permit certification letters, annual reports, and general correspondence is available through the database.

The primary requirements of the MS4 GP are in Part I of the permit including required control measures (typically best management practices), the six minimum control measures (MCMs) and the Program Description Document (PDD or more commonly referred to as a Stormwater Management Program) of the permit. The six MCMs are broken into the following components: a) Permittee’s requirements for that specific MCM, b) recordkeeping requirements for that MCM and c) PDD requirements for that MCM. Each of the six MCMs of the permit are outlined as described.

Compliance schedules are allowed for renewal and new permittees in Part 1 of the permit. The compliance schedules, which are in table format, provide the Permit Condition, Action, Deliverable and Deadline for several of the conditions in the 6 MCMs as well as the PDD.

The remainder of the MS4 GP meets the CFR requirements including the PDD (or stormwater management plan), monitoring, record-keeping and reporting.

EPA Region 8 notes that the MS4 GP was issued before the promulgation of the MS4 General Permit Remand Rule, which modified certain aspects of the Phase II stormwater regulations

relating to small MS4 permits. This report therefore does not include a review of the consistency of this permit with the requirements of the MS4 General Permit Remand Rule.

Program Strengths

The Division has developed a well written and more enforceable permit.

Critical Findings

1. 40 CFR 122.34(b)(4)(ii)(E) requires the Permittee's Construction program (which is one of the MCMs) include procedures for receipt and consideration of information submitted by the public. The requirement was not contained in the permit.
2. Two standard conditions were not identified within the permit:
3. 40 CFR 122.41(j): Monitoring and records. (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity is missing from the permit. The permit does contain the requirements in 40 CFR 122.41(j)(2-5).
4. 40 CFR 122.41(l)(4): The permit does not require that monitoring results be reported as specified elsewhere in the permit (monitoring requirements are likely to be specified in the permittee's certification of coverage). Additionally, the permit does not require monitoring to be reported on DMRs, nor report data for pollutants that are monitored more frequently than required using approved test methods.

Recommendations

1. The permit does not specify when a discharge is authorized by the Division. The permit states:
"Following review of the application, the Division may request additional information or deny the authorization to discharge under this general permit. The applicant shall be notified of the Division's determination."
It is unclear when the authorization to discharge is granted (automatically after submission or upon issuance of the certification). Clarification should be added by specifying when authorization is granted.
2. The permit does not require the identification of receiving water bodies or water quality status (impaired, TMDLs). Recommend adding this as a permit requirement so the permittee is aware of any impairments or TMDLs that may apply. This recommendation is in addition any requirement to identify the receiving water(s) in the permit application/NOI.
3. Part I.E.2.a.iv of the permit requires the permittee implement procedures to respond to reports/identification of illicit discharges. The permit states, the permittee is not expected to actively seek out unreported illicit discharges, but is required to identify and respond to illicit discharges observed during day-to-day normal work activities. The permittee must document and implement procedures, including the tools needed, to trace the source of an illicit discharge when identified within the MS4. Recommend making this clearer so the permittee understands that any (i.e., during day-to-day and

non day-to-day normal work activities) reported or known illicit discharges are expected to be responded to and corrected.

4. It is unclear if the permittee is not required to investigate illicit discharges observed outside of day-to-day normal work activities. Clarification could be added by specifying that all reported/known illicit discharges should be investigated and that the investigation is only required to take place during normal work hours.
5. For the next MS4 GP, the State will need to take into account the modifications made to the Phase II regulations by the MS4 General Permit Remand Rule, and ensure that the permit's terms and conditions are consistent with these new requirements.

Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (COR900000)

1. EPA Region 8 reviewed the Non-Extractive Industries Stormwater Permit (commonly referred to as a Multi-Sector General Permit or MSGP), which has been in effect since October 1, 2012 and expired on June 30, 2017. The permit was administratively continued.
2. This permit replaced three industrial stormwater discharge permits (COR010000, COR020000 and COR060000) and largely emulates the structure and content of the 2008 EPA MSGP. The Division determined that combining the Light, Heavy and Recycling stormwater permits into one permit promoted improved consistency of permit requirements, a flexible and efficient process for application review and issuing permit certifications, and provided a more user-friendly format for the Permittee.
3. The Non-Extractive Stormwater GP includes all the industrial sectors listed in the EPA's 2015 MSGP except Sectors G, H, or J and specifically excludes from coverage extractive industrial stormwater which is covered under separate permits including Metal Mining Industry Storm Water (COR040000), Sand & Gravel Mining Wastewater & Storm Water combined (COG500000) and Coal Mining Process Wastewater and Stormwater Combined Permit (COG850000). Those permits were not reviewed as part of the PQR. Sectors G, H, and J are the extractive or mining sectors that are covered by separate GPs listed above.
4. The Non-Extractive Stormwater GP follows the standard format of general permits, containing all of the required eligibility, authorization and application information in Part 1 of the permit. Part 1 of the permit also contains the transfer and termination requirements for permittees. As with all of CDPHE's stormwater GPs, the permit itself is posted on the Division's website. In addition, permit records including applications, annual reports and general correspondence for this permit were available through the Colorado Environmental Records database.

Program Strengths

The permit met the CFR requirements addressing monitoring, record-keeping and reporting as well as the standard conditions language.

Critical Findings

There are no critical findings or recommended actions to improve the program's implementation of this component.

General Permit for Stormwater Discharges from Construction Activity (COR400000)

The EPA reviewed the draft CGP, which was put out for public comment on October 24, 2016. The comment period expired on December 16, 2016. This is the only general permit the Division has for the discharge of construction stormwater. The Division is in the process of developing the next CGP, to be issued and effective after responding to public comments on the draft CGP. The permit reviewed was a draft version, and it is understood that additional revisions will be made prior to the permit being finalized. However, multiple incorrect internal references were identified in the permit, and Part II of the permit is mislabeled as Part I. All internal references should be checked prior to finalization.

Program Strengths

CDPHE has worked diligently to renew the CGP including holding stakeholder meetings during the renewal process.

Critical Findings

1. Part I.B of the permit requires the implementation of control measures to minimize the discharge of pollutants from all potential pollutant sources at the site, and that control measures be selected, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices. The control measures include both structural and non-structural controls, including requiring the use of at least one control measure for stormwater flow from disturbed areas for which stabilization is not implemented, and that this control measure be adequately sized for the appropriate flow rate, duration, and flow conditions.

While the implementation of the requirements in Part I.B of the permit would be anticipated to include stormwater control for volume and velocity, there is no specified requirement to control stormwater volume and velocity within the site to minimize soil erosion. The permit should specify the stormwater volume and velocity be controlled to minimize soil erosion, or the fact sheet could be revised to clarify how the current permit requirements are consistent with 40 CFR 450.21(a)(1).

2. Part I.B of the permit requires the implementation of control measures to minimize the discharge of pollutants from all potential pollutant sources at the site, and that control measures be selected, designed, installed and maintained in accordance with good engineering, hydrologic and pollution control practices. The control measures include both structural and non-structural controls, including requiring the use of at least one control measure for stormwater flow from disturbed areas for which stabilization is not implemented, and that this control measure be adequately sized for the appropriate flow rate, duration, and flow conditions.

While the implementation of the requirements in Part I.B of the permit would be anticipated to include stormwater controls for peak flow rates and total stormwater volume, there is no specified requirement to control peak flow rates and total stormwater volume to minimize soil erosion at outlets and to minimize downstream channel and streambank erosion. The permit should specify peak flow rates and total stormwater volume be controlled to minimize erosion at outlets and downstream channel and streambank erosion, or the fact sheet could be revised to clarify how the current permit requirements are consistent with 40 CFR 450.21(a)(2).

3. Part I.B.1.a.iv of the permit requires, “Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity permanently ceased, or temporarily ceased for more than 14 calendar days.” Further, the permit allows for an exception of the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed, or physical characteristics of the terrain and climate prevent stabilization. In these cases, the SWMP must provide an alternate stabilization schedule.

The permit requirements differ from the federal Effluent Limitation Guideline (40 CFR 450.21(b)) in that it does not require immediate initiation of stabilization upon permanent completion of ground disturbing activity. The permit simply states that stabilization must be implemented, however does not clarify that implementation is to begin immediately upon completion. The current permit text could be interpreted to allow unspecified time for implementation, and thus the permit should be revised to specify immediate initiation of stabilization upon permanent completion of ground disturbing activities.

Further, the permit requirement does not require stabilization for temporarily ceased activity until after 14 days. The regulations require temporary stabilization if activity will not resume for a period exceeding 14 days. Thus, federal requirements would require the permittee to implement temporary stabilization on the first day it is known to the permittee that ground disturbing activity will cease for at least 14 days. However, the permit will only require implementation after 14 days have passed with no ground disturbing activity. It is recommended the permit be revised to be consistent with the federal requirements.

4. Part I.B.1.a.iv. of the permit establishes stabilization requirements. The permit specifies when final stabilization (not included for temporary stabilization) must be implemented and when it is considered “reached”. However, the permit does not appear to specify a period of time when stabilization must be completed as per 40 CFR 450.21(b). Part I.B.2.a of the Fact Sheet (page 14) appears to indicate a time schedule of 14 days has been established to achieve temporary stabilization, however the permit text appears to only require initiation of temporary stabilization after 14 days of ceasing ground disturbing areas. There appears to be a disconnect between the federal requirements, and the implementation of them within the permit.
5. Three standard conditions were not identified within the permit:

- 40 CFR 122.41(e): Although the permit requires operational controls to be adequately operated and maintained, this standard condition was not observed in the permit. The standard provision also contains requirements for laboratory controls and the operation of back-up or auxiliary facilities that are not addressed elsewhere in the permit.
- 40 CFR 122.41(j): Analytical monitoring requirements are not established in the permit. However, it's worth noting that the monitoring and reporting standard conditions are not specified in the permit. Part I.H does require all records of all data to be retained for 3 years after expiration or inactivation of permit coverage, however fails to require representative monitoring, or specify the monitoring information that shall be included in the records, or require monitoring according to 40 CFR 136, or specify punishment for any person that falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit. It should be noted that although analytical monitoring requirements are not specified in the permit, Part I.B.2.a.iii allows for the permitting authority to establish discharge monitoring requirements if a TMDL is approved for a waterbody into which a permittee discharges.
- 40 CFR 122.41(l)(4): The permit does not require that monitoring results be reported as specified elsewhere in the permit (monitoring requirements are likely to be specified in the permittee's certification of coverage). Additionally, the permit does not require monitoring to be reported on DMRs, nor report data for pollutants that are monitored more frequently than required using approved test methods.

Recommendations

1. Part II.B.12 requires that dischargers submit a permit renewal application at least 180 days before the permit expires if they desire to continue to discharge. Part I.A.j of the permit requires the permittee to reapply at least 90 days in advance of the permit expiration date, with some exceptions. Parts II.B.12 and I.A.1.j are inconsistent in the reapplication requirements.
2. In general, the permit requires the selection, installation and maintenance of control measures based on good engineering, hydrologic and pollution control practices. Specific guidance or reference documents are not included in the permit; however, example BMPs are provided. On the current Construction GP website, the State has a guidance manual titled, *Stormwater Management Plan Preparation Guidance, Revised 4/2011*. The Division may wish to include additional text requiring the consideration of this (or updated) guidance when developing the SWMP and selecting, installing, and maintaining control measures.
3. Part I.B.1.a. of the permit requires the selection, installation, and maintenance of control measures based on good engineering, hydrologic and pollution control practices, and that the control measures be designed to prevent pollution or degradation of State

waters. Part I.B.i.a.iv contains specific considerations for stabilization. Further sections of Part I.B.1 and I.C appear to adequately explain applicable BMP design, installation, and maintenance. Part I.B.2.a of the Fact Sheet (page 14) indicates that additional guidance is available at the State’s website, titled. “Final Stabilization requirements for stormwater construction permit termination – Alternatives to the 70% plant density re-vegetation requirement”. The Division may wish to include additional permit text requiring the consideration of this (or updated) guidance when selecting BMPs for stabilization.

4. Part. I.B.1.a.iv.(b) allows the State to approve alternative final stabilization criteria for specific operations. Examples of the final stabilization methods, including vegetative alternatives, are provided in Part I.B.1.a.iv.(c) of the permit. Part I.B.2.a of the Fact Sheet (page 14) indicates that additional guidance is available at the State’s website, titled. “Final Stabilization requirements for stormwater construction permit termination – Alternatives to the 70% plant density re-vegetation requirement”. The federal requirements at 40 CFR 450.21(b) do not appear to be limited to “final stabilization”, however the permit requirements for vegetative alternatives do appear to be limited to final stabilization, and not applicable to temporary stabilization. This is more stringent than federal requirements. It is recommended that the Division consider allowing the consideration of vegetative alternatives for temporary stabilization (in addition to final stabilization).
5. Part I.A.1.b.iii. and Part I.B.1.a.iii.(b) of the permit do allow for the “discharge” of concrete washwater to the ground, as long as control measures ensure washing activities do not contribute pollutants to stormwater runoff, groundwater, or state surface waters. The permit further requires that the on-site disposal of concrete washout waste is not authorized by this permit. Because the permit does not authorize the discharge of concrete washwater to commingle with stormwater, or be discharged to the groundwater and surface water, the discharge (for purposes of NPDES) appears to be effectively prohibited. Additional clarification could be added by specifying concrete washwater in Part I.A.2.a (Limitations on Coverage – Discharges of Non-Stormwater).
6. Part I.B.1 of the Fact Sheet (page 13) states, “The general permit did not incorporate the EPA effluent limitation guideline requirement to require vehicle washout water to flow through a sediment basin or equivalent measure because this type of discharge is not authorized under the general permit. The division determined that because there is no allowable discharge, there is no need for an effluent limitation.”

It is recommended that vehicle wash water be added to Part I.A.2.a (Limitations on Coverage – Discharges of Non-Stormwater) for clarification. It should be noted that this permit does allow for the “discharge” of concrete washwater to the ground, as long as control measures ensure washing activities do not contribute pollutants to stormwater runoff, groundwater, or state surface waters. The permit further requires that the on-site disposal of concrete washout waste is not authorized by this permit.

7. Part I.A.2.a (Limitations on Coverage – Discharges of Non-Stormwater) specifies that discharges of non-stormwater, except the authorized non-stormwater discharges, are not eligible for coverage under this permit. Discharges of washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials are not allowable non-stormwater discharges, and are not eligible for coverage under this permit. Clarification could be added by specifying that these discharges are prohibited.
8. Part I.A.2.a (Limitations on Coverage – Discharges of Non-Stormwater) specifies that discharges of non-stormwater, except the authorized non-stormwater discharges, are not eligible for coverage under this permit. Discharges of fuel, oils, or other pollutants used in vehicle and equipment operation are not allowable non-stormwater discharges, and are not eligible for coverage under this permit. Clarification could be added by specifying that these discharges are prohibited.
9. Part I.A.2.a (Limitations on Coverage – Discharges of Non-Stormwater) specifies that discharges of non-stormwater, except the authorized non-stormwater discharges, are not eligible for coverage under this permit. Discharges of soaps or solvents used in vehicle and equipment washing are not allowable non-stormwater discharges, and are not eligible for coverage under this permit. Clarification could be added by specifying that these discharges are prohibited.
10. Part I.c.2.a.i of the permit requires a qualified stormwater manager be responsible for the implementation of the SWMP. Part I.D.1 requires the permittee to ensure the inspector is a qualified stormwater manager. Part I.E of the permit defines a qualified stormwater manager as, “An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit.” It is recommended that minimum training requirements, such as certifications, or minimum training frequencies be included in the permit for key staff the implement the SWMP. The current reference to “knowledgeable” is open to interpretation, and may result in key personnel that are not as familiar with erosion and sediment control and pollution prevention necessary to meet the requirements of the permit.
11. It is recommended that Part I.C.4 of the permit be revised to require the SWMP to be available onsite to staff with duties and responsibilities that may impact stormwater or result in unauthorized discharges.

IV. REGIONAL TOPIC AREA FINDINGS

A. Compliance Schedules

Background

Section 301(b)(1)(C) of the Clean Water Act and the NPDES regulations at 40 C.F.R. § 122.47 allow permit writers to establish schedules of compliance to give permittees additional time to achieve compliance with the CWA and applicable regulations. Schedules developed under this

provision must require compliance by the permittee *as soon as possible*, but may not extend the date for final compliance beyond compliance dates established by the CWA.

In the decision *In the Matter of Star-Kist Caribe, Inc.*, documented in the memorandum *Order Denying Modification Request With Respect to the Administrator's 1990 Decision in Star-Kist Caribe, Inc. (NPDES Appeal No. 88-5)*¹⁰, the EPA Administrator interpreted section 301(b)(1)(C) of the CWA to mean that 1) after July 1, 1977, permits may not contain compliance schedules for effluent limitations based on water quality standards adopted before July 1, 1977, and 2) compliance schedules are allowed for effluent limitations based on standards adopted after that date *only* if the state has clearly indicated in its water quality standards or implementing regulations that it intends to allow them.

In May 2007, the Director of EPA's Office of Wastewater Management issued a memorandum to EPA Region 9 that clarified the requirements of 40 C.F.R. § 122.47 as they relate to WQBELs. Considerations outlined in the 2007 memo include the following:

- Demonstrate that the permittee cannot immediately comply with the new effluent limitation on the effective date of the permit.
- Include an enforceable final effluent limitation and a date for achievement in the permit.
- Justify and document the appropriateness of the compliance schedule; factors relevant to a determination that a compliance schedule is appropriate include how much time the discharger had to meet the WQBEL under prior permit(s), whether there is any need for modifications to treatment facilities, operations, or other measures and, if so, how long it would take to implement such modifications.
- Justify and demonstrate that compliance with the final WQBEL is required as soon as possible; factors relevant to a determination that a compliance is required as soon as possible include the steps needed to modify or install treatment facilities, operations, or other measures and the time those steps would take.
- Include an enforceable sequence of events leading to compliance with interim milestones for schedules longer than one year.
- Recognize that a schedule solely to provide time to develop a total maximum daily load (TMDL) or to conduct a use attainability analysis (UAA) is not appropriate.

When issuing a compliance schedule, the permitting authority must make a reasonable finding, adequately supported by the administrative record, that the compliance schedule is appropriate and that compliance with the final effluent limit is achieved as soon as possible.

The CDPHE's water quality standards authorize NPDES permits to include compliance schedules for effluent limitations based on water quality standards adopted after July 1, 1977. The EPA's review revealed that permits established compliance schedules for water quality based effluent limits but fact sheets provided little detail as to the basis for the compliance schedule and did

not clearly identify necessary interim compliance dates and milestones. The EPA recommends the WQCD include clear tables that outline interim compliance dates and milestones for approved compliance schedules. Further, fact sheets would be strengthened by a thorough discussion of the justification as to why a compliance schedule is necessary and leads to compliance with a final WQBEL as soon as possible.

V. ACTION ITEMS

This section provides a summary of the main findings of the review and provides proposed action items to improve Colorado’s NPDES permit programs administered by the CDPHE. This list of proposed action items will serve as the basis for ongoing discussions between EPA Region 8 and the State of Colorado as well as between Region 8 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 the 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 the 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

CDPHE’s fact sheets consistently provide thorough facility and locational information as well as a description of treatment processes. Fact sheets would be improved with greater details on the receiving water, information that is currently included in WQA documents. Permit applications do not require data equivalent to federal data requirements. It appears CDPHE staff did not document that applications were reviewed for technical completeness. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure the fact sheets contain detailed information about the receiving water and designated uses, similar to what is included in the WQA. The POTW fact sheets should contain evaluations of wastewater contributions from non-domestic or industrial users in the service area and the potential impacts to the POTW. (Category Three)

- The CDPHE’s application form needs to include equivalent submittal requirements on the specific data that the applicants are required to submit in accordance with 40 CFR § 122.21. (Category One)
- CDPHE must ensure receipt of application information that is consistent with the application requirements established by 40 CFR § 122.21. (Category One)
- CDPHE should ensure that the permit records contain documentation regarding the technical completeness of the permit applications. (Category Two)

B. Technology-based Effluent Limitations

A permit for a steam electric generating facility inappropriately indicated that federal ELGs did not apply to the discharge. One permit included incorrect effluent limitations that were based on federal ELGs; however, it was corrected in a subsequent permit modification. Additionally, the effluent limitations were inconsistent with fact sheet documentation. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that federal ELGs are applied appropriately and well-documented in the fact sheet. (Category One)
- WQCD staff should provide more detailed discussion of facility operations, associated waste streams, and facility categorization as it relates to federal ELG applicability. (Category Two)
- CDPHE should perform a thorough review of permits and accompanying fact sheets, to ensure that effluent limitations are correctly applied and consistent with supporting documentation. (Category Three)

C. Water Quality-Based Effluent Limitations

At least one permit lacked both short-term and long-term limitations for a priority pollutant. Permits did not consistently illustrate interim compliance dates and milestones and fact sheets did not often provide a justification for why a compliance schedule is necessary. CDPHE’s process of allowing temporary modifications is unclear. Fact sheets did not always provide a strong link to WQBELs based on reasonable potential. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that WQBELs are established as both short-term and long-term limit bases, as appropriate. (Category One)
- CDPHE should ensure that compliance schedules include clear interim compliance dates and milestones. (Category Two)
- CDPHE should describe the agency’s policy for allowing temporary modifications, how they apply, and how they are determined to be appropriate. (Category Two)
- CDPHE should ensure that CDPHE fact sheets create a strong link to WQBELs that are established based on reasonable potential. (Category Two)

D. Monitoring and Reporting

One permit listed Practical Quantitation Limits that were above the effluent limitation or water quality standard. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that permits include EPA-approved analytical methods that capable of detecting and measuring pollutants at, or below, the applicable water quality criteria or effluent limitations. (Category One)

E. Standard and Special Conditions

It appeared that some standard conditions were absent from CDPHE permits reviewed. In addition, certain standard conditions did not appear consistent with the federal standard conditions. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that CDPHE permits include all federal standard conditions and contain requirements that are consistent with those established in 40 CFR 122.41. (Category One)

F. Administrative Process (including public notice)

Records lacked the affidavit of public notice in a newspaper of general circulation. The permit records were found to be incomplete in some cases. In addition, records were not clear in indicating whether a public hearing was held. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that public notices are published in a newspaper of general circulation, per federal regulations at 40 CFR § 124.10(c). (Category One)
- CDPHE should ensure that the administrative record is complete between hard and electronic copy files. (Category One)
- It would be a best practice for CDPHE to note whether a hearing was requested, or whether no hearing was requested or held. (Category Three)

G. Documentation (including fact sheet)

Fact sheets sometimes lacked contact information for permit writers. The administrative record often did not include the draft permit. Proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE should ensure that fact sheets include complete contact information for permit writers consistent with 40 CFR 124.8(b)(7). (Category One)
- CDPHE must include a copy of the draft permit in all administrative records consistent with 40 CFR 124.9. (Category One)

H. National Topic Areas

Proposed actions items for core topic areas are provided below.

1. *Nutrients*

Colorado is making progress to reduce nutrient loadings to the surface waters of the State by implementing a two-part strategy with nutrient criteria in Regulation #31 and a Control Regulation #85. The two-part strategy requires monitoring to assess the quality of the receiving waters, effluent limitations for tiers of POTWs and non-POTWs, and a voluntary incentives program for treatment works to reduce nutrient loadings using tools such as BNR optimization, water quality trades, a source reduction plans, watershed nutrient reductions, or capital improvements.

- There are no critical findings or recommended actions to improve the program's implementation of this component.

2. *Pesticides*

Colorado's General Permit# COG860000 for Discharges from Applications from Pesticides was issued on September 8, 2014 with an effective date of January 1, 2015 and an expiration date of December 31, 2019. This permit is the 1st renewal of CDPHE's 2011 PGP developed concurrently with the EPA PGP. The CDPHE PGP adequately provides coverage of pesticide applications to and over Waters of the State, given the resource constraints at the CDPHE.

- There are no critical findings or recommended actions to improve the program's implementation of this component.

3. *Pretreatment*

Based on this PQR, all POTW permits reviewed clearly incorporate requirements to implement the general and specific prohibitions established at 40 CFR Section 403.5(a)(1) and (b). For those permits reviewed for POTWs with pretreatment programs, the permits clearly indicate the date the program was approved. The permits state that permittees must operate a POTW pretreatment program in accordance with the federal Clean Water Act, the federal General Pretreatment Regulations at 40 CFR Part 403, and the approved pretreatment program and any approved modifications.

Region 8 tracks its Industrial User inspections in ICIS.

Critical Findings

Region 8 is not meeting CMS goals in Colorado. Region 8 did not meet the CMS goal of at least one audit and two inspections within 5 years (2013-2017) at any of its 27 POTWs with approved pretreatment programs (zero percent).

Approved Pretreatment Programs

The fact sheets for the permits for POTWs with approved pretreatment programs lack mention that the POTW has an approved pretreatment program. Also, these fact sheets lack discussion of why a pretreatment program is required, types of industrial users contributing discharge to the POTW, and do not appear to address industrial user contributions during the reasonable potential analysis.

4. Stormwater

CDPHE has a strong stormwater program across the three stormwater components of MS4, Industrial and Construction. The CDPHE Statewide MS4 GP and Non-Extractive Industrial Stormwater GP are well written and follow EPA guidelines and requirements. EPA notes that the Statewide MS4 GP permit was not evaluated for compliance with the MS4 General Permit Remand Rule, published on December 9, 2016 (81 Fed. Reg. 89320), due to the timing of the Division’s Statewide MS4 GP issuance. When CDPHE begins the process of issuing its next Small MS4 GP, EPA is available to offer its assistance on ways the general permit can be modified to ensure that it is consistent with the requirements of the MS4 General Permit Remand Rule. In general, Colorado is issuing permits that are clear and measureable. The proposed action items to help Colorado strengthen its NPDES permit program include the following:

- CDPHE needs to ensure that all standard conditions are included in stormwater permits. Additionally, CDPHE needs to ensure that it is meeting the federal requirements in 40 CFR 122.34 and the technology-based effluent limitation guidelines in 40 CFR 450. (Category One)

I. Regional Topic Areas

Proposed action items for special focus areas are provided below.

1. Compliance Schedules

The CDPHE’s water quality standards authorize NPDES permits to include compliance schedules for effluent limitations based on water quality standards adopted after July 1, 1977. The EPA’s review revealed that permits established compliance schedules for water quality based effluent limits but fact sheets provided little detail as to the basis for the compliance schedule and did not clearly identify necessary interim compliance dates and milestones. The EPA recommends the WQCD include clear tables that outline interim compliance dates and milestones for approved compliance schedules. Further, fact sheets would be strengthened by a thorough discussion of the justification as to why a compliance schedule is necessary and leads to compliance with a final WQBEL as soon as possible.

- CDPHE should provide justification for compliance schedules in its fact sheets, including justification on the appropriateness of the compliance schedule and whether it leads to compliance with an enforceable final effluent limitation as soon as possible, consistent with guidance. (Category Two)