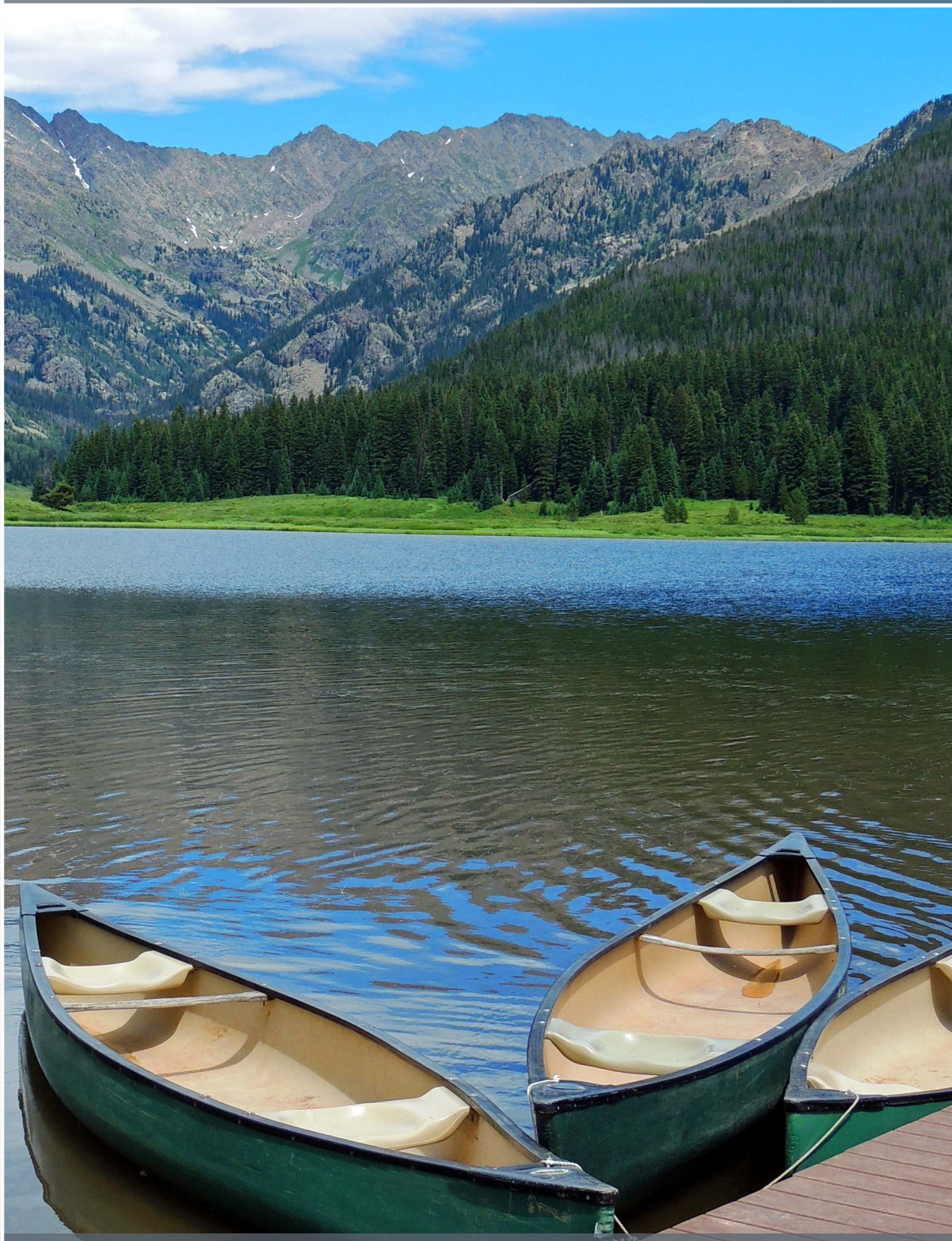
Annual Report

to the Water Quality Control Commission
and Colorado Legislature

2016



Submitted by the Water Quality Control Division
October 2016

FOREWORD

I am pleased to submit the Water Quality Control Division's Annual Report to the Water Quality Control Commission for the period of July 1, 2015 through June 30, 2016 (SFY2016). Pursuant to CRS Section 25-8-305, the division is to file with the commission, on an annual basis, a report on the effectiveness of its efforts under the state Water Quality Control Act. In particular, the division is to:

> Include in such report such recommendations as it may have with respect to any regulatory or legislative changes that may be needed or desired. Such report shall include the then current information that has been obtained pursuant to Section 25-8-303 [monitoring] and information concerning the status of the division's implementation of the discharge permit program established in part 5 of this article.

Further, in accordance with the requirements of section 25-8-305 of the Colorado Water Quality Control Act, this report is also filed with the House Agriculture, Livestock and Natural Resources Committee and the Senate Agriculture, Natural Resources and Energy Committee.

Patrick Pfaltzgraff, Director
Water Quality Control Division
Colorado Department of Public Health and Environment
October 2016

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1

II. LEGISLATIVE AND REGULATORY UPDATE 1
- A. Budget status 1
- B. Legislative changes 2
- C. Regulatory changes 2
- D. New drinking water contaminant standards 3
- E. Regulation 85 – Nutrients management control 4
- F. Regulation 86 – Graywater control 5
- G. SFY2016 update on Clean Water Program fee structure process 6

III. MONITORING ACTIVITIES 6
- A. Routine sampling 7
- B. Special studies 7
- C. Lake and reservoir monitoring 8
- D. Aquatic life and habitat studies 9
- E. Nonpoint source monitoring requirements 9
- F. Cooperative monitoring, data management and data assessment activities 11
- G. Augmented monitoring funds 11

IV. PERMITS PROGRAM 12
- A. Permitting 12
- B. Environmental Agriculture Program 15
- C. Water quality information systems 16

V. STATE FUNDED GRANT PROGRAMS 17
- A. Water Quality Improvement Fund 17
- B. Nutrients Management Grant Fund 17
- C. Natural Disaster Grant Program 17
- D. Small Community Grant Program 18

VI. WATER QUALITY CHALLENGES 20
- A. Legacy mining impacts to water quality 20
  - 1. Other ongoing assessment strategies related to mining 21
  - 2. Nonpoint source mining-related projects 21
- B. Health threats to drinking water 22
  - 1. Lead 22
  - 2. Perfluorinated compounds 22
  - 3. Harmful algae blooms 22

VII. CONCLUSION 22

Appendix A – Colorado Water Quality Forum Work Groups 23

This page intentionally left blank for printing purposes

I. EXECUTIVE SUMMARY

The mission of the Water Quality Control Division is to protect and restore water quality for public health and the environment in Colorado. The vision of the division is to be a top performing organization that implements its programs in such a way that Colorado's drinking water and natural waters are of the highest attainable quality. The division will achieve its mission by pursuing the following clean water and drinking water program goals:

- Protect all designated uses by fully attaining water quality standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations.
- Restore impaired water quality to attainable standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations.
- Prevent waterborne disease and reduce chronic public health risks from drinking water through improved implementation of the federal Safe Drinking Water Act and Colorado's drinking water statutes and regulations.
- Deploy resources to achieve the greatest benefit for public health and the environment while pursuing a strategy of organizational improvement that includes increasing efficiency.

Despite partial success in the 2015 and 2016 legislative sessions with respect to the modernization of clean water fees, the division continues to struggle with resourcing related to the Clean Water Program. The division will plan and implement improvements to its monitoring and permitting programs in the effort to maximize efficiencies and focus on those areas where there is the greatest potential for substantive water quality improvement. The division will continue these efforts by evaluating work processes to make systems more efficient by reducing or eliminating redundancy or waste. This may be done with the involvement of stakeholders where appropriate.

In addition, given the renewed focus on the impacts that legacy mining activities have on water quality, the division will continue to review how these continuing issues impact the state's water resources. Additional monitoring information is needed to better characterize site-specific impacts. This information will then be used to identify appropriate source controls and pursue potential funding sources.

II. LEGISLATIVE AND REGULATORY UPDATE

A. Budget status

For many years, there has been a significant gap in the demand placed on the division and the resources available to address that demand. Since 2006 the division has been required to submit an annual report to the state legislature's Joint Budget Committee. The report summarizes the division's current and anticipated workload levels, including the impact of existing and proposed federal and state program requirements, as well as the associated funding and staffing needs based on those workload levels. The 2015-16 report documented that the current Clean Water Program costs more to administer than the annual funding provided and reduces the fund balance at an accelerated rate.

Federal funds provided to the division continue to be in jeopardy, but no funding reductions were implemented in federal fiscal year 2016. If additional future federal funds are cut, the division will evaluate its program activities to set new priorities and will deploy resources to meet the most pressing water quality problems/needs. Water quality issues not deemed to be priorities will likely not be addressed.

B. Legislative changes

During the 2016 session of the general assembly, two bills passed that affect the division:

- HB16-1005 Residential Precipitation Collection (Rain barrels).
- HB16-1413 Financing the Water Pollution Control Program (Clean Water Program).

HB16-1005 Residential Precipitation Collection (Rain barrels)

This bill allows the collection of precipitation from the roof of a home in up to two rain barrels with a combined storage capacity of 110 gallons. The division is required to develop best practices for non-potable usage of collected precipitation and vector control (disease prevention) to the extent practicable within existing resources. The best practices will be posted on both the department and state engineer websites.

HB16-1413 Financing the Water Pollution Control Program (Clean Water Program)

This bill focused on incremental improvements in data collection for the division's Clean Water Program. Based on the need for greater transparency and per the request of stakeholders, the division began tracking revenues and expenditures for Clean Water Program sectors in 2015. To assist, this bill created six different cash funds to align with the division Clean Water Program sectors: commerce and industry, construction, pesticides, municipal separate storm sewer systems (MS4), public and private utilities, and water quality certifications. The revenue and expenditure tracking is provided to the Joint Budget Committee on a quarterly basis.

The bill also directed the division to conduct a stakeholder process regarding the appropriate and necessary fees that each subcategory of each sector should pay to enable each sector to be adequately funded by fees collected from that sector. The department shall submit a legislative proposal to the Joint Budget Committee by November 1, 2016, concerning its conclusions regarding the fees.

C. Regulatory changes

With reference to regulatory changes that are required or desired, the Water Quality Control Commission (commission) is fully aware of the ongoing efforts of the division to address a variety of issues through collaborative work group processes, including those formed under the auspices of the Water Quality Forum. The current status of the Water Quality Forum work groups can be found at www.colowqforum.org. The stakeholder community is advancing many work group proposals. A current list of new and ongoing work groups is provided in Appendix A. Division staff substantially participated in these work groups through the current reporting period.

The division provided staff support to the commission for several rulemaking and administrative action hearings in SFY2016. The regulations and topics discussed were as follows.

June 2015 RMH – August 2015 Adoption
Regulation 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin (5 CCR 1002-38)

August 2015 RMH – August 2015 Adoption
Regulation 51 – Water Pollution Control Revolving Fund Rules (5 CCR 1002-51)
Regulation 52 – Drinking Water Revolving Fund Rules (5 CCR 1002-52)

November 2015 RMH – November 2015 Adoption
Regulation 86 – Graywater Control Regulation (5 CCR 1002-86)

December 2015 RMH – January 2016 Adoption
Regulation 32 – Classifications and Numeric Standards for Arkansas River Basin (5 CCR 1002-32)
Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (5 CCR 1002-33)
Regulation 34 – Classifications and Numeric Standards for San Juan River and Dolores River Basins (5 CCR 1002-34)
Regulation 35 – Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins (5 CCR 1002-35)
Regulation 36 – Classifications and Numeric Standards for Rio Grande Basin (5 CCR 1002-36)
Regulation 37 – Classifications and Numeric Standards for Lower Colorado River Basin (5 CCR 1002-37)
Regulation 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin (5 CCR 1002-38)
Regulation 93 – Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List (5 CCR 1002-93)

January 2016 RMH – January 2016 Adoption (Reformat of Standards Tables)
Regulation 32 – Classifications and Numeric Standards for Arkansas River Basin (5 CCR 1002-32)
Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (5 CCR 1002-33)
Regulation 34 – Classifications and Numeric Standards for San Juan River and Dolores River Basins (5 CCR 1002-34)
Regulation 35 – Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins (5 CCR 1002-35)
Regulation 36 – Classifications and Numeric Standards for Rio Grande Basin (5 CCR 1002-36)
Regulation 37 – Classifications and Numeric Standards for Lower Colorado River Basin (5 CCR 1002-37)
Regulation 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin (5 CCR 1002-38)

April 2016 RMH – May 2016 Adoption
Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (5 CCR 1002-33)
Regulation 31 – Basic Standards and Methodologies for Surface Water (5 CCR 1002-31)
Regulation 41 – Basic Standards for Ground Water (5 CCR 1002-41)

June 2016 RMH – August 2016 Adoption
Regulation 31 – Basic Standards and Methodologies for Surface Water (5 CCR 1002-31)
Regulation 61 – Colorado Discharge Permit System Regulations (5 CCR 1002-61)

D. New drinking water contaminant standards

According to CRS section 25-1.5-202(3), the division is required annually to establish and revise a priority list of contaminants or substances for which new standards may be considered and shall submit the list to the commission for review and approval. This topic was discussed at the June 2011 Safe Drinking Water Program workshop with the commission. It was agreed that this requirement would be covered via inclusion in the annual report. As has been the case for at least the past fifteen years, the division is not considering developing new standards for any

contaminants or substances independent of the process established in the Safe Drinking Water Act whereby the EPA develops and establishes national standards. Promulgating new standards is a time-consuming, resources intensive and very expensive process. The Colorado Department of Public Health and Environment (department) does not have the resources either in number or type of personnel to undertake such activities at this time. The EPA is in the process of evaluating numerous contaminants for drinking water standards development.

E. Regulation 85 - Nutrients management control

Regulation 85 (Nutrients Management Control Regulation) became effective September 30, 2012. This control regulation establishes numerical effluent limitations for many domestic wastewater treatment plants and industrial wastewater dischargers that are likely to have significant levels of nutrients in their discharges. It describes requirements for other point source dischargers and voluntary steps for nonpoint sources to address nutrients. The control regulation also establishes monitoring requirements for point source dischargers and a program aimed at monitoring surface waters for nutrients and related parameters. This effort is geared toward better characterizing nutrient sources and current nutrient conditions to help inform future regulatory decisions regarding nutrient management.

The sampling and analysis certifications for domestic wastewater treatment works and industrial discharges required to conduct monitoring of effluent and surface waters were due for submission to the division by March 31, 2013. To date, 396 sampling and analysis plan certifications have been received. The first three submittals were due to the division on April 15 of 2014, 2015, and 2016 respectively. For the 2015 submittal, approximately 319 reports have been received. The Municipal Separate Storm Sewer System (MS4) discharge assessment data reports were due by October 31, 2014. The reports concluded that using Event Mean Concentration of pollutants for specific land uses provides the best representative estimates for nutrient concentrations in discharges from MS4s. The division agrees that this approach is appropriate. [HR1]

Of the approximately 45 domestic wastewater treatment works currently subject to the Regulation 85 effluent limits, the division has implemented the applicable requirements in 24 permits that authorize the discharge of nutrients. Of those, six met the dilution exception and the division did not apply effluent limits or applied alternative effluent limits. Effluent limits for existing and new facilities were applied in the remaining 18 permits.

Of the initial 45 domestic wastewater treatment works currently subject to the Regulation 85 effluent limits, 29 have completed the site location and design approval processes. The nutrient grant funding available through HB13-1191 seems to have stimulated nutrient improvements projects. The division provided nutrient grant funding to 20 entities with domestic wastewater treatment works. Of these 20 grant funded entities, nineteen have submitted or completed the site location application and design review and approval process. Of the other 16 domestic wastewater treatment works subject to the Regulation 85 effluent limits, 12 may be able to meet the limits without improvements and 4 are unknown. In addition to the original list of 45 domestic wastewater treatment works, three new facilities have started working with the division and will be subject to Regulation 85 effluent limits. Outside of the domestic wastewater treatment works currently subject to Regulation 85 effluent limits, at least 17 other domestic wastewater treatment works have improved their treatment facilities to meet either the minimum nitrogen or phosphorus effluent limits of Regulation 85.

The nonpoint source program continued its proactive partnership with the agricultural community during this reporting period to promote Regulation 85 voluntary nutrient controls, information and

education campaigns about nutrients, and monitoring of nutrients to better understand sources and effectiveness of nutrient controls. The nonpoint source program is doing this in partnership with Colorado State University (CSU) through a number of projects:

- **South Platte Agriculture Nutrients Committee (SPAN)**: The SPAN, led by CSU, is creating an online library of best management practices for agricultural producers to reduce nutrient pollution to surface waters.
- **CSU Agriculture Outreach Committee:** The nonpoint source program is partnering with CSU to produce outreach materials about Regulation 85 that target agricultural producers. The outreach materials will include brochures, a dedicated website and videos.
- **CLEAN Center at CSU:** The nonpoint source program is participating in CLEAN Center initiatives. The CLEAN Center is a multi-agency collaboration lead by CSU. The mission of the CLEAN Center is to create knowledge, build capacity, and forge collaboration to develop and demonstrate sustainable solutions for reduction of nutrient pollution in the nation's water resources. The center's activities are organized around three major themes: understanding the physical system; understanding people and policy; and enhancing the capacity for assessment and decision-making.

During the October 2015 Triennial Review Informational Hearing for Regulation 85, the division recommended to the Water Quality Control Commission that the regulation should be updated and recommended a scope for the rulemaking. That rulemaking hearing to update Regulation 85 is scheduled for October 2017. The division is currently leading a Water Quality Forum work group for the regulation update and that group will provide input to the proposal that the division will prepare for and present to the Water Quality Control Commission.

F. Regulation 86 - Graywater control

House Bill 13-1044 encouraged the use of graywater by providing definitions and a framework for adoption and implementation by the Colorado Plumbing Board, Water Quality Control Commission, Department of Natural Resources, and cities and counties. The house bill did not address operator certification. The Water Quality Control Commission adopted Regulation 86 (Graywater Control Regulation) on May 11, 2015, with a follow-up write-in, comment-only hearing for improved organization and readability on November 9, 2015. Since adoption, the division has been involved with a variety of activities related to the graywater regulation including:

- Working with the City of Boulder and the City and County of Denver on the development of local graywater control programs.
- Participating as a stakeholder in the National Water Research Institute's development of a document titled *Risk Based Framework for the Development of Public Health Guidance for Decentralized Non-potable Water Systems*.
- Contributing to a stakeholder workgroup intending to consider the use of non-potable water (including graywater and reclaimed water) for edible crops.
- Supporting the development of proposed revisions to Regulation 100 (Water and Wastewater Facility Operators Certification Requirements) to address graywater treatment systems.
- Debating proposed legislation that would exempt graywater research projects from the requirements of Regulation 86 and the purview of the commission.

There continues to be interest in expanding and refining graywater use. The City and County of Denver and the City of Boulder are actively working on developing local graywater control programs, and the local graywater ordinance hearing for Denver is currently scheduled to occur on

September 8, 2016. Division staff members have encouraged the development of these local graywater control programs by answering questions and interpreting Regulation 86. Many stakeholders have expressed interest in allowing agricultural irrigation with graywater in future regulation revisions. The division believes that agricultural irrigation with water reuse sources (e.g., graywater and reclaimed water) should be considered holistically so that division staff can thoroughly review research documents and gauge potential human health impacts. Members of the Water and Wastewater Facility Operators Certification Board (board) have asked division staff for support in developing operator requirements for larger graywater treatment facilities. As a result, division staff members have helped create a conceptual proposal to be populated through a stakeholder process before presentation to the board. Finally, the division has engaged in discussions with Colorado State University personnel about the university's pursuit of draft legislation exempting graywater research projects from Water Quality Control Commission requirements. The division upholds the commission as the sole authority to protect public health and the environment in the matter of graywater and hesitates to allow research projects subject only to the approval of an Institutional Review Board.

G. SFY2016 update on Clean Water Program fee structure process

The general assembly created a permit fee structure to supplement federal and state general funding for the division's Clean Water Program. Fees that the division can assess have been listed in statute (both fee category and amount) since 1983. The ability to make changes to the fee structure has been very limited with only five fee adjustments in more than 30 years. The last fee increase was in 2007. During the 2016 legislative session, the Joint Budget Committee proposed House Bill 16-1413, and this bill was adopted. House Bill 16-1413 separated the municipal separate storm sewer sector (MS4) from the public and private utilities sector and created six separate cash funds for each of the Clean Water Program sectors. In addition, House Bill 16-1413 implemented a one-time general fund appropriation offset by $1,208,007 from the department's Water Quality Improvement Fund to maintain services for the commerce and industry, MS4, and public and private utilities sectors. In addition, House Bill 16-1413 required that during the 2016 interim, the department conduct a stakeholder process regarding the appropriate and necessary fees that each subcategory of each sector should pay to enable its sector to be adequately funded by fees collected from that sector. House Bill 16-1413 also directed the department to submit a legislative proposal to the Joint Budget Committee by November 1, 2016, concerning its conclusions regarding changes to the fee structure.

The department began the stakeholder process required by House Bill 16-1413 in May 2016 and concluded the effort in August 2016. The department conducted three stakeholder meetings. The first meeting focused on an overview of the problem, a discussion of an initial set of department recommendations, and a starting scenario for discussion purposes that was focused on the general fund to cash funds mix to fund the total costs associated with each clean water sector. During the second meeting, the department presented four scenarios with different general fund to cash fund mixes for each clean water sector and the resulting cash fee change for each clean water sector. At the final meeting, the department presented its proposal based on feedback from the first two meetings and online surveys. The department conducted an additional online survey after the third meeting to seek feedback on the department's proposal. The department's recommendation was included as part of our budget request and is currently under review.

III. MONITORING ACTIVITIES

The division's surface water monitoring activities for SFY2016 were grouped into six general types: (A) routine sampling; (B) special studies; (C) lake and reservoir monitoring; (D) aquatic life and

habitat studies; (E) nonpoint source monitoring requirements; (F) cooperative monitoring activities; and (G) augmented monitoring funds.

A. Routine sampling

The division uses a rotating basin approach for primary stream monitoring. The entire state is sampled on a five-year cycle that matches the commission's schedule for triennial reviews of basin standards and classifications. For the purposes of conducting the triennial reviews, the state has been divided into four major river basins. Each of the four major river basins is sampled intensively once every five years. This allows the division to concentrate its limited resources on one basin in order to provide data for the triennial review scheduled for that basin and for other data objectives such as impairment determination and source control investment targeting and evaluation. Sampling is more evenly allocated among the long-term trend sites in the four basins, where special studies are conducted and where specific data gaps may be filled. In every fifth year of the cycle, Regulation 31 (Basic Standards and Methodologies for Surface Water) is reviewed by the commission, and there is no need to intensively sample one of the major basins.

The number of sites and the number of times a specific site is sampled each year is controlled by the division's monitoring budget for laboratory analyses, which in SFY2016 was $488,228. The samples collected are analyzed by the department's Laboratory Services Division. Depending upon the amount of data sought for a particular site and its accessibility, sites are visited on a regular schedule, such as monthly or bimonthly, or when weather and road conditions allow access. In SFY2016, the specific river basin focus targeted the Rio Grande and Arkansas River basins.

Routine water chemistry samples were collected from a network of 335 sampling sites located across the state. Of the 335 total sites, 29 sites are classified as trend sites, sites to be maintained annually and independent of the sites selected for the focus basin in a particular fiscal year. The trend sites are distributed as follows: seven within the South Platte River Basin, ten within the Colorado River Basin, six within the Arkansas/Rio Grande River Basins, and six within the San Juan/Gunnison River Basins. Of the total number of sites, 10 percent are within the Platte River Basins, 10 percent within the Colorado River Basin, 74 percent within the Arkansas/Rio Grande River basins and 6 percent within the San Juan/Gunnison River Basins. This sampling resulted in the collection of 1,197 sample sets. Samples were analyzed for a suite of constituents including metals, inorganics and nutrients. Field parameters such as dissolved oxygen, pH, specific conductance and temperature were also collected.

Sampling needs of other parts of the division as well as citizen and performance partner demands for water quality sampling services exceed the fiscal and staff resources currently available to the division. Increasing analytical costs and a relatively fixed monitoring budget have caused fewer water body locations to be sampled on an annual basis than in past years, which results in less information for future water quality management decisions. The small increases in sampling sites are currently supported by additional funding from the EPA and may not be permanent.

B. Special studies

Special studies monitoring includes synoptic sampling events for total maximum daily load determinations, fish tissue sampling and other water quality investigations.

Seventeen reservoir and river sites across the state were sampled for fish tissue mercury from July 1, 2015 through June 30, 2016. Three new fish consumption advisories were issued - one for lake trout in Gross Reservoir, one for wiper (striped bass and white bass hybrid) in Lonetree Reservoir,

and one for walleye in Milavec Reservoir. However, some changes were made to existing advisories to include or exclude certain species or size classes of fish based on the fish tissue levels from the most recent data. Fish consumption advisories for Carter Lake, Cheesman Reservoir, Horsetooth Reservoir and McPhee Reservoir were modified. As of July 1, 2016, there are 25 advisories for lakes and reservoirs in Colorado (24 for mercury and one for selenium). The division has continued to build a strong working relationship with the Colorado Division of Parks and Wildlife aquatic biologists by providing rationales behind sampling sites priorities, supporting biologists' efforts in the field, and modifying sampling priorities based on feedback from the biologists.

After the Gold King mine spill in August 2015, there was concern about levels of metals in the Animas River downstream of the mine spill. This area is of particular importance to the angler community because it is home to a Gold Medal Fishery for trout (meaning there is an extraordinarily robust population, and thus high fishing pressure). Division staff coordinated a monitoring program with Colorado Parks and Wildlife. The biologists collected fish shortly after the spill in fall 2015 and again in spring 2016. Division staff prepared fish samples and then the department's Laboratory Services Division analyzed the fish for 13 metals including aluminum, arsenic, beryllium, cadmium, cobalt, copper, lead, manganese, mercury, nickel, selenium, uranium and zinc. Detectable metal levels were compared to EPA Region 8 regional screening levels, which are levels under which human consumption of fish is considered safe. None of the fall 2015 fish samples exceeded the screening levels, and thus, the department was able to recommend to the public that Animas River fish may be consumed without additional health risks due to the Gold King mine spill. The results from the spring 2016 samples are still pending at the laboratory.

The division also continued to monitor selenium levels of Colorado fish in anticipation of the EPA's new selenium criterion, which was finalized on June 20, 2016. For selenium, fish tissue concentrations are generally not a concern for human consumption. Instead, the criterion protects the fish themselves from toxic effects including mortality, decreased growth rates and reproductive effects such as increased rate of mortality and deformities in offspring. The EPA criterion consists of both fish tissue-based and water column-based elements. The division is working in collaboration with Colorado Parks and Wildlife and Colorado State University to better understand bioaccumulation, trophic transfer, and toxicity of selenium in naturally exposed fish. In addition to division special projects resources, the division was awarded substantial funding from the Colorado Water Resources and Power Development Authority to supplement this effort. Data collected may help answer questions about whether Colorado fish, which may be naturally exposed to relatively high levels of selenium due to geology, are as sensitive to the fish with which the criterion was developed. These data may also help answer questions regarding reproductive and hatching success of Colorado fish with relatively high selenium tissue levels. The division may continue to monitor fish tissue levels in water bodies which have been previously listed for exceedances of water column standards.

C. Lake and reservoir monitoring

The division continued its lake and reservoir sampling in SFY2016. The division focused sampling efforts on the Arkansas, Rio Grande, and Upper and Lower Colorado River basins in order to provide data for the upcoming triennial review. Ten lakes from the Arkansas and Rio Grande River basins were sampled three times each during the growing season. Ten lakes were also visited one time each from the Upper and Lower Colorado River basins to help focus sampling efforts for SFY2017 monitoring. At each lake, depth profiles of dissolved oxygen, pH, conductivity and temperature were collected at one-meter intervals. Water quality samples were taken from near the surface and near the bottom. Samples were analyzed for a suite of chemical parameters including nutrients, metals and inorganics. In addition, the surface sample was analyzed for the chlorophyll a content as

a measure of trophic status and for the phytoplankton population to determine the algal species composition.

As part of an effort to expand the lake monitoring program in Colorado, the division established a partnership with Colorado Parks and Wildlife (CPW). This lake sampling partnership began as a pilot program in the summer of 2013 and has continued into 2015 resulting in data collection at over 57 lakes and reservoirs. The partnership will continue using a rotating basin approach as long as funding is available. The field work will be completed by the CPW field staff while the analytical funds have been set aside from the 106 Monitoring Initiative grant. A limited suite of lake monitoring parameters were tested from each lake. Through this partnership, Colorado can increase the percentage of assessed acres in Colorado for the Integrated Report. The division will also be examining these results and developing a strategy for the future of this partnership. The division plans on summarizing results from this work in the 2017 Integrated Report.

D. Aquatic life and habitat studies

The division collected macroinvertebrate and habitat samples at multiple locations in the state. At each of the habitat sites, water quality samples were taken and analyzed for a specific suite of chemical constituents. These data plus habitat scores, periphyton samples, and occasional substrate measurements will be used in assessment of aquatic life use and 303(d) or Monitoring and Evaluation (M&E) listing decisions.

The aquatic life studies included the following activities: targeted sampling of a 303(d) and M&E listed stream segment (Lake Fork below Sugarloaf Dam); characterizing the benthic macro-invertebrate communities at four trend sites across the Arkansas and Rio Grande River basins with naturally occurring high concentrations of total phosphorus; investigating aquatic life use upgrades; investigating and visiting candidate reference sites in the Arkansas and Rio Grande River basins; collecting periphyton data at existing reference sites; gathering aquatic life data to inform nutrient use attainability analysis in the Rio Grande River Basin; and gathering sediment data in Colorado's eastern plains to inform new sediment regions for commission policy 98-1.

The division worked collaboratively with the U.S. Geological Survey, San Luis Valley Ecosystem Council, Roaring Fork Conservancy, U.S. Forest Service, U.S. EPA, and a graduate student from Colorado School of Mines in order to collect macroinvertebrate samples at monitoring stations of particular importance to these watershed groups, utilities, or federal agencies.

E. Nonpoint source monitoring requirements

The division's nonpoint source work group (work group) is required to report to the EPA measurable results from projects funded through its Clean Water Act Section 319 grant. For implementation projects, these results are measured through monitoring, and the work group assists project sponsors with monitoring through its Measurable Results Program. The work group is also encouraged as part of its Section 319 grant to collaborate with the Natural Resource Conservation Service on the National Water Quality Initiative (initiative) for the two priority initiative watersheds in Colorado. The work group's role in the initiative is to monitor the effectiveness of conservation practices that the Natural Resource Conservation Service helps producers implement.

Nonpoint Source Work Group Measurable Results Program

Through the Measurable Results Program, the nonpoint source work group provides project sponsors with technical assistance in the form of sampling and analysis plan development, pre- and post-

contract monitoring and data analysis, and access to sampling protocols that have been adopted by the division's Environmental Data Unit (EDU). The work group implements the Measurable Results Program in partnership with the EDU for the collection of nonpoint source monitoring data. The following discussion provides status information about results for several sample nonpoint source projects.

1) Kerber Creek restoration project.

   Nonpoint source funds were used to support the implementation of best management practices to address load reductions identified in the total maximum daily load report for Kerber Creek. A total of 25 acres of mine waste/tailings were treated in place through phytostabilization and re-vegetation to reduce the mobility of metals in the soil while establishing native vegetation. More than four miles of stream channel were restored with several thousand feet of stream bank stabilized and sedge mat and willows transplanted. These efforts, combined with the construction of 167 in-stream structures, improved the condition of the riparian vegetation, creek sinuosity, width and depth, and fishery habitat. Project monitoring was a collaborative effort between the nonpoint source work group and the project sponsor. Monitoring was conducted to evaluate water quality improvements, health of the aquatic invertebrates and fish population, and overall watershed health. The final report for the project is being completed, including evaluation of monitoring data to determine project results, and will be available on the npscolorado.com website.

2) Animas and Florida Rivers water quality and habitat improvement project.

   Nonpoint source funds were used to support implementation of best management practices identified in the *Animas River Watershed-Based Plan (2011)* to address sediment and nutrient loading to the Florida and Animas Rivers. The best management practices that were implemented included irrigation improvements and riparian fencing. The project sponsor completed pre-project monitoring; monitoring during project implementation was conducted in collaboration with the Measurable Results Program. Ongoing, post-project data will be collected by the Measurable Results Program to better evaluate effectiveness of the best management practices implemented. The final report for the project is being completed, including evaluation of monitoring data collected to-date, and will be available on the npscolorado.com website. Analysis of additional post-project data will also be available on npscolorado.com.

3) Clear Creek watershed.

   The nonpoint source work group has partnered with the Clear Creek Watershed Foundation and other partners for the past 15 years to support water quality improvement projects in the Clear Creek watershed. After many years of implementing best management practices throughout the watershed, the Measurable Results Program, in collaboration with EDU, is conducting comprehensive, watershed-scale monitoring to evaluate results from the projects implemented. These results will be provided in upcoming reporting cycles.

National Water Quality Initiative

Through the National Water Quality Initiative (initiative), the Natural Resource Conservation Service assisted local producers with implementation of conservation practices in the Grape Creek/DeWeese Reservoir, an initiative priority watershed near Westcliffe, Colorado. To date, over $1.25 million of initiative funding has been spent to implement conservation practices on approximately 1,800 acres of agricultural land in the Grape Creek watershed. These conservation practices reduce nutrient runoff into Grape Creek which flows into the Arkansas River near Cañon City, Colorado. The work group collaborated with the Natural Resource Conservation Service and

EDU to develop a monitoring approach for the watershed and collected water quality samples in SFY2014 and 2015. Data are summarized below.

Sampling Site	TN mg/l (2014)	TN mg/l (2015)	Standard mg/l (*)	TP mg/l (2014)	TP mg/l (2015)	Standard mg/l (**)
GRAPE CK. ABV. DEWEESE RES. @ GAGE	0.3293	0.2946	7	0.0657	0.055	0.11
GRAPE CREEK AT CR170 (DOWNSTREAM WWTP)	0.3963	0.2245		0.1053	0.0557	
GRAPE CREEK AT HERMIT RD	0.4087	0.2588		0.141	0.0766	

(*) based on Regulation 85 New Facilities
(**) based on Regulation 32 Inorganic Phosphorus Standard

Monitoring in the Grape Creek watershed will continue in support of ongoing evaluation of conservation practices effectiveness at reducing nutrient impacts to water quality.

F. Cooperative monitoring, data management and data assessment activities

To ensure that the maximum quantity of relevant data are assessed each year, the division issues a call for data to numerous cooperators, including federal and state entities, basin authorities, dischargers, watershed groups, as well as River Watch and nonpoint source management project sponsors. Through this mechanism, the division accumulates a considerable amount of data beyond what it can directly sample and analyze.

As a member of the Colorado Water Quality Monitoring Council (council), the division has discussed cooperative monitoring efforts with other stakeholders. To facilitate data sharing, the council works with the Data Sharing Network. The Data Sharing Network is a statewide, web-based, water quality database and interactive map. The water quality database and interactive map are housed on the council's website at www.coloradowaterquality.org. Clean Water Act Section 319 and 106 Monitoring Initiative grants from the division supported this project during its development stage in previous years.

G. Augmented monitoring funds

In order to upgrade state monitoring efforts and implementation of the Monitoring and Assessment Strategies for States, Colorado applies for Clean Water Act Section 106 monitoring initiative grant money every year. Colorado received $160,000 of these monitoring initiative funds to facilitate the implementation of the EPA's 10 Elements document and to conduct a statewide probabilistic survey of water quality as part of a national project. Additional monitoring projects were completed in SFY2016. The division has designated these funds for additional monitoring of rivers and lakes, nutrient sampling at less than 25 acre high elevation lakes, and aquatic life use attainment studies. With a permissible modification to this grant, the division spent $70,000 on enhanced equipment to

bolster temperature monitoring at its network of temperature loggers and statewide historical stations. This program continues to fund Colorado's effort to expand its monitoring and assessment capabilities.

In SFY2016, four studies evaluated the water quality changes in receiving streams as a result of the implementation of Water Pollution Control Revolving Fund assisted infrastructure projects. These studies included the Boxelder Sanitation District Wastewater Treatment Facility, Town of Cedaredge Wastewater Treatment Facility, South Adams County Water and Sanitation District's Williams Monaco Wastewater Treatment Plant, and Town of Wray Wastewater Treatment Facility.

Additionally, in SFY2016, five studies evaluated water quality impacts and quantified pollution contributions from abandoned hardrock mines. Each of these studies exists in water quality limited water bodies and are done in coordination with the Division of Reclamation, Mining and Safety (DRMS). DRMS contributes significantly through sampling, report generation and restoration expertise. Projects include the Daisy Mine in the Redwell Basin, Illinois Gulch near Breckenridge, several abandoned mines in the upper Uncompahgre drainage, the Waldorf Mine in the Leavenworth Creek Drainage and Evans Gulch near Leadville. Each of these assessments is at a different point of completion.

IV. PERMITS PROGRAM

A. Permitting

Program areas

1) Process wastewater discharges to surface water.

   Traditional sources were the first to be permitted following promulgation of the Clean Water Act in 1972, and these are referred to as process wastewater discharges. This includes discharges from domestic sewage systems, or domestic wastewater treatment facilities, and discharges from a variety of industrial sources such as manufacturing, food processing, natural resource extraction, transportation, electric services and construction. About 1,510 permits authorizing these types of discharges are in effect, about 370 of which are individual permits and about 1,140 of which are authorizations under 13 general permits. These comprise the majority of the permits included in the permit backlog and high priority permit performance measures discussed later.

2) Municipal separate storm sewer systems (MS4).

   Operators of MS4s in urban areas are required to obtain permit coverage for discharges from their MS4s to waters of the state. Operators of MS4s include Colorado cities and counties (referred to as "standard" MS4s) as well as other governmental organizations such as the Department of Transportation, special districts, and school districts (referred to as "non-standard" MS4s). The permits require the implementation of control measures to prevent or reduce the discharge of pollutants to waters of the state. Discharges from five of the largest MS4s in the state are authorized under individual permits. Discharges from approximately 56 MS4s operated by cities and counties (standard MS4s) are authorized under two general permits, and discharges from approximately 58 MS4s operated by other governmental organizations (non-standard MS4s) are authorized under a third general permit. The division recently completed the renewal of the two general permits for standard MS4s.

3) Industrial and mining stormwater.

Operators of industrial and mining facilities in certain categories are required to obtain permit coverage for discharges of stormwater from their facilities or else certify that their industrial activities are not exposed to precipitation. Discharges from two facilities are authorized under individual permits, and discharges from approximately 1,483 facilities are authorized under general permits. Another 343 facilities have certified that their industrial activities are not exposed to precipitation.

4) Construction stormwater.

Site operators engaged in clearing, grading and excavating activities that disturb one acre or more, including smaller sites as part of a larger common plan of development, must obtain permit coverage for their stormwater discharge. The division authorizes all construction stormwater discharges in the state under one general permit and currently has about 4,460 authorizations. The number of authorizations under this general permit varies significantly year to year and seasonally, but this number has shown an upward trend over the last several years that correlates with an increasing trend in the number of active construction projects.

5) Pesticides.

A 2009 federal appeals court decision resulted in a requirement for entities applying pesticides in or near waterways to obtain discharge permit coverage by an October 31, 2011, court-ordered deadline. In November 2011, the division issued a short-term (two-year) general permit based on the final EPA permit. This allowed the department time to seek permitting and compliance oversight resources to issue permits and conduct a reasonable level of compliance oversight. Those resources were secured in the 2013 legislative session, and the permit was extended later that year. The division renewed the permit in 2014 for a five-year term.

6) Groundwater.

The division issues permits authorizing discharges to groundwater from domestic sewage systems with a design capacity greater than 2,000 gallons per day. Discharges from smaller systems are subject to county authority. This is a state-only permit program. The division estimates that there are approximately 200 facilities that should be permitted; however, many of these facilities do not have current permits. The division continues to implement a process to ensure that the owners of these facilities do obtain the appropriate permits. This process is resource intensive because many facilities without appropriate permit coverage need to upgrade their level of treatment. To assist these operators, the division works with them to upgrade their systems prior to issuing new permits or includes compliance schedules in permits that outline the steps facilities need to take to comply with effluent limits. The division continues to make incremental progress in permitting these discharges.

7) Biosolids.

The division implements a state biosolids program consistent with the direction provided in Regulation 64. The regulation provides authority to the division for implementation independent of, and more stringent than, the federal biosolids requirements for land application. Both the federal and the Colorado regulations governing beneficial use of biosolids identify allowable levels of heavy metals and pathogens in the biosolids and set restrictions and management requirements. The regulations require that application rates be based upon the nutrient requirements of the crops under cultivation. In 2015, approximately 76 percent of biosolids generated by municipal wastewater treatment facilities in Colorado were beneficially reused and subject to regulation under the program. Because Colorado has not been formally delegated

authority to implement the federal biosolids program, the EPA retains ultimate authority over the federal program.

8) Pretreatment.

The division implements a state pretreatment program consistent with the direction provided in Regulation 63. The division's administration of the program focuses on issuing permits or control mechanisms to significant industrial user facilities that discharge to domestic sewage systems without a federally approved local pretreatment program. The regulation provides authority to the division for implementation of requirements equivalent to and more stringent than the federal program. The division currently has two state-authorized pretreatment programs and ten permits or control mechanisms for industrial user facilities. This tool is a strong complement to the federal pretreatment framework. Because Colorado has not been formally delegated authority to implement the federal pretreatment program, the EPA retains ultimate authority over the federal program.

9) Reclaimed water.

The division implements a state reclaimed water program consistent with the direction provided in Regulation 84. There is not a corresponding federal regulation that addresses uses of reclaimed water. Regulation 84 requires permitting by the entity that treats and distributes the reclaimed domestic wastewater as well as each entity that uses the reclaimed water. A total of 27 entities are authorized to treat and distribute reclaimed water which allows for the reuse of up to 124 million gallons per day (MGD) of reclaimed water in Colorado. Approximately 491 entities are authorized to use reclaimed water, and 96% of the authorized uses are for irrigation. If the authorized capacity was used, the quantity of reclaimed water distributed would be equivalent to the estimated average daily domestic water consumption of about one million Coloradans (based on a 2005 estimate of 121 gallons per day per capita provided in *Ivahnenko, Tamara, and Flynn, J.L., 2010, Estimated withdrawals and use of water in Colorado, 2005: U.S. Geological Survey Scientific Investigations Report 2010-5002*). The division facilitated several stakeholder meetings during the past year to gather input to inform the division's recommendations to the commission at a Regulation 84 informational hearing held in May 2016. The division has also done work to identify and pursue possible sources to provide funding needed to support development of regulatory proposals.

Permitting performance measures: Permit backlog and high priority permits

Backlog is a measure of uncompleted work. A backlogged permit is defined as a permit that has not been renewed prior to its expiration date or as a new individual permit that is not issued within 180 days of receipt of the permit application. In May 2000 as part of a national backlog reduction initiative, the EPA required a permit backlog reduction plan for the division due to its inability to keep up with permit renewals and requests. Shortly thereafter, the EPA first approved the division's backlog reduction plan, and backlog maintenance expectations have been included in the annual state EPA performance partnership agreement ever since.

Approximately 1,500 permits are currently included in the EPA's permit backlog measure. This includes a subset of permits authorizing discharges to surface water, more specifically, all individual permits, general permits for confined animal feeding operations, and general permits for process water discharges. The performance partnership agreement between the department and EPA for FFY2015 (October 2014 – September 2015) included a goal that 74 percent of the permits included in the EPA's backlog reduction program would be current (26 percent backlogged). The division's backlog as of October 1, 2015, was 65 percent current (35 percent backlogged),

short of the 74 percent goal. The main cause of not meeting the backlog goal was being unable to complete renewal of the sand and gravel general permit.

The PPA backlog goal for FFY2016 (October 2015 – September 2016) is 75 percent current (25 percent backlogged), and the division anticipates that by the end of September 2016, 60 percent of permits will be current (40 percent backlogged). There are several reasons the section will likely not meet the backlog goal: its inability to renew the sand and gravel general permit; unexpected vacancies; and unanticipated budget shortfalls that have not allowed many vacancies to be filled.

Another EPA measure is priority permits. Priority permit issuance has been used as a performance measure in the PPA between the department and EPA since FFY2005. The measure and procedures have changed over time. However, the EPA has always considered any expired permit for which a renewal application has been submitted and which has been administratively extended for two years or more, or any application for a new permit that has not been acted upon for two years or more, to be a priority permit. Since FFY2013, the EPA and states are required to select 20 percent of candidate permits. Candidate permits include new and renewal permit applications that have not been acted upon for two years or more plus permits eligible for environmental significance or state/national program priority reasons. Of the identified candidate permits, the states must commit to issuing approximately 80 percent. For FFY2015, the division selected 31 high priority permits and needed to issue 25 of them to be able to meet the 80 percent goal. The division was able to issue 23 by September 30, 2015. For FFY2016, the division has 20 high priority permits and needs to issue 16 to meet the 80 percent goal. The division expects to issue 14 of those permits by September 30, 2016.

B. Environmental Agriculture Program

The Environmental Agriculture Program administers regulatory, permitting, compliance assistance and compliance assurance activities for animal feeding operations (AFOs), concentrated animal feeding operations (CAFOs, e.g., large dairies, feedlots, poultry facilities) and housed commercial swine feeding operations (HCSFOs). The agriculture program utilizes a sector-based approach that takes into account the interaction and environmental impact of air, water and soil resources when making regulatory and policy decisions.

The program oversees 93 swine farms covered by 10 individual HCSFO permits, 83 CAFO permits, 114 non-permitted CAFOs and hundreds of AFOs. The program administers Water Quality Control Commission Regulation 61 (Colorado Discharge Permit System Regulations); Regulation 81 (Animal Feeding Operations Control Regulation); Regulation 66 (Financial Assurance Criteria Regulations for Colorado Housed Commercial Swine Feeding Operations); and Air Quality Control Commission Regulation 2, Part B (Odor Emissions Regulation for HCSFOs).

During SFY2016, the program completed 253 inspections at animal feeding operations. Of these inspections, 48 were conducted at AFOs and CAFOs and 205 were conducted at HCSFOs. CAFO inspections included 17 permitted CAFOs, 22 non-permitted CAFOs and eight other permitted and non-permitted CAFOs to verify compliance with corrective actions identified during the previous inspection year. One medium sized AFO was inspected to verify animal numbers and to ensure appropriate best management practices were being implemented. The program conducted 93 water quality inspections and 112 odor inspections at HCSFOs. Overall compliance rates at CAFO facilities improved slightly in SFY2016. On average, 77% of inspected non-permitted CAFOs and 83% of permitted CAFOs were in compliance with applicable regulatory requirements. HCSFO compliance rates remained consistent with approximately 95% of sites in compliance with applicable air and water regulatory requirements.

In SFY2016, the agriculture program completed development of a Facility Management Plan (FMP) CAFO binder for use by non-permitted CAFOs. The binder outlines the necessary requirements that a non-permitted CAFO must implement in order to comply with Regulation 81. The FMP Binder will serve as a valuable tool during program site visits to clarify applicable regulatory requirements and will provide owners with the necessary forms, templates and recordkeeping requirements to document compliance with Regulation 81.

The program issued eight new CAFO general permit certifications and one individual CAFO permit in SFY2016. In addition, three new non-permitted CAFOs registered with the program.

Program goals for SFY2017:

- Conduct triennial review and rulemaking for Regulation 81.
- Draft and issue a new CAFO General Permit by February 2017.
- Utilize the FMP CAFO binder along with compliance assistance site visits to non-permitted CAFOs to improve compliance with regulatory requirements.
- Continue to refine the program's inspection processes to improve efficiency and reduce the number of days facilities are out of compliance.
- Continue program improvements in order to maintain an efficient and effective program that meets stakeholder expectations and supports the department's strategic plan.

C. Water quality information systems

The division currently utilizes a Microsoft 2010 SharePoint (Aquifer) platform to share information and track workflows. A description of technological advances made in SFY2016 follows.

The division has successfully implemented a program for electronic submittal of discharge permit monitoring data in accordance with the EPA's Electronic Reporting Rule. This information is submitted through the EPA's NetDMR system. The current permitted universe requiring a DMR is 2,200. There are currently 620 permits submitting DMRs through NetDMR.

The Safe Drinking Water Program's July 2014 EPA Cross-Media Electronic Reporting Regulation (CROMERR) approval of its Colorado Drinking Water System (CDWS) has enabled the program to receive compliance data and reports electronically. On June 15, 2015, pilot testing of the CDWS concluded and full implementation commenced. In the brief time since its implementation, the CDWS system has provided significant improvements in efficiency and effectiveness in the Safe Drinking Water Program's receipt of required compliance data and other reports. There are currently approximately 2,000 public water systems that are required to submit compliance data. Implementation of the CDWS fulfills long-standing stakeholder requests for the program to provide a reliable, easy to use electronic submittal mechanism. Feedback from stakeholders and labs on CDWS continues to be overwhelmingly positive. Once the Customer Interface Modernization Project for a Lean Environment (CEOS) system, discussed below, is able to meet the business needs of the Safe Drinking Water Program and its stakeholders, it is planned that CDWS will ultimately become incorporated into CEOS.

The EPA promulgated a new rule requiring electronic reporting for current paper-based NPDES reports, effective December 21, 2015. The division supports electronic reporting as it saves time and resources for permittees, the State of Colorado, and the EPA while improving compliance and resulting in better protection of the nation's waters. The rule requires permittees and regulators to use information technology to electronically report information and data related to the NPDES permit program in lieu of filing written reports. DMRs must be submitted electronically by

December 21, 2016, unless a waiver has been granted. All other documents must be submitted electronically by December 21, 2020, unless a waiver has been granted.

The department's environmental program has embarked on a five-year project called CEOS. This initiative is designed to create an umbrella system for customers to interface with all of the department's environmental divisions. This umbrella system will provide a single point of entry for customers to electronically provide and obtain environmental information. This system will bring the division into compliance with the EPA's Electronic Reporting Rule, and the division will have a pilot version of CEOS available for limited stakeholder use in December 2016. Funding for future development has been requested but not yet approved.

The division has implemented a new standards database for the commission that will manage and organize all of the water quality standards, designations, classified uses and temporary modifications. This database includes over 30,000 data records across 900 plus water body segments.

V. STATE FUNDED GRANT PROGRAMS

A. Water Quality Improvement Fund

During the 2006 legislative session, the general assembly created the Water Quality Improvement Fund (WQIF) (CRS 25-8-608[1.5]), and the commission adopted Regulation 55. The WQIF was created to provide grants to local communities/entities to improve water quality, health and safety. Revenue for the fund comes from penalties assessed on polluters who have committed water quality violations.

During the 2012 legislative session, the general assembly authorized an additional $600,000 for capital construction funding. Historically, $167,000 was appropriated annually with a requirement that the funds be expended within the fiscal year. The 2012 changes provided additional funding, required grants be issued for stormwater management training, and provided the flexibility to expend the funds over multiple years.

The division has not issued a Request for Application in the program since SFY2014 as a result of a low fund balance. The division is planning to issue one in SFY2017.

B. Nutrients Management Grant Fund

During the 2013 legislative session, the general assembly created a new Nutrients Management Grant Fund (H.B. 13-1191) within the WQIF. The general assembly authorized $15 million in general funds to provide grants to domestic wastewater treatment works owned and operated by local governments and subject to the first phase implementation of Regulation 85. State general funds were provided for projects to plan, design, construct or improve a wastewater treatment works in order to comply with the effluent limits of Regulation 85. Per the legislation, the Nutrient Management Grant Fund is scheduled to be repealed in its entirety on September 1, 2016.

C. Natural Disaster Grant Program

During the 2014 legislative session, the general assembly created a new Natural Disaster Grant Program to assist communities with water/wastewater infrastructure projects as a result of any natural disasters. Further, the general assembly appropriated $17 million to assist water and wastewater entities with rebuilding as a result of the September 2013 floods.

D. Small Community Grant Program

Senate Bill 14-025 revised and consolidated the small communities water and wastewater grant fund to be codified in CRS, Section 25-1.5-208 – concerning the establishment of a grant program under the Colorado Water Quality Act to assist suppliers of water and domestic wastewater treatment works that serve a population of not more than 5,000 people with meeting their responsibilities for the protection of public health and water quality.

The following tables illustrate the state grants awarded since SFY2014 to assist with these efforts.

TABLE 1 WATER QUALITY IMPROVEMENT FUND SFY2015 and SFY2016 GRANT TOTALS

Association of General Contractors	$50,000
Urban Drainage and Flood Control District	$25,000
	$75,000

TABLE 2 NUTRIENT GRANTS

Boulder, City of	$1,080,000.00
Broomfield, City of	$1,000,000.00
Colorado Springs Utilities	$1,000,000.00
Durango, City of	$1,080,000.00
Eagle River Water and Sanitation District	$80,000.00
Eagle River Water and Sanitation District: Avon DC	$292,400.00
Eagle River Water and Sanitation District: Edwards DC	$1,000,000.00
Fort Collins, City of	$1,000,000.00
Grand Junction, City of	$80,000.00
Greeley, City of	$1,080,000.00
Louisville, City of	$1,000,000.00
Loveland, City of	$1,080,000.00
Lower Fountain Metro Sewage District	$1,080,000.00
Pueblo, City of	$1,080,000.00
Security Sanitation District	$80,000.00
Snowmass Water and Sanitation District	$80,000.00
Silverthorne/Dillon Joint Sewer	$1,080,000.00
South Adams County Water and Sanitation District	$1,000,000.00
Superior Metro District #1	$473,000.00
Tri-Lakes WWT	$1,080,000.00
Widefield Water and Sanitation District	$80,000.00
Windsor, Town of	$894,600.00
	$16,700,000.00

TABLE 3 FLOOD GRANTS SFY2015

Berthoud, Town of	$310,000.00
Boulder, City of	$1,895,000.00
Colorado Springs Utilities	$188,000.00
El Dorado Springs (Boulder Co Gov)	$8,000.00
Evergreen Metropolitan District	$114,487.00
Jefferson County Public Schools	$999,000.00
Longmont, City of	$371,600.00
Loveland, City of	$264,750.00
Morrison, Town of	$202,590.00
Pine Brook Water District	$1,984,375.00
Pinewood Springs Water District	$206,250.00
Evans, Town of	$1,000,000.00
Estes Valley Recreation & Park District	$360,500.00
Jamestown, Town of	$1,000,000.00
Larimer County Big Elk Meadows	$780,000.00
Louisville, City of	$312,125.00
Lyons, Town of	$1,671,316.00
Milliken, Town of	$324,715.00
Nederland, Town of	$249,000.00
Red Rock Valley Water District	$874,523.00
Woodmen Hills Metro District	$400,000.00
Boulder County Government	$1,311,806.00
Jefferson County	$250,000.00
Larimer County	$1,322,300.00
Weld County	$405,000.00
	$16,805,337.00

TABLE 4 SMALL COMMUNITY GRANT PROGRAM SFY2015 and SFY2016

SFY2015	
Cedaredge, Town of	$950,000.00
Cripple Creek, City of	$498,870.00
Eckley, Town of	$950,000.00
Florissant Water and Sanitation District	$200,000.00
Florissant Water and Sanitation District	$950,000.00
Hot Sulphur Springs, Town of	$350,000.00
Larkspur, Town of	$769,500.00
Mill Creek Park Water & Improvement Association	$950,000.00
Mountain View Villages Water and Sanitation District	$87,000.00
Pagosa Springs Sanitation District	$363,000.00
Rocky Ford, City of	$500,000.00
Sheridan Lake Water District	$240,432.00
Silver Plume, Town of	$950,000.00
Tranquil Acres Water Supply	$791,198.00
Yampa, Town of	$950,000.00
	$9,500,000.00

SFY2016	
Ault, Town of	$88,300.00
Avondale Water and Sanitation District	$596,057.00
Baca Grande Water and Sanitation District	$426,150.00
Boone, Town of	$850,000.00
Bristol Water and Sanitation District	$94,500.00
Cathedral Water Company	$95,000.00
Coalby Domestic Water Company	$72,440.00
Costilla County for Garcia	$99,816.00
Forest Glen Sports Association	$850,000.00
Fowler, Town of	$304,355.00
Hidden Valley Mutual Water Company	$840,000.00
Highland Park Sanitation District	$200,000.00
Hot Sulphur Springs, Town of	$100,000.00
Kremmling Sanitation District	$850,000.00
La Veta, Town of	$850,000.00
Louviers Water and Sanitation District	$19,750.00
Manassa, Town of	$15,000.00
Manzanola, Town of	$284,840.00
Mesa Water and Sanitation District (DW)	$31,500.00
Mesa Water and Sanitation District (WW)	$190,200.00
Moffat, County of	$45,438.00
Nederland, Town of	$256,500.00
Pagosa Springs Sanitation District	$442,765.00
Patterson Valley Water Company	$150,500.00
Pritchett, Town of	$185,000.00
Rye, Town of	$440,000.00
Sheridan Lake Water Company	$609,568.00
Stucker Mesa Domestic Water Company	$83,598.00
Timbers Water and Sanitation District	$205,577.00
Wattenburg Improvement Association	$23,146.00
Wiggins Wastewater System	$100,000.00
Yampa, Town of	$100,000.00
	$9,500,000.00

VI. WATER QUALITY CHALLENGES

A. Legacy mining impacts to water quality

The discharge of low pH metals-laden water into the Animas River on August 5, 2015, at the Gold King Mine near Silverton highlighted the potential impacts of past mining activities on water quality in Colorado. The division's response to the release during this reporting period included monitoring and data analysis. The division collected water quality, sediment, and fish tissue samples in the Animas and its tributaries and assessed the data after the release. In addition, the division has a routine monitoring station on the upper Animas River near Silverton below Mineral Creek that samples every other month. In response to the spill, additional data were collected at another site with the collection scheduled for the same date as the Animas River station. The second site is located on Cement Creek above the confluence with the Animas River. Testing includes field parameters, nutrients and a suite of metals. Findings are reported on the division's website at https://www.colorado.gov/pacific/cdphe/animas-river-spill.

In addition to the division monitoring efforts as described above, the division secured grant funding from the EPA. This funding is being used for coordinated sampling efforts with local health departments and the U.S. Geological Survey (survey) for real-time and long-term monitoring. This monitoring is used to address concerns about the risk of heavy metal exposure for agricultural, recreational and water supply uses of the river. High flows, expected each spring during snowmelt, and unanticipated precipitation events are capable of releasing accumulated loads of metals. Characterizing relationships between those metals and continuously monitored parameters, such as pH, turbidity or specific conductance, becomes important for addressing associations between elevated metals concentrations and impacts on Colorado's designated uses. Using existing water quality data from the Upper Animas River Basin, the division has developed interim notification thresholds for specific conductance and pH at two of the survey's discharge gages near the Town of Silverton. Exceedances of these interim thresholds will form the basis for preliminary alert notifications, which are intended to communicate water quality risks to the public. Additional water quality data, collected during the spring runoff and fall-winter base flow period, will be used to adaptively adjust or develop new thresholds at three survey gages total.

1. Other ongoing assessment strategies related to mining

The division has formed an internal task force to examine the impacts to water quality from mine activity throughout the state. The initial focus of this task force will be to identify available data regarding mining impacts to water quality and to make recommendations about how to close any data gaps. The division will continue to coordinate with the Colorado Department of Natural Resources' Division of Reclamation, Mining and Safety to identify potential source control projects that will improve water quality in the Animas River Basin and pursue appropriate funding sources. The division will also coordinate with local public health agencies, the department's Hazardous Materials and Waste Management Division, and EPA Region VIII staff regarding long-term water management activities that will address the problems exemplified at the Gold King Mine.

The division has also contracted with the Colorado Geological Survey to compile existing inventories of abandoned mines and mining features into a single internet application. Several federal and state agencies are assisting in this effort, including the U.S. Forest Service, U.S. Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, U.S. Department of Energy, Colorado Office of Archaeology and Historic Preservation, and the Colorado Division of Reclamation, Mining and Safety. The abandoned mine internet application will be accessible to the public and is expected to be finished in 2017.

2. Nonpoint source mining-related projects

During this reporting period, the nonpoint source program continued to focus on Clean Water Act Section 319 and Colorado Water Resources and Power Development Authority special projects funding on the priority of addressing metal impacts to water quality from abandoned mine lands. The abandoned mine lands priority is identified in the nonpoint source program management plan for the years 2012-2017 (plan available at npscolorado.com). During this reporting period, the nonpoint source program worked on 20 abandoned mine land projects, at varying stages of development and implementation, in collaboration with the Division of Reclamation, Mining and Safety and many other partners. Funds contributed over the life of these projects is projected to exceed four million dollars.

B. Health threats to drinking water

1. Lead

The events in Flint, Michigan created heightened awareness of lead in drinking water and generated public interest and media scrutiny. Additionally, the EPA modified its expectations for states to implement this rule. The division has responded to all media and EPA requests for information. The division has been working with water systems across the state regarding lead rule issues and will continue its efforts to help water systems comply with this most complicated rule.

2. Perfluorinated compounds

During sampling required by the Unregulated Contaminant Monitoring Rule, perfluorinated compounds were detected in drinking water supply wells located in the Security/Widefield Aquifer. The wells in this aquifer are used by Security, Widefield, Fountain and other systems. Private wells have been impacted too. The department partnered with the EPA, El Paso County Public Health and the affected water systems to address this issue. The U.S. Air Force has been identified as one source of contamination from prior firefighting activities although other sources may be involved as well. The Air Force has been working to mitigate the situation. It plans to help those using private wells and the impacted water systems with treatment.

3. Harmful algae blooms

Harmful algae blooms have been detected in Colorado water bodies since at least 2014 and may generate cyanotoxins that are dangerous to humans and animals. The department partnered with water systems to adapt the EPA's guidance for state implementation. The department also worked with epidemiologists and state parks to develop a plan for recreational water bodies.

VII. CONCLUSION

Despite partial success in the 2015 and 2016 legislative sessions with respect to the modernization of clean water fees, the division continues to struggle with resourcing related to the Clean Water Program. The division will plan and implement improvements to its monitoring and permitting programs in an effort to maximize efficiencies and focus on those areas where there is the greatest potential for substantive water quality improvement. The division will continue these efforts by evaluating work processes to make systems more efficient by reducing or eliminating redundancy or waste. This may be done with the involvement of stakeholders where appropriate.

In addition, given the renewed focus on the effects legacy mining activities have on water quality, the division will continue to review how these continuing issues impact state water resources. Additional monitoring information is needed to better characterize site-specific impacts. This information will then be used to identify appropriate source controls and pursue potential funding sources.

Finally, the division will continue to respond to drinking water impacts posed by regulated and unregulated contaminants. The division is involved in several national working groups reviewing the lead and copper rule and will provide input from our experience implementing this complex rule. The division will also continue to respond to the threats posed by unregulated contaminants, especially the issue of perfluorinated compounds in the Widefield Aquifer south of Colorado Springs.

APPENDIX A

Colorado Water Quality Forum Work Groups

Work Group Name	Commission Contact(s)
303(d) Listing Methodology (Policy 10-1)	Rick Hum
MS4 – Stormwater	Not designated
Nutrients	Kevin Greer
Permit Issues Forum	Not designated
Temperature	Led by division staff (contact Nicole Rowan)

Note: For the latest work group status, please visit the Colorado Water Quality Forum website.
http://colowqforum.org