

# STATE OF COLORADO

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Colorado Department  
of Public Health  
and Environment

**Annual Report to the  
Colorado Legislature and  
Water Quality Control Commission  
Fiscal Year 2011-2012**

Submitted to the Colorado Legislature and Water Quality Control Commission  
by the Water Quality Control Division  
Colorado Department of Public Health and Environment  
October 2012

## **FOREWORD**

I am pleased to submit the Water Quality Control Division's (Division's) Annual Report to the Water Quality Control Commission (Commission) for the period from July 1, 2011 through June 30, 2012 (FY 2012). 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.

Christopher E. Urbina, MD, MPH  
Executive Director and Chief Medical Officer  
Colorado Department of Public Health and Environment  
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## **I. EXECUTIVE SUMMARY**

The Mission of the Water Quality Control Division (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 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; and
- Deploy resources to achieve the greatest benefit for public health and the environment while pursuing a strategy of organizational improvement that includes increasing efficiency.

Unfortunately, over the past several years, the Division has experienced a growing resource gap which will make achieving these goals extremely challenging. The workload has substantially increased due to new EPA drinking water and clean water rules and policies, more stringent water quality standards, increasing population growth that is placing more demands on a static or declining water supply, and aging and failing infrastructure. Additional staff resources are necessary to fully implement all water quality programs. On November 1 of each year, the Division submits a report to the General Assembly with a projection of the additional Division staffing needs for the following three year period in order to fulfill all of its regulatory obligations. In the latest report the Division had identified an immediate need of 25.5 FTE in 2011-2012.

This information should be used as the backdrop for reviewing the effectiveness of the Division's efforts under the state Water Quality Control Act.

## **II. LEGISLATIVE AND REGULATORY UPDATE**

### **A. Legislative Changes**

During the 2012 session of the General Assembly, HB 12-1119 was passed and signed by the Governor. This bill limits the discretion of the Colorado Department of Public Health and Environment (CDPHE) to impose fines for minor violations. In particular, the bill addresses consequences arising from inspections and faulty paperwork and has given rise to ongoing dialogue between the Division and stormwater construction contractors.

The enactment of HB 12-1008 requires the executive branch agencies (including CDPHE) to provide methods of eliciting stakeholder input on proposed rules and to notify the general assembly of any rule-making that results in increased fees or fines. This bill also requires the Department to submit a proposed regulatory agenda to the legislative council staff every

November 1, beginning in 2012, for distribution to the applicable oversight committee of the General Assembly.

HB 12-1083 continues the Environmental Agriculture Program annual fees that were put in place in 2009 by the General Assembly. This annual fee applies to concentrated animal feeding operations and housed commercial swine feeding operations dischargers.

HB 12-1126 modernizes and simplifies the laws related to individual sewage treatment systems, now called on-site wastewater treatment systems. This legislation establishes minimum standards and rules for these systems and provides the authority for administration and enforcement of its provisions.

The Joint Budget Committee's 2012-2013 Appropriations Report requires the Department to submit a report that 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 the workload levels. This report is requested to include information on the upcoming fiscal year and out-years. The Department is requested to submit this report to the Joint Budget Committee (JBC) by November 1, 2012. The JBC has also requested a report on the National Pollutant Discharge Elimination System pesticide permit program. This report is requested to include a summary of the Division's work, in collaboration with the Department of Agriculture, on establishing a pesticide permit. The report is requested to include a description of the permit options explored, funding options, staffing needs, and associated workload numbers for the upcoming fiscal year and out-years. The Department is requested to submit this report to the JBC by November 1, 2012.

## B. 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 stakeholder community is advancing many work group proposals. A current list of new and ongoing work groups is provided in Appendix A.

The Commission held several rulemaking and administrative action hearings in FY 2012. Those regulations discussed were as follows:

### August 2011

- Administrative Action Hearing that approved revisions to the Temperature Criteria Methodology (Commission Policy #06-1).
- Rulemaking Hearing that approved revisions to the Colorado Discharge Permit System Regulations (Regulations #61).

### November 2011

- Emergency Rulemaking Hearing concerning resegmentation of the lower portion of Wildhorse Creek and site specific cadmium and selenium standards. The Commission decided to reaffirm the decision and make the action permanent (Regulation #32).

- Administrative Action Hearing that approved the 2012 Water Pollution Control and Drinking Water Revolving Loan Funds Intended Use Plans.
- Administrative Action Hearing to approve the proposed North Front Range Water Quality Planning Association section 208 plan update.

#### December 2011

- Rulemaking Hearing that adopted revisions to the Procedural Rules (Regulation #21).
- Rulemaking Hearing that adopted revisions to Colorado Discharge Permit Systems Regulations (Regulation #61) to resolve issues identified by the Office of Legislative Legal Services related to documents incorporated by reference.
- Rulemaking Hearing to adopt Colorado’s Section 303(d) list of Impaired Waters (Regulation #93).
- Emergency Rulemaking Hearing for South Platte Segment 14 arsenic standard. The Commission decided to adopt a temporary modification of the human health-based arsenic standard (Regulation #38).

#### February 2012

- Rulemaking Hearing to adopt revisions to Water Quality Improvement Fund (Regulation #55).
- Administrative Action Hearing to approve revisions to Colorado’s Nonpoint Source Management Plan.
- Administrative Action Hearing to approve revisions to the water quality management plan for the Pueblo Area Council of Governments (PACOG).

#### March 2012

- Rulemaking Hearing to adopt nutrient monitoring and control requirements (new Control Regulation #85) and numeric nutrient surface water values (Basic Standards Regulation #31).
- Administrative Action Hearing to consider Colorado’s 2012 Section 305(b) Report “Integrated Water Quality Monitoring and Assessment Report.”

#### May 2012

- Rulemaking Hearing to adopt revisions to Water Pollution Control Revolving Fund Rules (Regulation #51).
- Administrative Action Hearing regarding the Section 319 Nonpoint Source Project list.

#### June 2012

- Rulemaking Hearing to adopt revisions to the Regulations for Effluent Limitations (Regulation #62).
- Rulemaking Hearing to adopt revisions to the Water Quality Improvement Fund Rules (Regulation #55).
- Rulemaking Hearing for final approval of the revisions to Regulation #31 and the proposed Regulation #85 (Nutrients).

### C. 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 Water Quality Control Commission for review and

approval. This topic was discussed at the June 2011 Safe Drinking Water Program workshop with the Commission, and 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 twelve 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 EPA develops and establishes national standards. Promulgating new standards is a time consuming, resources intensive and very expensive process. The Department does not have the resources either in number or type of personnel to undertake such activities at this time. EPA is in the process of evaluating numerous contaminants for drinking water standards development.

### **III. MONITORING ACTIVITIES**

The Division's surface water monitoring activities for FY 2012 were grouped into four general types: (1) routine sampling; (2) special studies; (3) lake and reservoir monitoring; and (4) aquatic life and habitat studies.

#### **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 in 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. In every fifth year of the cycle, Regulation No. 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. Sampling is more evenly allocated among the long-term trend sites in the four basins, special studies are conducted, and specific data gaps may be filled.

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 FY2012 was \$409,000. The samples collected are analyzed by the Department's Laboratory Services Division. Depending upon the amount of data sought for a particular site and the accessibility of the site, sites are visited on a regular schedule, such as monthly or bimonthly, or when weather and road conditions allow access. In State FY2012, the specific river basin focus targeted the Arkansas and Rio Grande River Basins, and routine water chemistry samples were collected from a network of 191 sampling sites located across the state. Of the 191 total sites, 30 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. Of the Trend Sites, 11 are within the South Platte River Basin, 5 are within the Colorado River Basin, 7 within the Arkansas/Rio Grande River Basins, and 7 within the San Juan/Gunnison River Basins. Of the total number of sites, 12% are within the South Platte River Basin, 62% within the Colorado River Basin, 12% within the Arkansas/Rio Grande River Basins, 7% within the San Juan/Gunnison River Basins, and 7% within the North Platte River Basin. This sampling resulted in the collection

of 748 sample sets. Samples were analyzed for a suite of constituents including metals, inorganics, nutrients and *E. coli*. Field parameters such as dissolved oxygen, pH, 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 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 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. Synoptic sampling was performed on many of the Lower Colorado River tributaries. This sampling is intended to characterize selenium contributions associated with smaller tributaries that, for the most part, have only been sampled infrequently. Sampling in the Lower Colorado watershed also included several tributary drains in the vicinity of Grand Junction that are impaired due to non-attainment of iron standards.

Several synoptic studies were also performed on the Cache la Poudre River between Fort Collins and the South Platte River. These studies were intended to identify and quantify selenium contributions to the mainstem and a number of tributaries. Additional sampling was not completed on Boggs Creek for selenium, uranium and zinc due to the absence of flow.

The Division initiated sampling of inflow and outflow at Horsetooth and Elkhead Reservoirs as part of an interagency project involving the Division of Parks and Wildlife and Colorado State University. While those parties are primarily interested in evaluating biomagnifications of mercury through the aquatic food chain, the Division is supporting their efforts through a \$319 grant and providing staff support. Data from the project will be used to support TMDLs for the two water bodies.

Seventeen reservoirs across the state were sampled for fish tissue mercury from July 1, 2011 through June 30, 2012. Of these 17 water bodies, two exceeded the action level for mercury of 0.3 ppm. The Division is in the process of issuing Fish Consumption Advisories for these sites (Big Creek Reservoir and Cheesman Reservoir). Fish Consumption Advisories are also in the process of being lifted from Boyd, Granby and Juniata Reservoirs due to most recent fish tissue data indicating mercury levels below the 0.3 ppm threshold. As of July 1, 2012, there are 23 fish consumption advisories for lakes and reservoirs in Colorado.

A study to target fish tissue sampling from 6 reservoirs in the southwest region of Colorado was initiated in June of 2012. Five of these reservoirs currently have Fish Consumption Advisories; however, recent fish tissue data is lacking from most of these water bodies. CDPHE is working together with Colorado Division of Parks and Wildlife and the



Southwestern Water Conservation District to sample up to 60-90 fish from each reservoir over the next 2-3 years. This will allow the Division to update the current Fish Consumption Advisories to reflect the most recent conditions at each of the reservoirs in this part of the state.

Arsenic and selenium were also analyzed in fish tissues from reservoirs across the State. The Division is currently working with the Department's Disease Control and Environmental Epidemiology Division to determine a risk assessment approach for both of these parameters.

A focused study by Colorado State University researchers continued in 2012 on two mercury impaired reservoirs on Colorado's 303(d) list (Horsetooth and Elkhead Reservoirs). Extensive biological and water quality data are being collected in a collaborative effort with the Colorado Division of Parks and Wildlife, the City of Fort Collins, and Northern Colorado Water Conservancy District. This project is to support TMDL development and evaluate ways to reduce mercury bioaccumulation through food web manipulation.

### C. Lake and Reservoir Monitoring

The Division continued its lake and reservoir sampling in FY 2012. The Division focused sampling efforts on the Upper and Lower Colorado River Basins in order to provide data for the upcoming triennial review. Seven lakes from the Upper/Lower Colorado were sampled three times each during the growing season. An additional 4 lakes from the Gunnison Basin were sampled one time each to assist with the determination of impairment. These lakes were previously on the Monitoring and Evaluation List and needed supplemental data in order to make attainment decisions. 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, a two-year study was initiated to sample high alpine lakes. Eight lakes from the Rawah Wilderness Area in the South Platte Basin were sampled one time each in July of 2011. The typical lake monitoring parameters listed above were tested from each lake along with additional parameters such as low level nutrients, zooplankton and physical habitat data. Nutrient data was collected in order to examine the influence of nitrogen and sulfate deposition on the high alpine lake environment. Zooplankton and habitat data was collected to provide insight into the possibility of the lakes supporting a fish population. Lakes in the Flattops and the James Peak Wilderness areas were selected for future monitoring in FY13.

Two multi-probes were deployed for the summer of FY12 with volunteer monitors interested in collecting water quality data from lakes. Division staff trained volunteers at Ridgway Reservoir and Ute Lake on how to use the multi-probes for the collection of pH, temperature, dissolved oxygen and conductivity throughout the profile of the water column. Profile data was collected monthly by volunteers at each site. Chemistry samples were also collected

from Ridgway Reservoir and analyzed by the Division on two occasions throughout the summer.

#### 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 targeted sampling of 303(d) and M&E listed stream segments (South Platte River headwaters and multiple locations in the Colorado River Basin, including Elkhead Creek and the Piceance Basin), revisiting a few reference sites where MMI scores were low, visiting trend sites in the Colorado River Basin and revisiting stations with high MMI scores to test the High Quality Water portion of Aquatic Life Policy 10-1. Also, staff conducted a special study to investigate the expected aquatic community above lagoon treatment facilities in the San Juan River Basin as part of an ammonia recalculation project. The Division also entered year two of a continuing pilot project whereby macroinvertebrate samples were simultaneously collected with water chemistry samples.

The Division worked collaboratively with and provided the necessary sampling equipment and training for the Bear Creek Watershed Association, the Grand County Watershed Information Network and the Roaring Fork Conservancy in order to collect macroinvertebrates samples at monitoring stations of particular importance to these watershed groups.

#### E. Nonpoint Source Monitoring Requirements

Grant requirements under the Clean Water Act Section 319(h) prescribe that measurable results be reported for nonpoint source projects that pertain to on-the-ground restoration and remediation. EPA defines measurable results as “restoring waters to partial or full uses and standards, or as a minimum, reducing pollutant loads such as nutrients and sediment.” To accomplish this, existing nonpoint source impacts need to be more accurately quantified in order to provide a water quality baseline from which to measure improvements. Surrogate measures, such as a record of the best management practices installed, can be used to evaluate the total project effort but do not provide data that equate to water quality improvements.

Few nonpoint source project sponsors have the expertise needed to prepare an adequate sampling and analysis plan that can be used to assess changes in water quality. As a result, the Division modified its approach to monitoring and evaluating nonpoint source projects. Starting with the 2004-2005 Nonpoint Source Section 319 project cycle, sponsors are required to provide more definitive water quality data to substantiate project outcomes during the terms of the project contract. Improvements such as a sampling and analysis plan template have been developed to assist project sponsors in complying with the increased emphasis on measurable water quality outcomes. This additional monitoring requirement has increased

staff workload. Staff is required to assess the data collection methods and to determine the effectiveness of nonpoint source management activities. Additional staff data evaluation capacity is needed to meet this increasing federal grant requirement.

A Measurable Results Project (MRP) continues to increase the Division's capacity regarding base-line and post-project monitoring of Nonpoint Source projects. The MRP assists the Division and project sponsors through the development of policies and practices that enable NPS projects to be monitored on multiple scales. The MRP identifies the effectiveness and efficiency of implemented BMPs to reduce targeted pollutants at the project level and is also able to monitor the success of the BMP(s) to address impairment issues at the segment level. The MRP has developed a toolbox of methods and analytical tools and approaches consistent with other WQCD data collection efforts so that NPS projects are evaluated with consistency across the program and are integrated in the WQCD regulatory process. Macroinvertebrates, water chemistry, sediment/nutrient loading, geomorphological (stability survey, pebble counts, etc.) are all components frequently employed by MRP. The MRP works with project sponsors in sampling and analysis project plan (SAPP) development, characterization of pre-project conditions, post-project follow up (beyond the timeline of the NPS 5 year contract with sponsors), and in data analysis to provide a comprehensive strategy to determining project effectiveness.

Nonpoint source management activities are implemented by using a focused watershed-based approach. This approach was initiated by synchronizing nonpoint source monitoring needs with the five-year, basin-monitoring schedule used to collect water quality data in support of the triennial review of basin classifications and standards. For FY2012, the MRP assisted four new projects (Turkey Gulch, Willow Creek, Florida River, and Beaver Creek) by assisting with the pre-project baseline water quality sampling. Additional projects received technical guidance, SAP development assistance, and monitoring help (in addition to the new projects - Hecla Junction, Coal Creek), such that appropriate data collection can be conducted during the contract term of the project. Finally, five historical NPS projects (Alamosa River, Eagle River, Rio Grande River, Alma, and Coal Creek) utilized MRP to collect ongoing and post-project water quality data to further document the benefit of the NPS BMPs. Two projects (Coal Reed, Upper Arkansas) were assessed with the MRP to gather water quality data to support documentation of a possible watershed restoration success story, which is an ongoing EPA PPA commitment.

#### F. Cooperative Monitoring Activities

To ensure that the maximum amount 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, and 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. In return, the Division assists other groups whenever possible as in 2011 when Division staff helped the Gunnison Valley Selenium Task Force coordinate sampling efforts in the Gunnison Basin for selenium.

As a charter 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 has initiated a 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 ([www.coloradowaterquality.org](http://www.coloradowaterquality.org)). Version 1.0 of the new water quality data map utility, powered by Google Earth technology, is currently under development and will allow users to find and download data. A Clean Water Act Section 319 grant from the Division continues to support this project.

#### G. Augmented Monitoring Funds

In order to upgrade state monitoring efforts and encourage implementation of the Monitoring and Assessment Strategies for States, the EPA placed an additional \$17 million in the Clean Water Act Section 106 state grants in Federal FY 2007. Colorado received \$374,000 of these "Monitoring Initiative" funds for a two-year period to facilitate the implementation of EPA's 10 Elements document and to conduct a state-wide Probabilistic Survey of water quality as part of a national project. The Division has earmarked these funds for additional monitoring of rivers and lakes, a high alpine lake monitoring study, increased data management capabilities, and a pilot volunteer lake monitoring program. This program continues to fund Colorado's effort to expand its monitoring and assessment capabilities.

In 2010 a position was created to design and formulate complex water quality investigations that entail the collection of additional surface water physical, chemical, and biological samples, and to assess the laboratory analysis data relative to applicable water quality standards and impairments throughout the state. The additional monitoring data generated by these activities will be used to 1) monitor surface water quality above and below point and nonpoint source control projects, and 2) monitor surface water quality prior to and after the construction of wastewater infrastructure projects that are funded using state revolving funds. The resulting data assessments will be used to evaluate the effectiveness of new and existing point and nonpoint source control projects. The information will also be used to prioritize areas for future point and nonpoint source control infrastructure investment.

In SFY12 data was collected for four projects to measure the water quality changes in receiving streams as a result of completion of wastewater infrastructure projects funded through the Water Pollution Control Revolving Fund. These studies included Boxelder Sanitation District's Wastewater Treatment Facility, City of Pueblo's DiIorio Water Reclamation Facility, Glenwood Springs' Regional Wastewater Treatment Facility, and the Town of Red Cliff's Wastewater Treatment Facility. Also in SFY12 four studies were conducted to evaluate water quality impacts and source identification in abandoned hard rock mines that contribute to impaired rivers and streams. These studies 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 Champion Mill, Illinois Gulch, multiple sites in the Uncompahgre drainage and the Waldorf Mine. Each of these assessments is at different points of completion.

## **IV. PERMIT PROGRAM**

### **A. Permit Backlog**

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

Approximately 1400 permits are included in the backlog measure. Since 2000, EPA's backlog reduction program has expanded to include individual process water and stormwater permits and general process water permits. Of these, approximately 350 are for facilities covered by individual permits and approximately 1050 are general permit covered facilities. The Performance Partnership Agreement between the Department and EPA for Federal FY 2011 (October 2010 – September 2011) included a goal that 80 percent of the permits included in EPA's backlog reduction program would be current (20 percent backlogged). The Division's best estimate of backlog as of October 1, 2011 was 69 percent current (31 percent backlogged), which was short of the 80 percent target. The PPA commitment for Federal FY 2012 (October 2011 – September 2012) is 80 percent current (20 percent backlogged), and the Division anticipates that by the end of September 2012, 55% percent of permits will be current (45 percent backlogged). Looking at these areas independently, individual permits are expected to be approximately 7 percent current (25 percent backlogged) at the end of September 2012. The backlog in general permits fluctuates greatly since the number of facilities under a single general permit varies from 13 to 280. The Division estimates that approximately 48 percent of general permits will be current (52 percent backlogged) at the end of September 2012. The primary reason that the backlog target will not be met for FY12 is that the Division was not able to issue all of the general permits that were targeted for renewal due, in part, to staff vacancy and reductions in permit writer positions.

Another important element of EPA's backlog reduction efforts is priority permits. EPA considers 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. As part of the Performance Partnership Agreement between the Department and EPA, the Division makes a priority permit issuance commitment. For federal FY 2011, the Division committed to issuing 46 of 66 high priority permits and was able to issue 49 by September 30, 2011. For Federal FY 2012, the Division committed to issuing 22 of 34 high priority permits and will get close to or meet that commitment. EPA is significantly revising the high priority permit measure for FY2013; therefore, trends are not presented in this year's report.

The Colorado Discharge Permit System Regulations require any domestic sewage system that discharges to groundwater to obtain a permit. 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 has been

implementing 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 owners, the Division is working with them to upgrade their systems prior to issuing new permits. Progress has been slow due to the lack of adequate compliance assistance resources to spend working with these small businesses (e.g., campgrounds, lodges) and towns. In addition, the engineering work to review and approve the required facility treatment upgrades was not anticipated and will exceed the Division's capacity to complete reviews within a reasonable time. The Division continues to make incremental progress in permitting these facilities.

While the challenges that exist today are large, they are expected to grow in the coming years for several reasons. Many of the general permits are due for renewal. These renewals will be resource intensive due to the large number of discharges covered under the general permit, and the fact that increasingly complex regulatory requirements must be met. This will require more analysis by the Division and increased contact with permittees. The Division must also implement new water quality standards adopted by the Commission, which requires additional analysis to issue the permits. Engineering reviews are required for new wastewater treatment facilities needed to meet discharge limits based on the new standards, and compliance assistance/assurance resources are needed to work with permittees, most of which are smaller municipalities or private entities.

#### B. Permits Required for Application of Pesticides

A 2009 federal appeals court decision resulted in a requirement for entities applying pesticides in or near waterways to obtain discharge permit coverage for their discharges by an October 31, 2011 court-ordered deadline. Since the Division has exclusive authority to issue NPDES permits for non-federal activities in Colorado, the EPA permit will not apply to the vast majority of applications in Colorado and the Division is required to issue a permit for the use of pesticides in the state.

In November 2011, the Division issued a short-term (2 year) general permit based on the final EPA permit. This will allow the Department time to seek through new state legislation permitting and compliance oversight resources to issue permits that require more robust applicant information for larger applicators and to conduct a reasonable level of compliance oversight. The general permit provides automatic authorization of pesticide applications statewide without the need to submit a permit application. Submittal of a Compliance Certification to the Division identifying the entity and the location (county) where pesticides are intended to be applied will be required. The Division is working with the Department of Agriculture to coordinate activities since that department is responsible for licensing many of the larger applicators under the Federal Insecticide, Fungicide, and Rodenticide Act. Finally, the Division is required to submit a report to the General Assembly (via the JBC) by November 1st on the need to implement a pesticide permitting program.

#### C. EPA's Clean Water Action Plan

EPA is finishing the fourth year of implementing its October 2009 Clean Water Act Action

Plan, which lays out the strategic direction for permitting, compliance oversight, and enforcement at the federal and state levels. The Plan includes three basic tenants. First, EPA must hold the states accountable to meet the performance requirements for delegation of the federally delegated NPDES permit program. Second, the Plan requires improved transparency of the compliance status of permitted facilities so that the public can weigh in on how violations are being resolved. Third, the plan requires that EPA and the states target compliance oversight and enforcement resources to the most important water pollution problems.

The Division conducted quarterly meetings with EPA Region 8 to continue enhanced dialogue and coordination of both permitting and compliance priorities and implementation. Work sharing continued in several program areas including the following: stormwater inspections at construction sites; stormwater inspections at industrial sites; auditing of Phase 1 MS4 permittees; pretreatment permitting, auditing, and inspection; biosolids inspections.

#### D. Addressing Single Event Violations

The Division completed the evaluation of its existing and needed processes and associated electronic tools to measure, track, and appropriately escalate unresolved field-discovered single event violations (SEVs) in accordance with its grant agreement with EPA. The project has the following objectives:

1. Establishment of standard data collection methods for all work units collecting violation data in the field.
2. Automate work flows in the Division's SharePoint (SPIGOT) tracking and work flow management system.
3. Decision points in the work flows that reflect Division-adopted policies for resolving violations.
4. Transmittal of violation data to the EPA ICIS database.
5. Make available reports from ICIS or SPIGOT to Division programs in order to facilitate compliance activities.
6. Training of managers and staff to implement the new processes and work flows; and making documentation available for future training.

The work flows have been developed and are awaiting improvements in its SharePoint system (Spigot) before being implemented. The remaining items are being considered by the Division IT unit in the development of a support contractor scope of work. The grant ends in March 2013, and at that time, the Division will evaluate the next steps to manage these violations in a way that produces the best measurable outcomes.

#### E. Environmental Agricultural Program

The Environmental Agriculture Program administers regulatory, permitting, compliance assistance and compliance assurance activities for animal feeding operations (AFOs), concentrated animal feeding operations (CAFOs - i.e., large dairies, feedlots, poultry facilities) and housed commercial swine feeding operations (HCSFOs). The Ag 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 11 individual HCSFO permits, 70 CAFO permits, 117 registered CAFOs and hundreds of AFOs. The program administers the Water Quality Control Commission Regulation No. 61, the Colorado Discharge Permit System Regulations; Regulation No. 81, the Animal Feeding Operations Control Regulation; Regulation No. 66, the Financial Assurance Criteria Regulation for Colorado Housed Commercial Swine Feeding Operations; and Air Quality Control Commission Regulation No. 2, Part B, Odor Emissions regulation for HCSFOs.

During FY 2012, the Ag Program completed a total of 524 inspections at animal feeding operations. Of these inspections, 54 were conducted at CAFOs and 470 at HCSFOs. CAFO inspections covered 19 permitted CAFOs, 23 unpermitted CAFOs, one medium AFO and nine other permitted and unpermitted CAFOs to verify compliance with corrective actions identified during the previous inspection year. The HCSFO inspections included 188 water quality protection and 282 odor inspections.

Colorado's CAFO general permit was revised by the Ag Program during FY 2012, along with a Nutrient Management Plan template for livestock producers. Once final, the Ag Program held four workshops to train permitted CAFOs on the nutrient management plan template and associated new requirements. Starting in April 2012, the program began reviewing and certifying permitted CAFOs under the new general permit. The renewal of 70 CAFO permits will continue through the end of FY 2013.

Additional program goals in FY 2013 include conducting stakeholder meetings in advance of a Regulation No. 81 rulemaking slated for October 2013; conducting an outreach effort with horse AFOs to reduce complaints and improve compliance with Regulation No. 81 manure management practices; continued coordination of Colorado's agricultural industry around nitrogen deposition concerns in Rocky Mountain National Park; and continued implementation of program improvements to maintain an efficient and effective program that meets stakeholder expectations and supports the department's strategic plan.

#### F. Water Quality Information Systems

The Division currently utilizes a Microsoft 2007 SharePoint (SPIGOT) platform to share information and track workflows. During 2010 and 2011 the Division has worked closely with OIT staff and contractors to migrate and rebuild the current functionality into Microsoft 2010. The conversion effort is expected to "go live" on October 1, 2012.

The Division has successfully implemented a pilot program for electronic submittal of discharge permit monitoring data. This information is submitted through EPA's NetDMR system. The current permitted universe requiring a DMR is 1,346. There are currently 30 permits in production and another 123 permits in test for a total of 11.4% participating in NetDMRs.



The Division is contracting with an IT consultant to develop and implement a solution for capturing, tracking, and responding to Single Event Violations (SEVs). This system will track both clean water and drinking water violations.

Additionally, EPA requires that states maintain a local database for environmental information that has the ability to upload information into the EPA national database. EPA has provided this database in the past, but will no longer provide this support to the states in the future. Colorado has acquired a new system to manage this data (EQUIS). In addition to meeting EPA needs, this system will provide much more capability to manage data internally, to have third parties submit information for WQCD use, and to make our information available to the public in a variety of forms. Testing of the EQUIS system is underway. The identification of all of system requirements has been completed; database design and initial testing are currently underway. Database development and deployment is an extremely resource intensive effort, and timely support of all of the Division's programs' information management needs continues to be a significant problem.

## **V. INFRASTRUCTURE FINANCING PROGRAMS**

### **A. Water Quality Improvement Fund**

During the 2006 legislative session the Colorado General Assembly created and the Commission approved the Rules for the WQIF (CRS 25-8-608[1.5] and Regulation #55). The WQIF was created to provide grants to local communities/entities to improve water quality, health and safety. The source of revenue to the fund is penalties assessed on polluters who have committed water quality violations.

House Bill 11-1026 amended the statute to authorize grants for stormwater management training and best practices training to prevent or reduce the pollution of state waters. On February 13, 2012, the Commission adopted a revised version of the existing WQIF Rules (5 CCR 1002-55) adding an additional category for stormwater management training and best practices training.

During the 2011-12 State Legislative session, the Division received additional spending authority of up to \$600,000 for construction related activities and an increase to three years for expenditure of these funds. Therefore, the total spending authority authorized to the Division is \$767,000 out of the fund. In response to these changes, the Commission conducted an additional rule making hearing on June 11, 2012 and adopted a revised version of the existing WQIF Rules (5 CCR 1002-55).

In accordance with the statute and Rule 55, the WQIF "shall" be expended for the following purposes:

Category 1 - Stormwater management training and best management practices training to reduce the pollution of state waters.

Category 2 - Projects that improve the water quality in the community or water body which has been impacted by a water quality violation.

Category 3 - Planning, design, construction, or repair of stormwater projects and domestic wastewater treatment facilities identified on the current fiscal year's Water Pollution Control Revolving Fund Intended Use Plan.

Category 4 - Nonfederal match funding for nonpoint source projects.

The WQIF Rules cap the amount available for each grant category. The following allocations from the Fund will be made for SFY 2012-13:

- Category 1 - For State Fiscal Year 2012-13 the Division will allocate up to \$150,000 of available funds with no one project initially receiving more than \$50,000. If the entire \$150,000 has not been fully utilized, the Division will allocate the remaining Category 1 funds within the year per its prioritization procedures to eligible Category 1 project(s) which may result in certain projects ultimately receiving more than \$50,000. For subsequent years thereafter, up to \$50,000 of available funds will be allocated.
- Category 2 - 10% of available funds following allocations to Category 1 projects.
- Category 3 - 60% of available funds following allocations to Category 1 projects; no one project can receive more than 25% of the available funds allocated to this category.
- Category 4 - 30% of available funds following allocations to Category 1 projects.

As part of the 2011-12 legislative action, 0.7 FTE was allocated to the Division for administering the Stormwater Excellence program. This position has been filled as of August 1, 2012. Due to the historical limited spending authority and the compressed grant period, only 12 grants have been awarded since the inception of the program despite significant need in Colorado communities. However, this is expected to increase significantly with the increased spending authority of the program. Since the inception of the WQIF, \$3.184 million in penalties has been paid into the fund. The following table illustrates the WQIF grants awarded to date.

The following Water Quality Improvement Fund grants have been awarded to date:

Entity	Project Description	Total Project Cost	WQIF Grant Award
<b>2007</b>			
Pueblo City - County Health Department	The project provided educational outreach to community members and stakeholders on best management practices to minimize the potential water quality impacts of leaking or failing septic systems and agricultural runoff.	\$39,730	\$28,885
Palmer Lake Sanitation District	Wastewater collection line expansion to eliminate health hazards from failed septic systems. Failure to repair these systems would likely result in pollution of Monument Creek/Fountain Creek.	\$325,000	\$21,664
Colorado Foundation for Agriculture	This project encourages middle school students to become watershed defenders and protect Colorado's waters from runoff pollution. It provides them with information on sources of water pollution and encourages personal action to prevent non point source pollution.	\$75,000	\$21,655.
<b>2008</b>			
City of Commerce City	Commerce City storm water staff coordinated with permitted industrial dischargers to develop a spatial database. This database will allow Commerce City staff to begin identifying pollutants within their jurisdiction. This will allow the City to focus water quality mitigation activities on specific pollutant issues and at specific storm water outfalls.	\$38,000	\$36,072
Idalia Sanitation District	Construction of wastewater treatment plant improvements that will minimize the increasing levels of nitrates in the Ogallala groundwater. Without these improvements contamination of drinking water wells would have been likely.	\$396,869	\$27,054
League of Women Voters of Colorado Education Fund	The project will print the "Understanding Water Quality Activities Book" which will be used in many elementary and middle school classrooms as the text book on water. This book will also complement many of the science kits being used in elementary schools. The objective of the book is to educate on pollution runoff and its prevention	\$60,000	\$30,335
<b>2009</b>			
Department of Natural Resources	The goal of this project is to reduce the amount of pollution, in the form of excess sediments and chemicals, reaching the Arkansas River. The WQIF helped implement the public education component of this project by producing professional grade signs that will be posted along the river. The signs will inform the public about the pollution concerns and measures that have been taken to prevent the pollution from harming the water quality in the river.	\$796,500	\$24,980
Colorado Foundation for Agriculture	This project will incorporate all the pollution prevention educational materials that have been produced over the years into the Colorado Content Standards. The educational materials have been partially paid for by CDPHE NPS funds and WQIF and have been incorporated in and enriched the science curricula of middle and high schools in Colorado.	\$286,000	\$8,421

<b>2010</b>			
City of Delta	This project is the first phase of a \$6.9 million project at the City of Delta's wastewater treatment facility that has a capacity of 2.45 million gallons per day. The overall project maintains primary clarification, adds a new parallel rotating biological contactor (RBC), provides a new secondary clarifier, and uses an innovative effluent river diffuser to meet water quality standards. The Phase 1 Effluent Diffuser project has an estimated capital cost of \$999,000 and additional phases will be pursued in the future to upgrade the remaining. As a result of the project the plant will meet revised discharge limits of E. Coli, total residual chlorine, total ammonia, and dissolved copper and selenium limitations.	\$999,000	\$33,400
Woodmen Hills Metro District	This project addresses the Paint Brush Hills Wastewater Treatment Facility which is a complete-mix lagoon process utilizing three lagoons and is not currently able to consistently meet BOD removal requirements largely due to a lack of detention time. This project includes placing an existing out of service pond (#3) into service in order to extend detention time and provide greater BOD reduction. Components include placement of a synthetic liner, equipping the pond with surface aerators and associating piping and inlet/outlet appurtenances. As a result the project will help meet permit conditions.	\$400,000	\$44,500
<b>2011</b>			
Mountain Water & Sanitation District	The project includes the development of a preliminary engineering report and other engineering design activities for meeting future discharge permit limits of BOD, TSS, ammonia, and nitrogen, which will improve the overall condition of the watershed. The existing RBC plant is nearing the end of its design life and will not be able to meet future discharge permit limits.	\$2,300,000	\$44,534
Hot Sulphur Springs, Town of	This project consists of improvements or replacement of the aeration system and improvements to the existing wastewater lagoon treatment system, resulting in benefits of reduction of BODs and solid loading into the Colorado River. The Town is also responding to C&D Order MO-100426-1 of April 26th, 2010. This segment was impacted by a WQ violation due to improper management of SW by Colorado Regional Construction.	\$550,000	\$33,401

The 2012 WQIF grants have not been awarded as of this report, the Request for Application was announced 8/1/2012-8/31/2012 and it is anticipated the highest ranking projects will be awarded no later than 10/1/2012.

#### B. American Recovery and Reinvestment Act

The Division's Drinking Water State Revolving Loan Fund provided \$32,290,880 in American Recovery and Reinvestment Act (ARRA) funds to twenty two public water systems. Projects receiving funding from ARRA were identified as the state's highest priority drinking water infrastructure projects. In addition, \$687,040 ARRA grants were provided to twenty two public water systems for various activities including planning, design and CO-RADS pilot projects. All ARRA funds were required to be under contract by February 17, 2010; the Division had all ARRA dollars under contract by December 31, 2009, far exceeding the required deadline. As of August 2012, nineteen ARRA drinking water construction projects have been completed, and 98% of ARRA drinking water funds have been expended. As of August 2012 the average number of jobs created is 44 with ARRA related drinking water infrastructure projects. The remaining three drinking water infrastructure construction projects are anticipated to be completed by October 2012.

The Water Pollution Control State Revolving Fund provided over \$30 million in ARRA funds to 12 of the state's highest priority wastewater/water quality projects. All wastewater related ARRA dollars were under contract by September 30, 2009 far exceeding the required deadline. As of August 31, 2012, eleven of the twelve projects were completed and 100% of the ARRA funds have been disbursed. The remaining project remains active as a result of utilizing its own funds to complete the project. As of August 2012 the average number of jobs created is 42 with ARRA related wastewater infrastructure projects. More than \$15.6 million was awarded in form of principal forgiveness; the remaining funds were loaned out at an interest rate of 0%. Colorado awarded 25% of the ARRA funds to wastewater/water quality projects that implemented green components of the project. The final wastewater infrastructure construction project is anticipated to be completed by October 2012.

## VI. CONCLUSION

The Division continues to 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 identifying work processes (e.g., permitting and facility design) to be evaluated through the Lean process, a process designed to make systems more efficient by reducing or eliminating waste. This may be done with the involvement of stakeholders where appropriate.

The Division continues to experience a growing resource gap based on increased workload due largely to population growth and the requirement to implement new federal and state requirements. The Division is evaluating its program activities to set new priorities that will deploy resources to meet the most pressing water quality problems/needs. Water quality issues that are not deemed to be priorities will likely not be addressed.

## APPENDIX A

### **Water Quality Forum Work Groups**

(Last Updated September 26, 2012)

1. Arsenic Standards
2. Design Criteria for Potable Water Systems
3. Discharger Specific Variances
4. Drinking Water Regulations
5. E. coli Issues
6. MS4 Issues Forum
7. Onsite Wastewater Treatment System Management
8. Permit Issues Forum
9. Practical Quantitation Limits Guidance
10. Section 303(d) Listing Methodology
11. Stormwater Construction Compliance (HB-1119)
12. Water Reuse

Note: For the latest work group status, please visit the WQCD website at <http://www.colorado.gov/cdphe/wqcd>.