

ANNUAL REPORT
to the COLORADO WATER QUALITY CONTROL COMMISSION
from the HAZARDOUS MATERIALS and WASTE MANAGEMENT DIVISION
COLORADO DEPARTMENT OF PUBLIC HEALTH and ENVIRONMENT

SB 181 Implementation
COMPLIANCE WITH WATER QUALITY STANDARDS AND CLASSIFICATIONS
for the Fiscal Year Ending June 30, 2010

December 2010

This is the annual report provided to the Colorado Water Quality Control Commission (Commission, WQCC) by the Hazardous Materials and Waste Management Division (HMWMD). This report documents HMWMD activities that protect water quality in Colorado, support the mission of the Commission, and implement state water quality standards.

The paragraphs that follow present issues and examples of sites where releases have impacted ground water quality and where HMWMD decisions and actions concerning water quality classifications and standards have established clean-up criteria. There are numerous other examples, not chosen, where the state water quality standards have been used to determine the need for further site investigations or remediation to address chemical releases to the soil, ground water or surface water. For any site, added information that is of interest or use to members of the Commission will be provided on request.

GENERAL

Ground Water No Further Action Determinations - Last year's report discussed how there were gradual evolutionary changes underway within the HMWMD in response to the difficulty cleaning up recalcitrant chemicals (particularly the chlorinated volatile organic compounds) in certain hydrogeologic environments to meet strict numeric standards without expending considerable resources, far out of proportion to the threat posed by the contamination. This is more of a concern in the current economic climate where many smaller facilities are struggling to find the resources to perform fundamental site characterization activities, much less commit to open ended commitments to monitor small changes in ground water quality as concentrations progress towards state established standards. Bankruptcy and site abandonment are a reality at some of the sites we regulate.

Staff within the HMWMD have spent the last year discussing the subject, drafted and subsequently modified on several occasions a policy and guidance document on the subject of whether or not to grant NFAs for ground water at low threat sites. During this process representatives of the HMWMD have met with both the Water Quality Control Commission (the Commission) and Water Quality Control Division (the WQCD) to ensure that principals and concepts outlined in the documents would not conflict with existing regulations and the mission they envision the HMWMD, an implementing agency, should achieve in its environmental cleanups. The product of this nearly two year effort is a policy and guidance on the subject of making NFA determinations at low-threat sites. The process outlined in these documents is meant to deal with situations where a) residual ground water contamination poses little to no threat to human health and the environment and b) the activities undertaken at the site will allow for eventual achievement of the Colorado Ground Water Standards or other Division approved remediation goals within a reasonable period of time. This will allow both the HMWMD and parties responsible for cleaning up releases to better spend their time and resources on other important matters awaiting our attention.

The "Policy for a 'No Further Action' Determination When Contamination Remains Above the Colorado Ground Water Standards" and "Guidance for the Closure of Low-Threat Sites with Residual Ground Water Contamination" was made available for public review and comment in August 2010, the comment period ending on September 30, 2010. By the time the HMWMD

appears before the Commission in early December 2010 for its annual SB 181 informational briefing, it is highly likely that public comments received will have been reviewed, changes made to the draft documents and possibly even finalized. During the process, the HMWMD will ensure that both the Commission and WQCD will have been informed of any pending decision to finalize and implement this new approach to dealing with low threat sites.

Concurrent with the actions described above, attorneys and environmental consultants tasked with representing the dry cleaning community in Colorado are working together to develop a program to collect funds that will be used exclusively for the cleanup of these facilities. Nearly two dozen other states around the country are implementing state run dry cleaner cleanup programs. Things considered include: how much money can be realistically collected; what fees will be assessed in order to support the fund; what activities will be paid for out of the fund; eligibility requirements; and who will administer the program. Discussions have reached a point where the HMWMD will turn to the Rocky Mountain Fabricare Association and their stakeholders to support new legislation to create such a program. The benefit of such a program is that more money would be available to these facilities that could be used to more aggressively investigate and remediate contaminant sources degrading ground water quality.

SOLID AND HAZARDOUS WASTE PROGRAM

Solid Waste:

No major changes have been made in the Solid Waste Program that alters the way in which HMWMD applies Colorado's water quality standards and classifications. HMWMD is still working to upgrade our solid waste database to better track facility analytical data and compliance data. The Solid Waste Program continues to implement water quality standards and classifications in remedial cleanup actions, enforcement actions, and design and operations reviews for new or existing facilities.

Specific Site Summaries:

Black Mountain Solid Waste disposal facility had a release of benzene and brine contaminated wastewater to ground water several years ago that occurred because of a ripped impoundment liner. They have been very recalcitrant ever since in complying with our requests to characterize and remediate the ground water plume. We have issued two compliance advisories and have now filed a complaint in Mesa County District Court to compel compliance. In addition, on September 16, 2008, the Mesa County Board of County Commissioners temporarily revoked the facility's conditional use permit and certificate of designation until the ground water remediation system is installed and approved by HMWMD. On August 24, 2010 the Mesa County Commissioners issued a resolution to allow the facility to reopen on a limited basis. They may receive exploration and production waste into only impoundment #5 until the other impoundments comply with the Section 17 requirements. The judge ruled to combine the two lawsuits filed on the previous and current owners of the facility. Combining the lawsuits will save taxpayer time and expense. The trial is currently set for April 2011. The new owners are working diligently to come into compliance with the order requirements, and hope to settle prior to the court date.

Hazardous Waste:

No major changes have been made in the Hazardous Waste Program over the last year, which is Colorado's equivalent of the federal Resource Conservation and Recovery Act, Subtitle C (RCRA) program. There have been no recent significant changes in implementing regulations that alter the way in which HMWMD applies Colorado's water quality standards and classifications for discharges to state waters, including ground water. However, as was noted earlier in this report, draft policy and guidance on the subject of granting "no further action" requests at low threat sites where ground water contamination is present above state standards is in the process of being finalized. These two documents play a role in the closure of a small number of facilities in the coming years.

A review of the Hazardous Waste Program and the various mechanisms contained within the Colorado Hazardous Waste Statute and Regulations governing the protection of state waters may be found in the document entitled "Hazardous Materials and Waste Management Division Report Describing How Programs Are Assuring Compliance With Water Quality Standards and Classifications" (April 16, 1991). As discussed in that report, water quality standards are used as clean-up criteria unless a site-specific demonstration can be made showing that alternate concentration limits are equally protective of human health and the environment. The ability to establish site-specific ground water standards is limited to regulated units at facilities that are permitted to treat, store or dispose of hazardous waste. The regulatory ability to establish unit-specific alternate concentration limits does not apply to facility-wide corrective action. Nor does it apply to facilities that do not have or are not seeking a permit to treat, store or dispose of hazardous waste (i.e., illegal disposal sites). In these situations, the facility has the option of developing site-specific ground water standards, but they must do so by petitioning the Water Quality Control Commission for the adoption of the site-specific standard. Otherwise they must use the established standards as targets for the cleanup of releases.

The Hazardous Waste Program's Corrective Action Guidance Document, published in May 2002, provides an overall implementation framework and model scopes-of-work for site characterization, interim actions, evaluation of remedial alternatives and remedy implementation. Section 5.1.3.1 of the Corrective Action Guidance Document states that clean-up standards for ground water are established in "The Basic Standards for Ground Water" of the Water Quality Regulations (Section 3.11.0 in 5 CCR 1002-8). The guidance also informs facilities that they have the option of developing site-specific ground water standards and petitioning the Water Quality Control Commission for their adoption.

Specific Site Summaries:

Teller Arms Shopping Center

The following discussion is an example that may help illustrate how the draft "Policy for a 'No Further Action' Determination When Contamination Remains Above the Colorado Ground Water Standards" and "Guidance for the Closure of Low-Threat Sites with Residual Ground Water Contamination" may be implemented after they are finalized. The site in question is located in Grand Junction with one of the tenant spaces formerly occupied by AAA Martinizing and Econo Wash. Soil and ground water samples collected in 2007 determined that the dry cleaning solvent

HMWMD receives new data showing that the PCE concentration in MW-8 has fallen below the state standard and the small pocket of soil contamination beneath the utilities has been remediated.

The process outlined in the draft “Policy for a ‘No Further Action’ Determination When Contamination Remains Above the Colorado Ground Water Standards” and “Guidance for the Closure of Low-Threat Sites with Residual Ground Water Contamination” will include additional requirements that will further ensure that any future ground water NFA decision will be protective while natural attenuation is allowed to cause contaminant concentrations to fall below applicable standards.

RADIATION PROGRAM

The Radiation Program, in part, regulates the operational activities and cleanup of current and former uranium processing, mining, and disposal facilities. It works to isolate the radioactive and heavy-metal wastes and by-products produced in Colorado from the public and environment. This program works in conjunction with CERCLA programs in the Hazardous Materials and Waste Management Division (HMWMD) and implements the Water Quality regulations for surface and ground water at those sites. The Program works with the Division of Reclamation, Mining and Safety and with the Oil and Gas Conservation Commission on issues relating to treatment or monitoring of radioactive materials in ground water. The Program is also currently evaluating the first new application in over 25 years in the US for a conventional uranium mill. We will issue our decision in January 2011.

NORM/TENORM: Program staff continued to work closely with Water Quality Control Division (WQCD) staff and Solid Waste Unit staff to implement the guidance document to address proper management and disposal of water treatment residuals that may contain elevated levels of naturally occurring radioactive material (NORM) or technologically enhanced naturally occurring radioactive materials (TENORM). HMWMD and WQCD staff continue to work together to assess compliance for some of the smaller public water supply systems to help them meet treatment requirements while adequately addressing waste management issues for water treatment residuals. There has been an increase in the number of information requests relative to NORM/TENORM in oil and gas production. The HMWMD is evaluating requirements for testing of produced water for radionuclides to get a better understanding of the scope of the issue.

Lincoln Park / Cotter, Fremont County: Uranium and molybdenum continue to be monitored in ground water in the Lincoln Park Water Use Area (Operable Unit 2) near the Cotter / Cañon City uranium mill tailings site. The Division-approved plan for soil remediation in the Old Ponds Area in the mill site (Operable Unit 1) has been implemented. Approximately 240,000 cubic yards of contaminated soil have been excavated. This soil was a major source of ground water contamination at the Cotter Mill facility. Ground water concentrations of uranium and molybdenum have dropped in waters down gradient of the Old Ponds Area. The investigation into the source, extent, and character of uranium in ground water found moving north-northwest from the Cotter facility is being performed. Wells are being drilled to define where contaminated ground water is moving in Sand Creek. Some of these wells will be used in a system to stop the flow of

contaminated ground water into Lincoln Park. The Cotter facility is undergoing full decommissioning in addition to addressing ground water contamination.

UMETCO Uravan: Complete remediation of the Uravan site was accomplished in 2008. Alternate Concentration Limits (ACLs) are in place for several contaminants in ground water. A long-term program of ground water and surface water monitoring is being developed to demonstrate that the ACLs continue to be protective of the river and that contaminant concentrations are stable or decreasing now that the source has been removed. At license termination and deletion from the National Priorities List (Superfund), the facility will be transferred to the U.S. Department of Energy for long-term surveillance.

Schwartzwalder Mine, Jefferson County: The Radiation Control Program licenses the treatment system being used to clean uranium-contaminated ground water before it enters Ralston Creek.

Department of Energy atomic blast sites, Garfield and Rio Blanco Counties: The Radiation Control Program advises the Oil and Gas Conservation Commission on the monitoring and testing of ground water for radioactive materials from gas wells being drilled near the Rulison and Rio Blanco atomic blast sites.

REMEDIATION PROGRAM

Superfund Activities: The Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund) requires that remedies chosen to address hazardous substance releases must either meet existing standards or, in limited cases, waive those standards. During each remedy selection process, the Hazardous Materials and Waste Management Division (HMWMD) submits to the United States Environmental Protection Agency (EPA) a list of state regulations that are either directly applicable to a particular cleanup situation or which are relevant and appropriate requirements (ARARs). Water quality standards are identified after consultation with the Water Quality Control Division (WQCD). The following site summaries are provided for sites that, over the past year, had new activity related to compliance with water quality standards. Information on other Superfund sites can be provided on request.

The Central City/Clear Creek study area encompasses much of the Clear Creek watershed, from the continental divide to Golden. Over the years, work along the main stem has been completed, including the capping of mine waste piles and the construction of a water treatment plant in Idaho Springs to treat the Argo and Big Five tunnel discharges and Virginia Canyon groundwater. Work continues on the North Fork, with twenty waste piles addressed through removal or erosion control measures, and construction of an on-site repository and sediment control dams. This project has been implemented over three years and will be completed in late 2010. The Record of Decision also calls for the active treatment of the Gregory Incline and National Tunnel discharges and Gregory Gulch alluvial ground water in Gilpin County. HMWMD is hiring design services for the new plant. The plant will be sited just downstream of Black Hawk and construction is anticipated to begin in 2012.

The Colorado Water Quality Control Commission (WQCC) conducted its triennial review of the South Platte River Basin, including Clear Creek, in June of 2009. In the months preceding the June 2009 rule-making hearing, HMWMD worked with the WQCD, EPA, and stakeholders within the Clear Creek basin to develop changes to the classification and numeric standards for several segments of Clear Creek impacted by Superfund activities within the basin.

Data collected during long-term monitoring of the Superfund Site were used to support proposed changes to Regulation 38¹, including development of several new stream segments and changes to the numeric zinc standards in several segments. Re-segmentation of Clear Creek included the following:

Clear Creek 2a: This segment was created to encompass the mainstem of Clear Creek, including all tributaries and wetlands, from the I-70 bridge above Silver Plume to a point just above the confluence with West Fork Clear Creek, except for specific listings in Segments, 3a and 3b. The re-segmentation of Segment 2 was necessary in order to better represent differences in water quality between this segment and Segments 2b and 2c.

Clear Creek 2b: This segment was created to encompass the mainstem of Clear Creek, including all tributaries and wetlands, from the confluence with West Fork Clear Creek to a point just below the confluence with Mill Creek, except for specific listings in Segments 4 through 8. The re-segmentation of Segment 2 was necessary in order to better represent differences in water quality between this segment and Segments 2a and 2c.

Clear Creek 2c: This segment was created to encompass the mainstem of Clear Creek, including all tributaries and wetlands, from a point just below the confluence with Mill Creek to a point a point just above the Argo Tunnel discharge, except for specific listings in Segments 9a, 9b, and 10. The re-segmentation was necessary in order to better represent differences in water quality between this segment and Segments 2a and 2b.

In addition to re-segmentation, the WQCC adopted site specific zinc standards for several Clear Creek segments. Recalculated acute and chronic zinc standards were adopted for Clear Creek Segments 2a, 2c, 3a, 3b, and 11. The recalculated equations were developed to be protective of the aquatic community which is expected to occur in the Upper Clear Creek Watershed. The HMWMD is collaborating with EPA, WQCD, and Colorado Division of Wildlife to collect additional data for Segment 2b to inform the next South Platte River Basin triennial review.

At the Summitville Mine site in Rio Grande County the state and EPA continue to treat water in the old water treatment plant. This plant does not have sufficient capacity to treat all water in above average years. In 2007 the WQCC approved revised aluminum standards on segments 3b and 3c of the Alamosa River, in recognition of high background aluminum concentrations. This change in standards allowed for the redesign of the new treatment plant which is currently under construction. In 2009 HMWMD received “stimulus funding” to begin construction of the new treatment plant. Construct began in September 2009, and is targeted for completion in 2011. Construction of the new plant will allow us to meet standards in segment 3b and 3c of the Alamosa River.

Voluntary Cleanup and Redevelopment Activities: The Voluntary Cleanup and Redevelopment Act (VCRA) staff continues to encounter issues related to surface and ground water contamination.

¹ Regulation 38 – Classification and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smokey Hill River Basin

The staff works closely with the WQCD on each site-specific decision to assure compliance with the appropriate regulations. Meeting ground water standards is an ongoing issue at VCRA sites. Since these sites are most often the subjects of real estate transactions, the buyers and sellers try to assure that the cost of cleanup does not make the economics of the deal unfeasible. Therefore, most clean-up plans focus on source control or removal rather than treatment of contaminated ground water plumes. The VCRA staff strives to assure that ground water standards are met at the property boundary. HMWMD requires any applicant that exceeds ground water standards at the property boundary to apply to the Water Quality Control Commission for a variance, a site-specific standard, or a change in point of compliance (unless this will only be temporary during cleanup activities and the applicant can show that no surface water body is impacted and no exposure is occurring during this period). This assures that the program complies with water quality regulations.