Annual Report

The Hazardous Materials and Waste Management Division

April 1, 2022

COLORADO

Hazardous Materials
& Waste Management Division

Department of Public Health & Environment

Tracie White, Director
The Hazardous Materials and Waste Management Division

As the Hazardous Materials and Waste Management Division director, I am pleased to share this annual report. It exemplifies our division's dedication and commitment to upholding and improving our community's health and safety. Specifically, the report discusses accomplishments in the areas of environmental justice, the implementation of new rules, compliance assistance, enforcement, and environmental cleanup. Our division mission, "to improve the quality of the environment and public health for the residents of Colorado by continuously improving our efforts to ensure proper management of hazardous materials and waste," is the driving force behind the work we do everyday.

This report includes division highlights from the state fiscal year 2020-2021, followed by relevant statistics for each program within the division. These statistics are a reflection of the steadfast innovation, collaboration, and dedication of our staff, stakeholders, and partners, as we collectively work toward safeguarding public health and the environment for all Coloradans for generations to come.

The Hazardous Materials and Waste Management Division (division, HMWMD) includes five programs: The Administration Program, Radiation Control Program, Solid Waste & Materials Management Program, Remediation Program, and Hazardous Waste Program. Below are division-wide highlights from the state fiscal year 2020-2021, which represent accomplishments and initiatives across the various programs within the division.

Environmental Justice Initiative

The division is committed to systematically addressing health equity and environmental justice through the administration of its programs, as well as ensuring decisions impacting the environment are made with the participation of those affected. On July 2, 2021, Governor Polis signed the Environmental Justice Act (HB21-1266) into law, which commits to strengthening environmental justice in Colorado. It prioritizes the reduction of environmental health disparities in disproportionately impacted communities. The division partnered with the newly-formed Environmental Justice Program within the Colorado Department of Public Health and Environment (the department) on a number of important issues ranging from providing financial assistance and free test kits to low-income families for radon mitigation, to creating more opportunities for disproportionately impacted community members to engage in environmental cleanup decisions that directly affect where they live, learn, work, and play. Further, the division actively administered five loans through the Brownfields Revolving Loan fund that provided $4.6 million in funding to address contaminated sites in disproportionately impacted communities. The division continues to work with the Environmental Justice Program to better listen to and understand all residents of Colorado, especially those who may experience disproportionately-higher levels of environmental health harm.

PFAS rule changes

In 2021, Colorado amended the Colorado Hazardous Waste Regulations (6 CCR 1007-3) to adopt a Registration and Certificate Program for facilities and entities using or storing Class B firefighting foam containing per- and polyfluoroalkyl substances (PFAS). Specifically, a new Subpart Q was added to Part 267 of the regulations. This new regulation applies to all persons that store or use Class B firefighting foam containing intentionally added

PFAS, requiring them to register and obtain a certificate from the division. When testing fire systems using these PFAS-containing foams, the regulation also requires the following: (1) capture the spent foam in containment systems, and (2) store the spent foam in containers meeting certain requirements prior to off-site shipment for disposal.

The mandatory online registration program for these entities requires basic information about the fire department or facility and the quantities and configurations of the PFAS-containing foam storage. Upon review of the information, the division issues a Certificate of Registration through the online registration program.

TENORM Regulatory Initiative

On November 18th, 2020, the State Board of Health adopted a new residual management rule titled Part 20, "Registration and Licensing of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)", as required by Senate Bill 18-245.

TENORM is a naturally occurring radioactive material whose radionuclide concentrations are increased by, or as a result of, past or present human practices. TENORM may be found in the residuals created by wastewater and drinking water treatment, oil and gas exploration and production, and other processes that have the potential to concentrate metals or other constituents. This new rule advances Colorado's health and establishes environmental protections by ensuring that the handling, transportation, beneficial use, and disposal of TENORM is conducted in a safe and consistent manner that protects workers, members of the public, and the environment. The department is working with stakeholders by hosting regular forums to develop compliance guidance associated with the new rule.

Low Income Radon Mitigation Assistance Program

The division's Low-Income Radon Mitigation Assistance (LIRMA) program provides free radon mitigation systems for individuals meeting certain income limits, based on county of residence. Funding for this program comes from Colorado Revised Statute 25-11-114, passed in 2016 to provide mitigation assistance annually. As of February 2022, 28 contractors have qualified to participate in the program. The division has received 701 homeowner applications since inception of the program in 2018, and 269 homes have qualified. Contractors have mitigated 251 homes, and 18 homes are in the process of being mitigated. The program has saved participating residents between $495 and $4,435 on mitigation systems, improved indoor air quality, and reduced exposure to potentially harmful levels of radon gas. In 2021, contractors mitigated 83 homes at an average cost of $1,736.

Peterson Air Force Base

The Air Force, in partnership with the division, initiated the Remedial Investigation for PFAS at Peterson Air Force Base (AFB) in 2020. This effort is funded and ongoing through 2022. The primary intent of the Remedial Investigation is to define the complete nature and extent of PFAS contamination both on and off the installation. The division was integrally involved in planning this work, using extensive sampling data already acquired during the expanded site inspection, which took place from 2017-2019.

Additionally, approximately sixteen pilot studies have been initiated and are in various stages at Peterson AFB. The intent of these pilot studies is to test a number of new and innovative technologies to remove PFAS from soil and groundwater. A dynamic groundwater recirculation system is one of the future pilot studies for new technologies.

Further, in 2019, Peterson AFB received approximately $50 million from the FY18 National Defense Authorization Act. In 2020, that money was used to design, purchase, and install longer-term mitigation measures for the affected public water systems in El Paso County, to supplement the short-term mitigation measures installed in 2017. The majority of these new public water treatment systems went online in late 2021 or are anticipated to be operating by summer of 2022.

Bonita Peak Mining District Superfund Site

In 2021, the division and its counterparts at the Colorado Attorney General's Office worked with EPA Region VIII and the U.S. Department of Justice to negotiate and finalize a settlement with Sunnyside Gold Corporation and their parent company, Kinross Gold Corporation, resolving the mining companies' potential federal and state liability related to clean up of the Bonita Peak Mining District (BPMD) Superfund Site. Under the terms of the settlement, the mining companies will pay $45 million toward future investigation and cleanup of the site. The department will receive $4.05 million to offset some of the state's future operating costs at the site.

The department also worked with its sister natural resource trustee agencies, the Colorado Division of Natural Resources and the Attorney General's Office, to negotiate an independent settlement of $1.6 million with Sunnyside Gold Corporation, resolving Sunnyside's potential liability for natural resource damages associated with legacy mining activities at the BPMD Superfund Site. The $1.6 million settlement will enable the Colorado Natural Resource Trustees to fund projects that restore natural resources injured by the 2015 Gold King release and other releases of mining contaminants within the Superfund site.

Captain Jack Mill Superfund Site

The division is operating an innovative in-tunnel water treatment system in the Big Five Tunnel at the Captain Jack Mill Superfund site in Boulder County. Treatment occurs within the mine tunnel behind the bulkhead; the mine pool recirculates as needed to promote and enhance treatment efficiency. Once treated within the mine pool, water periodically discharges from the bulkhead piping through a temporary water treatment plant that further treats the water prior to discharge into Left Hand Creek. The Big Five Tunnel treated approximately 13.5 million gallons of water in 2021.

An upper settling pond outside Big Five Adit Portal at the Captain Jack Mill Superfund Site

Radiation Control Program

The Radiation Control Program regulates the possession, use, management, and disposal of radioactive materials as well as radiation-producing machinery, such as X-ray machines. The program also works with local public health agencies and members of the public to provide information regarding radon levels in homes and other buildings, as well as funding for radon mitigation to low income homeowners throughout the state.

Radon Program

$208, 848 Given to 26 grantees

9,700 Homes, schools and other buildings installed radon mitigation systems

8,784 Free radon test kits distributed

62 Colorado cities and counties require radon resistant systems in new homes

29,000 Homes, schools and other buildings tested for radon

Learn more about radon

coloradoradon.info

X-Ray Program

19,530 Registered radiation producing machines

5,497 Registered facilities

55% Registered facilities are dental facilities

8,897 Total machine inspections performed in 2021

3,876 Inspections performed at hospitals and other medical facilities

3,980 Inspections performed at dental facilities

The X-ray Certification Unit (XRCU) enforces regulations that ensure the safe use of radiation-producing machines. The XRCU performs compliance audits and inspections of facilities that have radiation-producing machines and maintains the registration of X-ray facilities, qualified inspectors, service companies, and machine operators.

Radiation Control Program

Radioactive Materials Program: licenses, actions, and inspections

244 Total license actions | **174** Amendments | **6** New licenses | **45** Renewed licenses | **9** Document reviews | **9** Terminations

Inspection facts

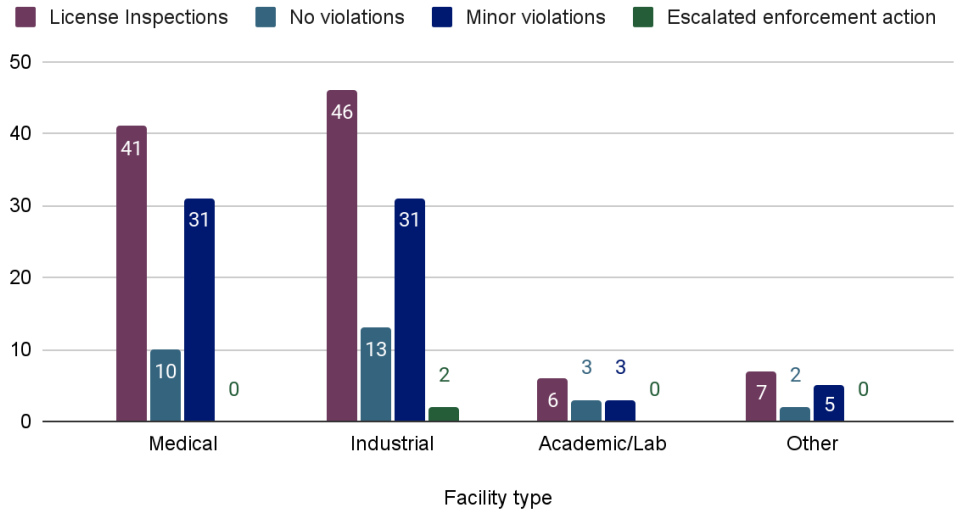
100 total inspections

98% inspections required no escalated enforcement

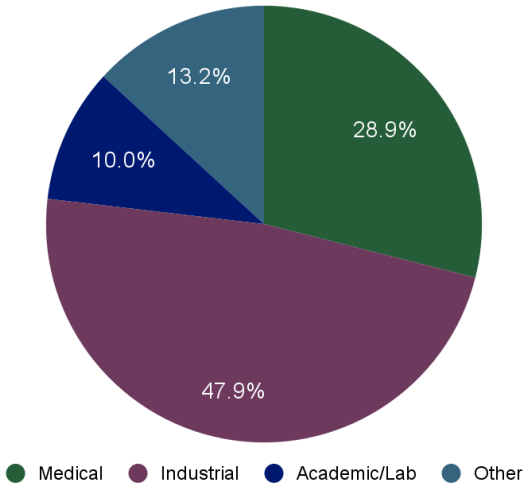
28 inspections with no violations

71 inspections with minor violations

Inspections and violations by facility type



Types of Specific Radioactive Materials Licenses



There are a total of 311 specific radioactive materials licenses in Colorado. In addition to these licenses, the Radiation Control Program registers 765 generally licensed entities who manage devices containing radioactive materials received through an authorized transfer by a device manufacturer or distributor.

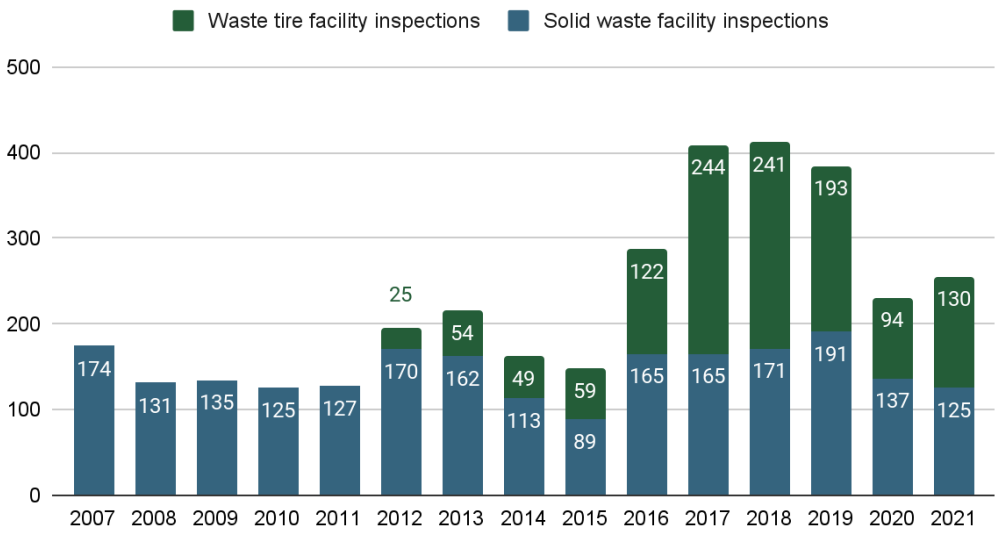
Visit the website

cdphe.colorado.gov/radiation-management

Solid Waste and Materials Management Program

The Solid Waste and Materials Management Program is responsible for ensuring compliance with laws and regulations concerning the management of solid waste. The authority for this program is in the Colorado Solid Waste Act, 30-20-100.5, et seq., C.R.S. Colorado's solid waste management program is approved by EPA, so the authority to implement requirements for managing solid waste in Colorado rests completely with the state.

Solid Waste Program : Facility Inspections



The number of overall inspections increased from FY 2020 to FY 2021, but lagged behind FY 2019. The program expects to see the number of inspections increase during FY 2022, due to less restrictions related to the COVID-19 pandemic and a better understanding of how to protect inspectors during inspections using COVID-19 protocols.

Fast facts

32	Complaints in FY 2021
7	Complaints investigated/ inspected by staff
17	Complaints referred to local governments/ other agencies
119	Spill reports
80	Spill reports reviewed, ensuring appropriate cleanup actions were completed
39	Spill reports referred to local governments/other agencies

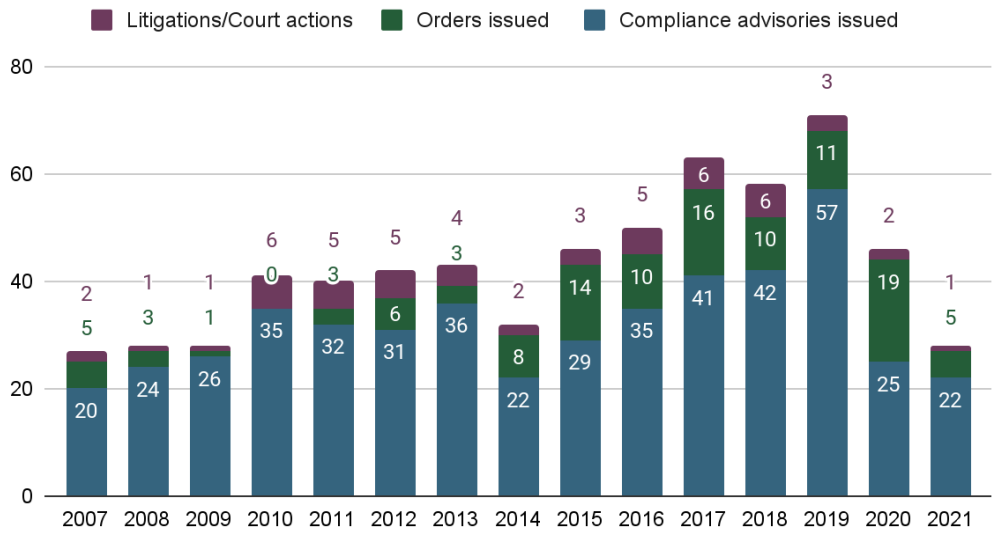
Small landfill initiative:

In 2016, the program began a compliance effort to bring small landfills into compliance with the solid waste regulations. The program offered to fund closure of small landfills that elected to close. Six small landfills elected to close with the program's assistance. Thirteen small landfills elected to stay open and upgrade their facilities to comply with the regulations. In 2021, the program funded groundwater sampling at the landfills that elected to stay open.

In 2016, the program required six local government-owned landfills to revise their Engineering Design and Operations Plan (EDOP) to comply with the current solid waste regulations. The program received draft EDOPs from all six landfills, which will be reviewed at no cost to the local governments that own the small landfills.

Solid Waste and Materials Management Program

Solid Waste Program : Enforcement Actions



Visit the website

cdphe.colorado.gov/solidwaste

4,959 web hits in FY 2021

Every year, the Waste Tire Program oversees the management of millions of waste tires, which are both fire hazards and prime mosquito breeding grounds. The program conducts inspections, initiates enforcement actions, and promotes the recycling of waste tires into various tire-derived products.

The Waste Tire Program

Due to existing monofill and processing facility inventories, **122%** of waste tires generated in, or imported into Colorado were either recycled or salvaged.

Tire derived fuel, windbreaks, alternative daily cover, and salvaging were the largest end uses of waste tires in 2020.

Remediation Program

The Remediation Program performs preliminary assessments and site investigations of potentially-contaminated sites, to determine whether they should be included on the National Priorities List for Superfund designation. The program also oversees remediation activities at Superfund and federal facilities sites, encourages the voluntary remediation and redevelopment of historically-contaminated sites, and assures cleanup of sites contaminated by uranium mill tailings.

UMTRA Program

2,001	Building permit survey requests
11,190	Direct communication received
26%	Properties surveyed with radioactive uranium mill tailings
5,619	Prepared environmental requests
1,705.5	Total cubic yards of mill tailings removed

The Uranium Mill Tailings Remedial Action (UMTRA) program provides guidance and outlines resources for building contractors, private citizens, utility companies, and local governments when faced with newly-discovered radioactive uranium mill tailings.

Brownfields program:

Brownfields are properties whose future use is affected by real or perceived environmental contamination. During the past year, the Brownfields program:

- Completed Targeted Brownfields Assessments for six local governments.
- Provided $390,000 of cleanup grant funding to local governments and nonprofits.
- Conducted workshops, webinars, and technical assistance meetings to support the efforts of local governments to address and redevelop brownfields properties.

In 2021, the Remediation Program actively administered five loans through the Brownfields Revolving Loan fund that provided $4.6 million in funding to address contaminated sites in disproportionately-impacted communities. The fund received repayment of three large loans totaling almost $4.5 million. The fund currently has $5 million available for loans.

Visit the website

cdphe.colorado.gov/environmental-cleanup

Community outreach

In 2021 the Remediation Program participated in 51 community outreach meetings

Remediation Program

Treatment of mine impacted water:

Colorado is home to hundreds of abandoned gold and silver mines. Many of Colorado's abandoned mines discharge metals-contaminated water, which creates significant environmental impacts to streams and rivers. Since the 1990s, the Remediation Program has worked with EPA to address abandoned mines that cause the most severe environmental impacts. This includes treating mine-impacted water at water treatment facilities operated by the Remediation Program, as well as those operated by responsible parties.

The Remediation Program is responsible for operating the Argo, North Clear Creek, and Summitville water treatment plants, which provide significant water quality improvements in the Clear Creek and Alamosa River basins. In 2021, the Argo Tunnel water treatment plant, constructed in 1998 in Idaho Springs, treated approximately 120 million gallons of metals-contaminated water. The North Clear Creek water treatment plant, completed in 2016 in Black Hawk, treated approximately 72 million gallons. The Summitville water treatment plant, constructed in 2011 near Del Norte, treated approximately 295 million gallons.

A photo of an old mining bridge near Golden, CO

Treatment of mine-impacted water by responsible parties in 2021 included approximately 397 million gallons at the Yak Tunnel facility near Leadville, 122 million gallons at the Eagle Mine facility near Minturn, and 26 million gallons at the Wellington-Oro facility near Breckenridge. Treating mining-impacted water not only improves water quality and biological density and diversity in receiving streams, but in the case of the Argo and North Clear Creek facilities, protects the drinking water supply for approximately 350,000 people in the Denver metro area.

The Voluntary Cleanup Program	338 Acres cleaned	6,428 Homes, condos, apartments built	1,144 Jobs created
	Projected tax credits to be issued: $2,887,340	Capital improvements: $675,374,225	

Hazardous Waste Program

The Hazardous Waste Program is responsible for ensuring compliance with laws and regulations pertaining to the management of hazardous waste. Primary elements of the program include compliance assistance, compliance monitoring and enforcement, corrective action, permitting, and information management. The corrective action staff oversee the remediation and cleanup of more than 200 individual facilities ranging in size and complexity, from large complex sites such as the Denver Federal Center and Lockheed-Martin, to smaller facilities such as neighborhood dry cleaners and plating shops.

5,290 Regulated facilities in the Hazardous Waste Program

Corrective action

249 Corrective action document reviews

62 Reviews per full time employee

Pueblo Chemical Depot:

As of December 7, 2021, the Pueblo Chemical-Agent Destruction Pilot Plant (PCAPP) had destroyed a total of 242,572 105mm projectiles, bringing the total number of chemical weapons destroyed to 541,000. This is approximately 70% of the weapons stored there, or over 80% of the total mustard agent in the Pueblo stockpile.

Completed construction of Static Detonation Chamber (SDC) units

Munitions processing at PCAPP

SDC air filter units

541,000 chemical weapons have been destroyed at PCAPP

Hazardous Waste Program

Fast facts

Staff spent **11.7%** of their time on compliance assistance

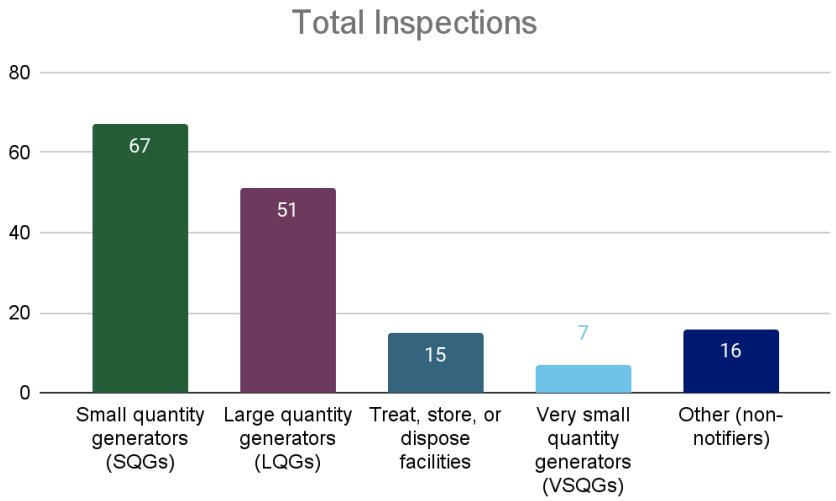
Hosted **695** online attendees at the hazardous waste regulations training

7,713 **web hits** for the main Hazardous Waste Program webpage.

No change in the four environmental indicators

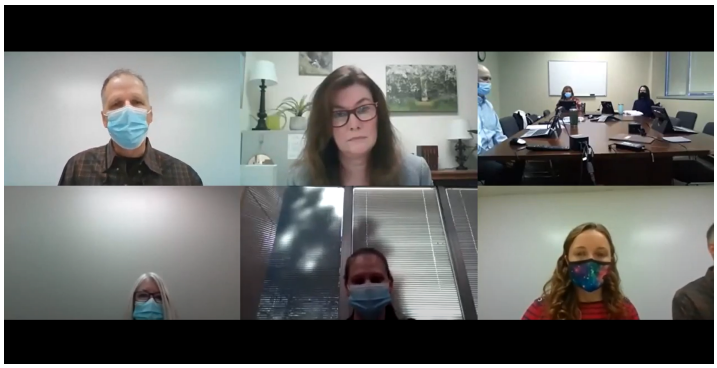
Visit the website

cdphe.colorado.gov/hazwaste



Hazardous waste regulations training

As part of its compliance assistance efforts, the Hazardous Waste Compliance Assurance Unit hosts a training every year in October for facilities that generate hazardous waste. The training presents an overview of the Colorado Hazardous Waste Regulations. In 2020, the COVID-19 pandemic required a shift to the new remote format. However, the unit found that pivoting to a webinar-based platform made the training more accessible to a greater number of people and facilities located throughout the state. In 2020, the first year of the webinar-based platform, 382 people registered. After more outreach over the past year, including mailing postcard notifications and offering early online registration options, 695 individuals attended the training in October 2021.



The Hazardous Materials and Waste Management Division

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