

Hazardous Materials and Waste Management Division

Annual Report

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COLORADO
Hazardous Materials
& Waste Management Division
Department of Public Health & Environment





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Director of
the Hazardous
Materials and Waste
Management Division

As the division director of the Hazardous Materials and Waste Management Division (HMWMD) I am pleased to share this annual report. It features a variety of accomplishments including the Durango UMTRA program, TENORM legislation, and updates on the Small Landfill Initiative. These accomplishments, along with many others, demonstrate our commitment to upholding the community's health and safety.

Our division mission, "to improve the quality of the environment and public health for the citizens of Colorado by continuously improving our efforts to ensure proper management of hazardous materials and waste," fuels our work each and every day in the HMWMD.

Below you will find division highlights from state fiscal year 2018-2019, followed by relevant statistics for each program within the division. These statistics are a reflection of the continued innovation, dedication, and development of our staff, stakeholders, and partners as we work towards safeguarding public health and the environment for generations to come.

Low-income Radon Mitigation Assistance program

The Low-income Radon Mitigation Assistance Program was launched in early 2018, providing 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 to nearly 100 low income families annually.

As of March, 2020, 15 contractors have qualified to participate in the program. We have received 261 applications and 117 homeowners have qualified. 100 homes have been mitigated and 17 are in process. The program has saved participating residents between \$495 and \$3,800 on mitigation systems, improved indoor air quality and reduced exposure to potentially harmful levels of radon gas.

Waste tire program changes

To increase the end use of waste tires and reduce storage inventories, the 2019 Colorado General Assembly passed legislation that brings back the End User Fund in 2020. To support the End User Fund, the Waste Tire Fee increased on Jan 1, 2020 from \$0.55 to \$1.25 for each new tire sold.

The End User Fund provides rebates to in-state end users of tire-derived products and retailers that sell tire-derived products. This legislation also brings back market development so the department can assist in bringing sustainable markets for the end use of waste tires and tire-derived products to Colorado.

Durango UMTRA program

In 2019, we implemented a more-robust Uranium Mill Tailings Remedial Action (UMTRA) program in Durango, Colorado. Starting in the 1940s, sand-like radioactive leftovers from the uranium milling process, called mill tailings, were used in the construction of homes and businesses in Western Colorado. Starting in the 1970s, more than 900 properties in the Durango area were evaluated for uranium mill tailings, and the U.S. Department of Energy oversaw a large cleanup effort in the 1980s and 1990s. We recently digitized records from the Department of Energy cleanup, and these records show there could be leftover tailings on a number of properties across Durango. Mill tailings can be found in concrete, mortar, fields, backfill material, yards, subfloors, and anywhere else sandy fill material may have been used. Radon gas from the tailings can become trapped in structures and is the main health concern related to uranium mill tailings. Tailings are odorless and tasteless. The only way to know if tailings are present is to do a property survey with a gamma detection meter.

Our Uranium Mill Tailings Program, headquartered in Grand Junction, has assisted Durango residents since 1998, providing records reports, interpreting the reports, and traveling to Durango to perform site surveys. In 2019, given the recent digitization of property records, we worked closely with local agencies and stakeholders to implement a campaign that increases awareness regarding residual mill tailings on properties throughout Durango and the surrounding community.



A photo of the remediation of asbestos contaminated soil at the Denver Federal Center

TENORM legislation

We are developing a proposed management rule for leftover Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), as required by the Senate Bill 18-245. Since the bill was passed, we have worked together with stakeholders to develop a proposed regulatory structure that addresses TENORM in a way that furthers our vision of a healthy and sustainable Colorado.

During the stakeholder meetings we discussed the potential operational challenges and economic impacts of TENORM regulation. The stakeholder process has allowed us to gather critical information that is essential in the TENORM regulatory development process.

On March 1, 2019, a third-party environmental consulting firm submitted a draft TENORM report. We reviewed the draft report and provided 141 comments on April 9, 2019. We then opened a 60-day public comment period for the draft report between April and June 2019 and received over a hundred comments from 18 groups of stakeholders. By the end of 2020, as required by the Senate Bill 18-245, we will have rules promulgated for TENORM.

Small Landfill Initiative

We continued to fulfill obligations under the Small Landfill Initiative, which aims to improve environmental conditions, protect groundwater and consolidate landfill operations. Division contractors drilled a total of 39 groundwater monitoring wells at the 13 landfills choosing to remain open. In 2019, division staff successfully closed 5 small landfills.

Treatment of mine impacted water

Colorado is home to hundreds or even thousands of abandoned gold and silver mines. Many of Colorado's abandoned mines discharge metals-contaminated water, resulting in significant environmental impacts to the streams and rivers that receive contaminated water from abandoned mines. Since the 1990s, the Remediation Program has been working with EPA to address some of those abandoned mines that cause the most severe environmental impacts.

In 1998, CDPHE completed construction and began operating the Argo Water Treatment Plant in Idaho Springs. In 2011, the Summitville Water Treatment plant came on line, and the North Clear Creek Water Treatment Plant was completed in 2016. CDPHE Remediation Program is responsible for the ongoing operation of these facilities, which provide significant water quality improvements in the Clear Creek and Alamosa River basins. In 2019, the Argo Tunnel and North Clear Creek facilities treated over 173 million gallons of metals-contaminated water, while approximately 378 million gallons were treated at the Summitville Water Treatment Plant. Treatment of mining-impacted water results not only in improved 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.

Peterson Air Force Base

The Peterson AFB Expanded Site Inspection for chemicals in firefighting foam used at the base, PFOD and PFOA, was initiated by the Air Force in fall 2017. The primary intent of the Expanded Site Inspection is to gain a better understanding of how groundwater flows in this region, and to understand how and where contaminants are getting from the source areas off of the installation. The Remediation Program has been integrally involved in planning both phase 1 and phase 2 of the Expanded Site Inspection fieldwork, to include working with the Air Force to determine appropriate sampling locations. During the first phase, test borings were completed to confirm the locations of paleo channels in which we are interested (i.e. those with contamination). During the second phase, which took place in 2019, over 145 wells, both on and off the installation, were sampled. The results of this sampling effort will be used to scope the follow-on Remedial Investigation. Additionally, pilot studies have been initiated to test a number of innovative technologies to remove PFAS from soil and groundwater.

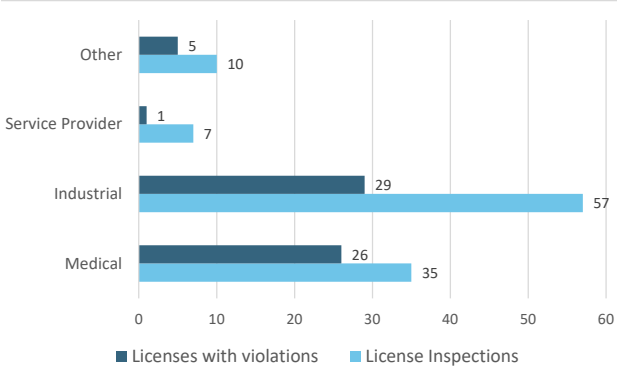
Further, in 2019, Peterson AFB received a large amount of funding, approximately \$50M, from the FY18 National Defense Authorization Act. That money is being used to design, purchase, and install longer-term mitigation measures for the affected public water systems in El Paso County, to supplement the short-term mitigation measures installed in 2017.

Radiation Program

The Radiation Program regulates the possession, use, management and disposal of radioactive materials. It also regulates radiation-producing machinery, such as X-ray machines. The program works with local agencies to provide information regarding radon levels in homes and other buildings. The following information is from 2019.

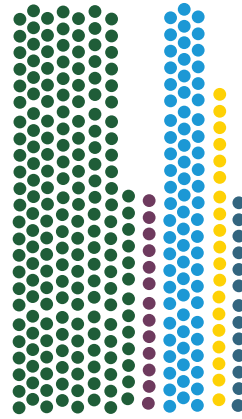
Licenses, actions and inspections

Inspections and violations by facility type:



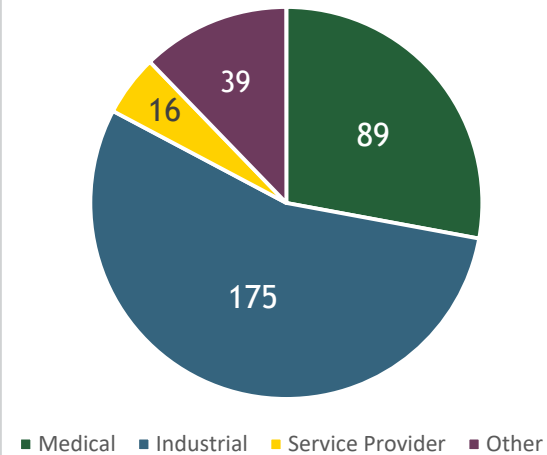
This figure captures both minor and major violations. Most violations are minor.

298 total license actions:



181 Amendments
13 New
72 Renewals
19 Document reviews
13 Terminations

Radioactive Materials Licenses by facility type:



Radon Program



Granted approximately:
\$226,566
to 34 recipients



9,005
homes, schools and
other buildings installed
radon mitigation.



5,000
free radon
test kits were
distributed.



15 builders built approximately:
4,005
homes, schools and other
buildings with radon-
resistant features.



42,400
homes, schools and other
buildings were tested.

X-ray Program



17,716
radiation-producing
machines are
registered in Colorado.

65%
are in dental facilities.



5311
facilities are registered
by the X-ray Program.



6261 inspections.
were performed in FY 2019.



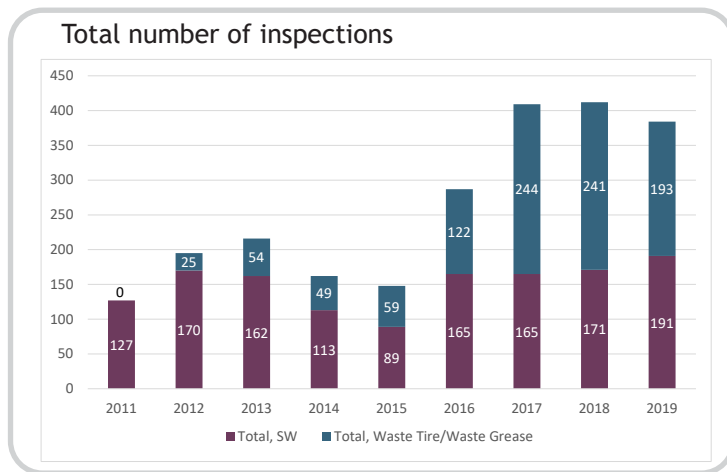
1824 at hospitals and hospital clinics.
& **2733** at dental facilities.

Solid Waste and Materials Management Program

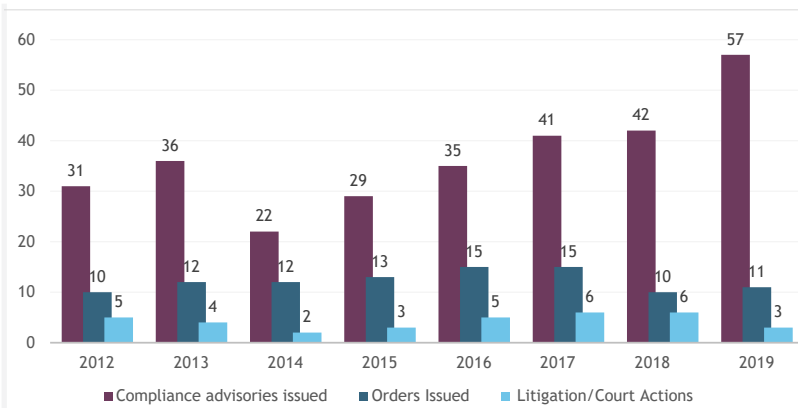
The **Permitting Unit** reviews all permit applications for solid waste sites to determine if the proposed facility is protective of human health and the environment and works with local governing bodies to permit solid waste facilities. The **Compliance Assurance Unit** is responsible for ensuring compliance by conducting inspections, visiting sites, and reviewing facilities that manage, treat, recycle, reuse and/or dispose of solid wastes. The **Materials Management Group** oversees recycling and beneficial reuse of waste materials. The unit also implements the waste tire/waste grease management and recycling programs.

Inspections and compliance

The number of inspections has remained relatively constant in the last two years.



In FY 2019, the program received 46 complaints. Of those, 16 were investigated and/or inspected by division staff and 20 were referred to local governments or other agencies. In addition, 125 spill reports were received. We followed-up on 120 of those spills to ensure appropriate cleanup actions were completed, and five spills were referred to local governments or other agencies.



The number of compliance orders issued has risen steadily in recent years. The number of cases that require legal action has remained low, although these cases are time-consuming and expensive.

42%

of inspections include compliance assistance

In FY2019 the solid waste program completed inspections of

384



In FY2019 each waste tire inspector performed **49** inspections

Program highlights

PaintCare

654,476

gallons of used paint was processed by PaintCare in 2018



PaintCare was established to keep paint from damaging the environment. PaintCare now has over 169 drop-off sites in Colorado that accept unwanted latex and oil-based paints for free. Fees on new paint sales fund the paint take-back program.

326 tons

of metal and plastic paint containers were recycled in 2017.

Waste Tire Program

Every year the Waste Tire Program manages millions of waste tires, which are both fire hazards and prime mosquito breeding grounds, by conducting inspections, taking enforcement actions and promoting recycling of waste tires into different tire-derived products.

Nearly **6,200,000**

waste tires were recycled or salvaged in 2018.

265,527

Total waste tires cleared from illegal tire sites, hitting the

one million tire mark

Remediation Program

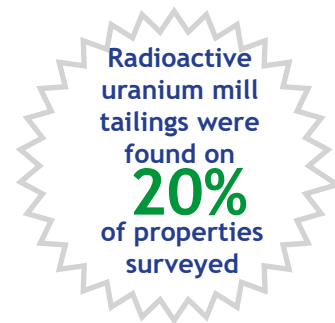
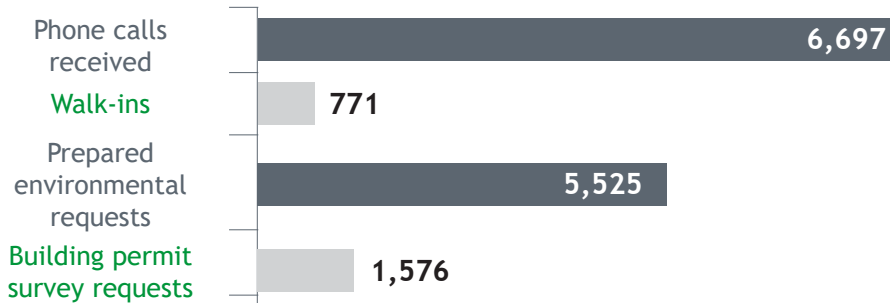
The Remediation Program performs preliminary assessments and site investigations of potentially contaminated sites to determine whether they should be included on the National Priorities List for Superfund designation. The program also oversees remediation activities at Superfund and federal facilities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

UMTRA Program

The 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.

Public Interaction

FY 2018 to 2019



Treatment of Mine Impacted Water

Many of Colorado's abandoned mines discharge metals-contaminated water, resulting in significant environmental impacts to the streams and rivers. Since the 1990s, the Remediation Program has been working with EPA to address some of those abandoned mines that cause the most severe environmental impacts.

- CDPHE Remediation Program is responsible for the ongoing operation of the Summitville and the North Clear Creek Water Treatment Plant which provide significant water quality improvements in the Clear Creek and Alamosa River basins.
- In 2019, the Argo Tunnel and North Clear Creek facilities in Idaho Springs treated over 173 million gallons of metals-contaminated water, while approximately 378 million gallons were treated at the Summitville Water Treatment Plant.

Treatment of mining-impacted water in the Argo and North Clear Creek facilities, protects the drinking water supply for approximately 350,000 people in the Denver metro area.

Brownfields Program

The Colorado Brownfields Program continues to work with local governments and non-profits across Colorado to identify and remediate environmentally distressed properties. Highlights for the year include:

- Completed Targeted Brownfields Assessments for five local governments.
- Provided \$220,000 of cleanup grant funding to local governments and non-profits.
- Conducted workshops, webinars, and technical assistance meetings to support the efforts of local governments to address and redevelop brownfields properties.

The Colorado Brownfields Revolving Loan fund provides low interest, flexible term loans to help offset the additional cost of property redevelopment caused by environmental contamination. Loans are available to both public and private entities. In 2019, the fund approved \$3.75M of loans to provide for cleanup and redevelopment of three brownfields sites.

Voluntary Cleanup Program

The Voluntary Cleanup Program aims to facilitate the redevelopment and transfer of contaminated properties.

471 acres

were cleaned up through the program

4,372

jobs were created*

&

3,815

houses and condos were built

VCUP received 13 applications for tax credits pursuant to the Colorado Tax Credit for Remediation of Contaminated Land. CDPHE anticipates approving \$2,997,540 of tax credits in 2019. Cleanup and redevelopment of properties receiving tax credits resulted in \$768,963,929 of capital improvements.

*Jobs created were through retail, restaurants, property management and business which have either been created here or have grown and hired new people. We did not include any temporary construction jobs.

Hazardous Waste Program

Colorado's 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 oversees the remediation and cleanup of more than 200 individual facilities ranging in size and complexity, from the Denver Federal Center and Lockheed-Martin to facilities like neighborhood dry cleaners and plating shops.

Total inspections



- Small quantity generators (SQGs)
- Compliance assistance visits
- Treat, store, or dispose facilities
- Conditionally exempt SQGs
- Large Quantity Generators (LQGs)

Federal rule changes

This year Colorado adopted rules that correspond to the federal Generator Improvements Rule. The EPA wrote the rule primarily to reorganize the regulations that apply to hazardous waste generators and address gaps in the existing regulations. Colorado adopted all of the rule that is more stringent than the existing regulations and retained those provisions of Colorado law that were already more stringent than the federal regulations. The rule changes were effective as of June 30, 2018.

Corrective action

336 > **74.7**
corrective action reviews reviews per full time employee

The program had high numbers of corrective action reviews to complete this year and fewer people on staff to do so. Staff were able to complete more than 74.7 reviews per full time employee in FY2019

4869 facilities are in the regulated universe of the Hazardous Waste Program.

Fast facts

The hazardous waste program surpasses EPA goals at all high-priority facilities for the four EPA indicators:

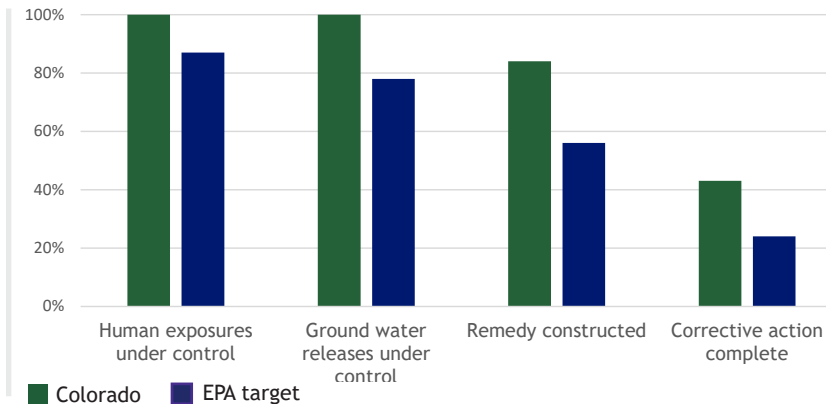
October
2019 Training

Five full-day hazardous waste generator trainings were given to over

520
attendees.

Compliance assistance

15.5 percent of staff time was spent on compliance assistance in 2019, surpassing the 10 percent standard in SB 00-177.



Pueblo Chemical Depot

The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is one of Colorado's permitted facilities. The plant was taken off-line in September 2017 to fix numerous equipment failures and to troubleshoot both system and safety problems. The plant was restarted in June 2018, and has gradually increased chemical weapons throughput.

To date, approximately **222,492** munitions, or **28.5%** of the chemical weapons stockpile, representing **50%** of the chemical agent, have been destroyed.



www.colorado.gov/cdphe/hazwaste 7,350 web hits for the site in FY2019





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