

Annual Report

The Hazardous Materials and Waste Management Division

May 6, 2024



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. The report discusses accomplishments in the areas of environmental justice, the implementation of new rules regarding per- and polyfluoroalkyl substances (PFAS), compliance assistance, 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 2022-2023, 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 (the division) includes five programs: The Administration Program, Radiation Control Program, Solid Waste and Materials Management Program, Remediation Program, and Hazardous Waste Program. In this report are division-wide highlights from the state fiscal year (FY) 2022-2023, which represent accomplishments and initiatives across the various programs, followed by specific sections dedicated to each program within the division.

Division-wide highlights from fiscal year 2022-2023

Environmental justice initiative

The division is committed to systematically addressing health equity and environmental justice through administration of all its programs, as well as ensuring decisions impacting the environment are made with the participation of those affected. The division continues to closely partner with the Environmental Justice Program within the Colorado Department of Public Health and Environment (the department) on a number of important issues ranging from providing free indoor radon test kits and financial assistance for radon mitigation to low-income families, 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. The division continues to train staff across all programs on language justice, community engagement best practices, and how to utilize EnviroScreen to better understand disproportionately impacted communities. Further, the department and division are strongly committed to language justice; in 2023, the division fulfilled 51 translation and interpretation requests. 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.

Digital accessibility

The Administration Program is leading the division's ongoing digital accessibility effort. This effort works across all of the division's programs to comply with HB21-1110, the Accessibility Law for Colorado State and Local Government. More importantly, the purpose is to provide equitable access for all Coloradoans to all of the division's documents and services. As part of this effort, the division has remediated over 800 documents and reorganized its online forms and webpages to align with digital accessibility standards. Further, the

division has been proactive in developing guidance, leading trainings, and creating opportunities for both division and department staff to learn about digital accessibility best practices and resources.

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). This 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. 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. After reviewing the information, the division issues a Certificate of Registration through the online registration program.

As of January 1, 2023, testing fire systems using PFAS-containing foams is prohibited, rendering the requirements in the regulation for capture, containment, and storage of spent foam generated during testing obsolete. In addition, legislation passed in 2022 expanded the capture, containment, storage, and reporting requirements for facilities and entities that use or store PFAS-containing foam. Due to efforts led by the Hazardous Waste Program, a rulemaking process was held to incorporate the new statutory requirements into regulation, and the changes were adopted by the Solid and Hazardous Waste Commission on February 20, 2024.

Low Income Radon Mitigation Assistance Program

The Radiation Control Program'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, which was passed in 2016 to provide mitigation assistance annually. As of February 2024, 31 contractors are qualified to participate in the program. As a result of the LIRMA program, over 1,040 residents of 445 mitigated homes have experienced improved indoor air quality and decreased likelihood of lung cancer. In fiscal year 2023, contractors who are certified and licensed by the division mitigated 74 homes at an average cost of \$2,256 per home. The program saved participating residents between \$495 and \$5,800 on mitigation systems, improved indoor air quality, and reduced exposure to potentially-harmful levels of radon gas.

While the division encourages testing for radon year-round, January is National Radon Action Month. The division participates every year by doing targeted outreach, as shown on the right, through various channels to encourage people to test their homes for radon.



Peterson Space Force Base

The Air Force, in partnership with the division's Remediation Program, initiated the Remedial Investigation for PFAS contamination at Peterson Space Force Base (SFB) in 2020. This effort was initially funded through 2023, with additional funding secured through May 2025. The primary intent of the Remedial Investigation is to define the nature and extent of PFAS contamination both on and off the installation, and the division is integrally involved in planning this work. The Remedial Investigation Report, documenting PFAS investigative activities conducted between 2020-2024, is anticipated to be complete in Fall 2025. Additionally, 15 pilot studies are underway at Peterson SFB to test new and innovative technologies to detect and remove PFAS from soil and groundwater.

In 2019, Peterson SFB received approximately \$50 million from the FY 2018 National Defense Authorization Act. Peterson SFB used that money in 2020 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. These new public water treatment systems are all operating and supplying safe drinking water to the affected communities.

Producer Responsibility Program for Statewide Recycling

The Solid Waste and Materials Management Program is working to implement the Producer Responsibility Program for Statewide Recycling Act, signed into law on June 2, 2022, which sets up a program that requires companies that sell products in packaging and paper products to fund and implement a statewide recycling system to recycle those materials. One of the goals is to develop a convenient, cost-effective program that provides free and equitable recycling of packaging and paper for all Coloradans, making recycling as convenient and cost-effective for consumers as trash removal. Under the law, a non-profit Producer Responsibility Organization (PRO) must be established to coordinate, fund, and manage this statewide recycling system. The department appointed Circular Action Alliance as the designated PRO in May 2023. Further, the Act required the department to appoint a 15-member Producer Responsibility for Statewide Recycling Advisory Board by March 2023. We appointed the geographically-diverse advisory board in December 2022, composed of recycling industry experts, local governments, nonprofits, and others, to consult with the PRO and make recommendations to the department.

Nelson Tunnel Superfund Site

The Nelson Tunnel/Commodore Waste Rock Superfund Site, located in Mineral County near the town of Creede, has achieved multiple milestones in 2023, and vital work at the site is ongoing and planned for future years. The Remediation Program worked with the EPA, Mineral County, and key mining claim owners to draft an administrative settlement agreement that was finalized and executed in 2023. Under this agreement, properties containing historical mining structures, including the iconic ore sorting house on the Bachelor Loop, were donated to Mineral County, who became long-term stewards in charge of stabilization and preservation of these structures. As part of the agreement, Mineral County adopted a county ordinance that helps protect human health from existing mine waste and preserve the engineered components of the Superfund remedy.

The Remediation Program and EPA built a technical team consisting of experts from other government agencies (Colorado Department of Reclamation, Mining, and Safety; United States Geological Survey; and United States Forest Service) and private contractors to tackle the complex technical issues at this Superfund site. In 2023, the team initiated two parallel efforts to protect human health and the environment: 1) the installation of a bulkhead to prevent catastrophic water release, and 2) the investigation of site conditions to

implement a final action to remediate contamination-related issues. The investigation has been focused on characterizing water quality and flow inside the abandoned mine workings. Future investigation will explore options for intercepting water prior to entry into the Nelson Tunnel, treatment of the water, and further stabilizing and decreasing environmental impact of the Commodore Waste Rock pile.



The ore sorting house on the Bachelor Loop

Captain Jack Mill Superfund Site

The division's Remediation Program 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; once treated within the mine pool, water goes from the bulkhead piping through a temporary water treatment plant that aerates the water before going into Left Hand Creek. The Big Five Tunnel treated approximately 15 million gallons of water in 2023. Although the in-tunnel treatment has already improved the water quality in Left Hand Creek downstream of the site, the division is designing and constructing an external aeration system from 2023-2025, which will ensure the system reliably meets the necessary treatment goals to protect aquatic life downstream.



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 the dangers of elevated radon levels in homes and other buildings. Further, the program provides free and low-cost radon test kits and funding for radon mitigation systems to low-income homeowners throughout the state.

X-Ray Program



20,012 Registered radiation producing machines



5,407 Registered facilities



49% Registered facilities are dental facilities



9,338 Total machine inspections performed in 2023



4,489 Inspections performed at hospitals and other medical facilities



4,283 Inspections performed at dental facilities



133 Inspections performed at mammography facilities

Radon Program



\$233,608.76 Given to 25 grantees



14,703 Homes, schools and other buildings installed radon mitigation systems



2,415 Free radon test kits distributed



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



28,707 Homes, schools and other buildings tested for radon

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.

Learn more about radon



coloradoradon.info

Radiation Control Program

Radioactive Materials Program: Licenses, actions, and inspections

310

Total license actions

202

Amendments

8

New licenses

52

Renewed licenses

29

Document reviews

19

Terminations

Inspection facts

110 total inspections

96.4% inspections required no escalated enforcement

53 inspections with no violations

53 inspections with minor violations

Figure 1 - Inspections and violations by facility type

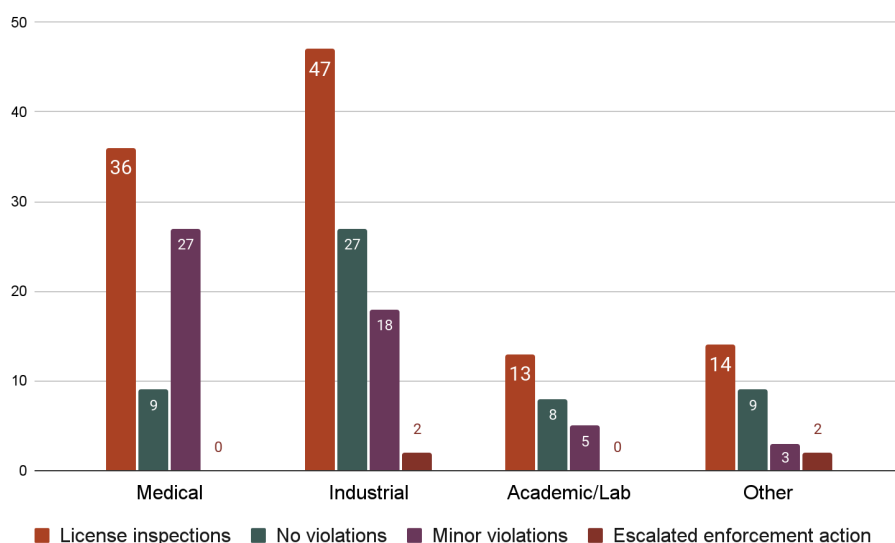
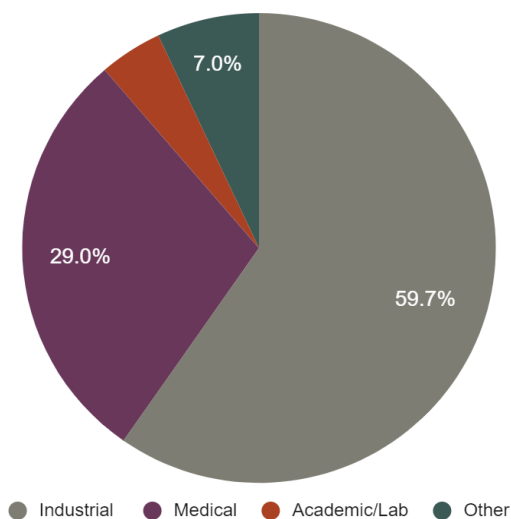


Figure 2 - Types of specific radioactive materials licenses



There are a total of 300 specific radioactive materials licenses in Colorado. Some examples of the types of licenses illustrated in Figure 2 include industrial facilities using radiography to ensure the integrity of pipe welds; nuclear medical departments performing heart scans; and universities performing DNA sequencing. In addition to these licenses, the Radiation Control Program registers 703 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/hm/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 the Environmental Protection Agency, therefore the authority to implement requirements for managing solid waste in Colorado rests completely with the state.

Figure 3 - Solid Waste Program: Facility inspections

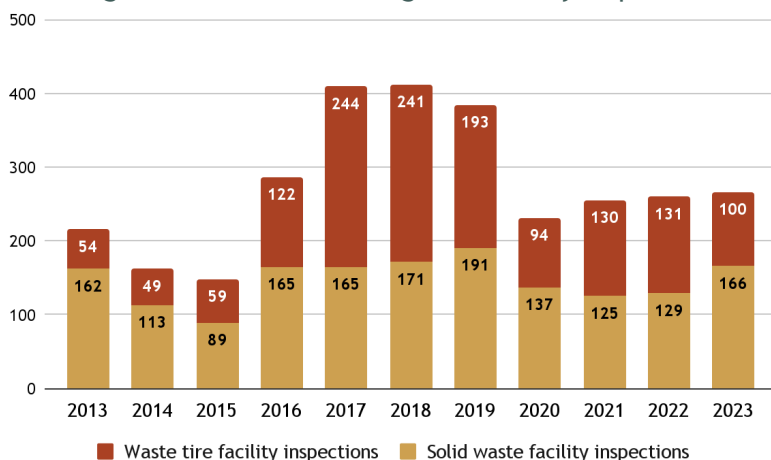
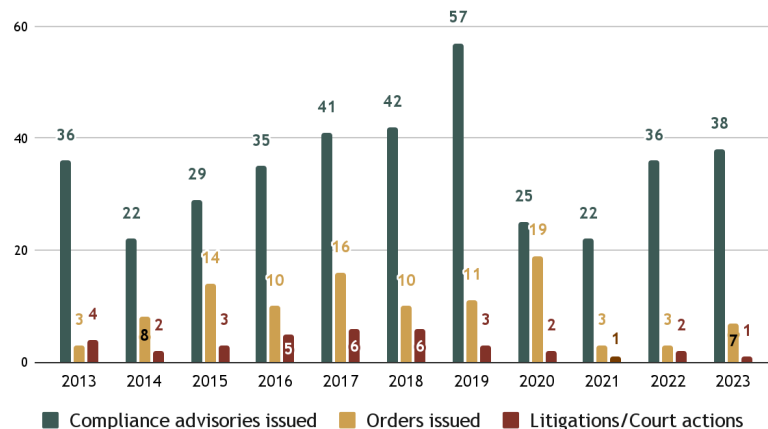


Figure 4 - Solid Waste Program: Enforcement actions



The number of overall inspections slightly increased from FY 2022 to FY 2023, but lagged behind FY 2019. The program has shifted its inspection priorities to focus on facilities that are known or suspected to be out of compliance with the solid waste regulations, which often results in enforcement. Inspections with enforcement actions require more time and resources.

Closed Landfill Remediation Grant Program

HB 23-1194, Closed Landfills Remediation Local Governments Grants, creates a grant program to provide funding to local governments that own closed landfills contaminating groundwater, creating landfill gas, or having other conditions that present a risk to human health and the environment. HB 23-1194 directs the Solid and Hazardous Waste Commission (SHWC) to adopt rules for implementing the program by July 1, 2024. The bill also created the Closed Landfill Remediation Grant Program Advisory Committee, made up of five members, including two local government representatives, two representatives from the department, and one technical expert with no affiliation to the department or a local government. At the February 2024 SHWC hearing, the five members were appointed to the advisory committee that will review grant applications and advise the department on the issuance of closed landfill remediation grants.

Fast facts



63

Complaints in FY 2022



10

Complaints investigated/inspected by staff



53

Complaints referred to local governments/other agencies



176

Spill reports



135

Spill reports reviewed, ensuring appropriate cleanup actions were completed



41

Spill reports referred to local governments/other agencies

Solid Waste and Materials Management Program

PaintCare

On July 1, 2015, the Architectural Paint Stewardship Act began requiring PaintCare to manage unused paint in Colorado. In this program, fees on new paint sales fund the end-of-life management of unused paint. The division ensures PaintCare follows all aspects of the Act and the approved program plan.



Waste tires

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.



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 cleanup of historically-contaminated sites under its Voluntary Cleanup and Redevelopment Program, and assures cleanup of sites contaminated by uranium mill tailings.

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 radioactive uranium mill tailings.

UMTRA Program



2,672 Building permit survey requests



12,894 Direct communication received



16% Properties surveyed with radioactive uranium mill tailings



5,872 Prepared environmental requests



389 Total cubic yards of mill tailings removed

Visit the website



[cdphe.colorado.gov/
environmental-cleanup](https://cdphe.colorado.gov/environmental-cleanup)

Brownfields program

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

- Completed 12 Targeted Brownfields Assessments for eight local governments and two non-profit organizations.
- Provided \$774,262 of cleanup grant funding to local governments and nonprofits.
- Conducted workshops, webinars, and technical assistance meetings to support the efforts of local governments in addressing and redeveloping brownfields properties.

In 2023, the Remediation Program, in partnership with the Colorado Housing and Finance Authority, continued servicing four loans through the Colorado Brownfields Revolving Loan Fund. Of the \$4.2 million of cleanup funding provided by these loans, \$2.7 million addressed contaminated sites in disproportionately-impacted communities. Additionally, in 2023, the fund approved three loans, providing \$5.4 million of cleanup funding, with \$1.3 million dedicated to disproportionately impacted communities.

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 pose significant environmental impacts to streams and rivers. Since the 1990s, the Remediation Program has worked with the Environmental

Remediation Program

Protection Agency 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 2023, the Argo Tunnel water treatment plant, constructed in 1998 in Idaho Springs, treated approximately 129 million gallons of metals-contaminated water. The North Clear Creek water treatment plant, completed in 2016 in Black Hawk, treated approximately 76 million gallons. The Summitville water treatment plant, constructed in 2011 near Del Norte, treated approximately 379 million gallons.

Treatment of mine-impacted water by responsible parties in 2023 included approximately 400 million gallons at the Yak Tunnel facility near Leadville, 81 million gallons at the Eagle Mine facility near Minturn, and 32.9 million gallons at the Wellington-Oro facility near Breckenridge. Treating mine-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.



A photo of an old mining bridge on Red Mountain Pass near Ouray, CO

The Voluntary Cleanup Program

703 Acres cleaned

3,372

Homes, condos, apartments built

2,452

Jobs created

55

Voluntary Cleanup Program applications



Rural tax credits:

\$675,000

Capital improvements:

\$651,384,242

Projected tax credits to be issued:

\$1,466,639

The Voluntary Cleanup and Redevelopment Program (VCUP) facilitates redevelopment and transfer of contaminated properties, in conjunction with the Brownfields Program. Above is FY 2022-2023 information for the VCUP.

Hazardous Waste Program

The Hazardous Waste Program is responsible for ensuring compliance with statutes 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 Rocky Flats and EVRAZ, to smaller facilities such as neighborhood dry cleaners and plating shops.

5,340

Regulated facilities
in the Hazardous Waste
Program

Corrective
action

237

Corrective action
document reviews

53

Reviews per full-time
employee

Pueblo Chemical Depot

The Pueblo Chemical-Agent Destruction Pilot Plant (PCAPP) completed munitions destruction operations on June 22, 2023, ahead of the treaty deadline of September 30, 2023. A permit modification incorporating a significant redesign of the main plant Cavity Access Machines (CAMs), to facilitate treatment of 4.2-inch mortar rounds, increased the destruction rate for this munitions type, making timely completion of munition destruction operations possible. During the life of the project, PCAPP destroyed 780,089 chemical weapons containing 2,613 tons of mustard agent.



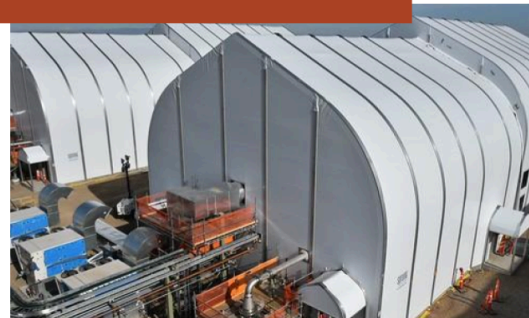
Munitions processing
at PCAPP

780,089

chemical weapons
destroyed

Mission complete

Interior and exterior of the Static Detonation Chambers



Types of munitions processed



105 - MM M60



4.2" mortars
M2 & M2A1



155 MM M104 & M110

Hazardous Waste Program

Fast facts



Staff spent **13%** of their time on compliance assistance



Hosted **854** online attendees at the hazardous waste regulations training



10,320 web hits for the main Hazardous Waste Program webpage.



Staff completed **241** total inspections

Environmental Indicators

45%

Sites meet corrective action indicator

86%

Sites meet remedy constructed indicator

100%

Sites with human exposures under control

100%

Sites with groundwater releases under control

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 the next year, including mailing postcard notifications and offering early online registration options, 695 individuals attended the training in October 2021. In October 2022, 812 individuals attended, and 854 individuals attended in October 2023.

Visit the website



cdphe.colorado.gov/hazwaste

Figure 5 - Total inspections



The Hazardous Materials and Waste Management Division

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