



**COLORADO**  
Department of Public  
Health & Environment

# HAZARDOUS MATERIALS AND WASTE MANAGEMENT

## DIVISION ANNUAL REPORT July 1, 2014 - June 30, 2015



## **A Message from Gary Baughman Director, Hazardous Materials & Waste Management Division**

Fiscal Year 2015 highlights for the Hazardous Materials and Waste Management Division included measureable progress on remediation projects, successful pursuit of legislative and regulatory changes, notable Superfund activity and the introduction of innovative new technologies and solutions related to our mission of ensuring the proper management of hazardous materials and waste.

**Remediation Accomplishments:** In 2014, the division announced the successful remediation of a contaminated groundwater plume beneath the **Colorado Department of Transportation (CDOT) headquarters** in Denver and the neighborhood downgradient of the facility. Mitigation and monitoring of all buildings and homes was discontinued, a major milestone for one of the first sites in the nation to eliminate the vapor intrusion pathway without the continued use of passive or active mitigation systems. Despite this success, complete cleanup of the groundwater will still take many more years.

Elsewhere in Colorado, cleanup of an oil spill discovered at the Parachute Creek Gas Plant in 2013 is nearly complete. The spill posed a threat to Parachute Creek, a tributary to the Colorado River, and although some cleanup remains to be completed the threat to Parachute Creek has largely been mitigated. While the division and the U.S. Environmental Protection Agency (EPA) both issued enforcement actions against the operator requiring cleanup of the spill, EPA has largely deferred to the division to oversee the cleanup, and over the past year closed out its enforcement action. The division took the initiative to coordinate communication with public and private stakeholders regarding monitoring and remediation efforts undertaken by the site operator. This outreach helped assure the stakeholders that their concerns were acknowledged and allowed the site operator to properly manage responses. By facilitating communication, the division was also able to provide information to other department programs to streamline procurement of water and air permits that were vital to constructing and operating the remedial systems.

Successful mitigation efforts continued in Denver's **Cole and Clayton neighborhoods**, and the remediation of soil, groundwater and indoor air contamination from a former gas station and a former dry cleaner is showing positive results. Follow-up monitoring shows that the air mitigation systems are maintaining safe indoor air. The remediation system will operate for years, pulling contaminants from the groundwater until fresh groundwater eventually flushes away the contaminant plume.

The first chemical weapons have been destroyed using the new Explosive Destruction System (EDS) at the **Pueblo Chemical Depot**, a significant step demonstrating our nation's continued progress in destroying its chemical weapons stockpile. It is also welcome news for the hazardous waste program, which has been overseeing the construction and permitting of the facilities that will destroy the 780,000 mustard munitions at the depot. The event has received much local, national and international media coverage.

**Legislation:** In the 2014 legislative session, **House Bill 14-1352** was passed, updating and consolidating the state's waste tire management and recycling laws. During FY2015 the division's solid waste program worked quickly and diligently to incorporate changes. One of the main goals of the new law is to make the management of waste tires market-driven by 2018 and to bring about the closure of waste tire monofills by July 1, 2024. The law also restructured the End User Fund, which makes funds available for the beneficial use of waste tires and tire-derived products.

As a direct result of funding made possible through the passage of HB 14-1352, successful waste tire cleanup events were held in Boone and Parachute. More than 1,500 waste tires were collected to be recycled into tire-derived fuel or used as alternate daily cover at a landfill. Additional collection events are planned in the months ahead.

A 2014 Nuclear Regulatory Commission (NRC) audit of Colorado's Radiation Program declared the program satisfactory (NRC's highest rating) in seven out of eight performance indicators. The one indicator found unsatisfactory was "compatibility," due to language incompatible with NRC requirements that had been added to the Colorado Radiation Control Act (RCA) by interests outside of

the program. The program immediately developed a plan to meet NRC requirements that also created an opportunity to make additional modifications to clarify existing regulations and remove obsolete or unnecessary language. The program initiated a series of stakeholder meetings throughout the state to inform and educate the industry, activists and communities to gather feedback on the proposed changes. A bill was introduced into the 2015 legislative session (**House Bill 15-1145**) and program staff provided information to help educate legislators about the structure of the regulations and the changes needed to make the RCA compatible with NRC requirements. The bill passed with no opposition, and was signed into law by the Governor.

The hazardous waste program supported successful legislation (**House Bill 15-1039**) removing limitations on drug donation practices and adding liability protection to participating facilities and pharmacies, creating a safe and legal way to manage the disposal and donation of unused prescription medicines. The legislation clarified and broadened acceptable drug donation practices in Colorado. Long-term care facilities and safety-net pharmacies now can collaborate more effectively to provide an underserved population with prescription drugs that were not previously available to them due to cost. The law particularly helps long-term care facilities reduce their waste stream while avoiding the high cost of environmentally conscious drug disposal.

**Paint Stewardship:** Signed into law in 2014, the **Colorado Paint Stewardship** law required development of a new paint recycling program. The program makes it more convenient for households and businesses to recycle unwanted paint. The law relieves much of the burden on local and state governments with limited resources, thereby minimizing opportunities to effectively recycle. The division reviewed the plan prior to its approval and will monitor the program to ensure the goals are met, including inspecting collection sites and auditing fee assessment. The Paint Stewardship program took effect on July 1, 2015.

**Regulatory Changes:** The radiation program presented proposed changes to the Colorado Rules and Regulations Pertaining to Radiation Control to the Colorado Board of Health. Changes to clarify credentials required to be a computed tomography

(CT) operator were proposed in the interest of public health. The proposed changes, a result of meetings with medical community stakeholders, were adopted and took effect in early 2015.

The Solid and Hazardous Waste Commission approved regulations that established new training requirements and a certification process for trainers and workers involved in the cleanup of meth-contaminated buildings. The division created criteria for testing, certification, monitoring, record keeping and fee collection. Additionally, the department established the process of ensuring that certified contractors and trainers perform at a level that complies with established standards. The new regulations took effect in late 2014.

**Superfund Changes:** Colorado's newest Superfund site, **Colorado Smelter** in the Eilers neighborhood in Pueblo County, was added to the National Priorities List (NPL) in 2014. The NPL is the Environmental Protection Agency's list of U.S. hazardous waste sites eligible for long-term remedial action under the federal Superfund program. The Eilers community in southeast Pueblo was home to the Colorado Smelter; one of five historic smelters in the area. Around the turn of the 20th century, factories along the Arkansas River heated ore brought from the mountains to remove valuable metals, but released waste rock, arsenic and lead into the environment. The remnant metals present a significant risk to human health. The division worked closely with EPA Region 8 to add the site to the NPL. Remediation crews will work with the community to establish how to best clean up the site.

Meanwhile, three Operable Units (OUs) of the **California Gulch Superfund Site** (Leadville Mining District) were deleted from the National Priorities List. EPA has determined, with concurrence of HMWMD's Remedial Programs Superfund Unit, that all appropriate response actions, other than operation, maintenance and five-year reviews, have been completed. The department was presented with an award recognizing the contributions of dozens of department staff over the 31-year cleanup. Five operable units of the site remain to be deleted from the list.

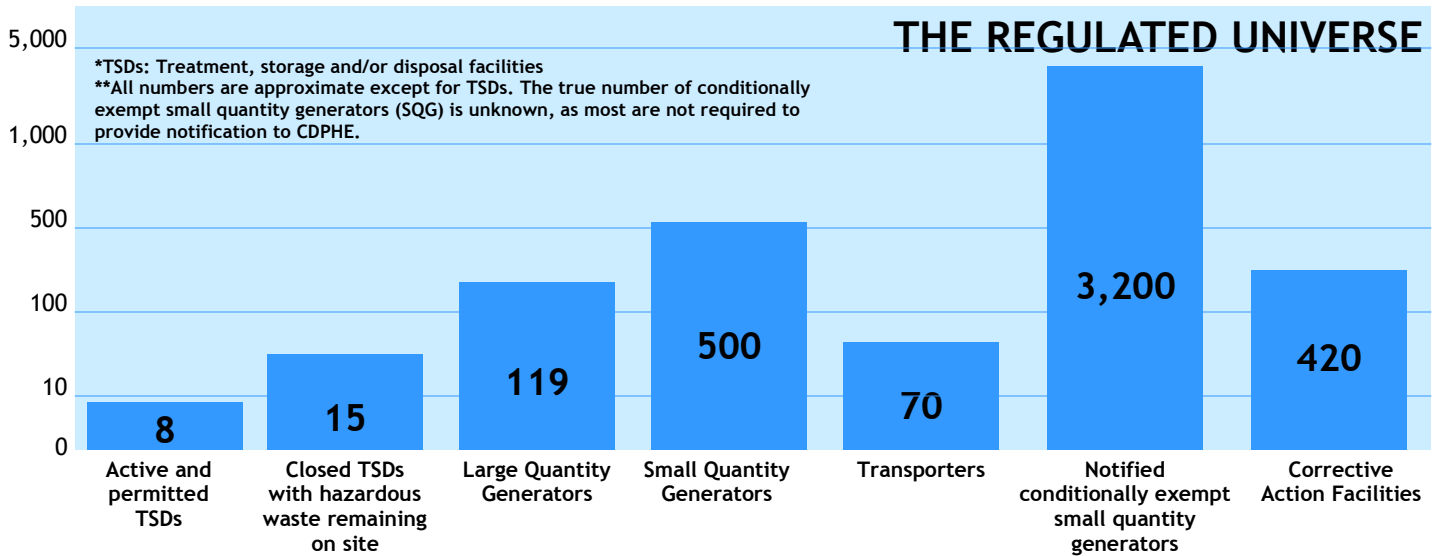
**Innovation:** The **Summitville Mine Superfund Site** is the first in the nation to get power from a solar

*Continued on Page 8*

# 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 over 400 individual facilities ranging in size from large facilities such as Fort Carson and Lockheed-Martin, to very small facilities like neighborhood dry cleaners and plating shops.

## THE REGULATED UNIVERSE



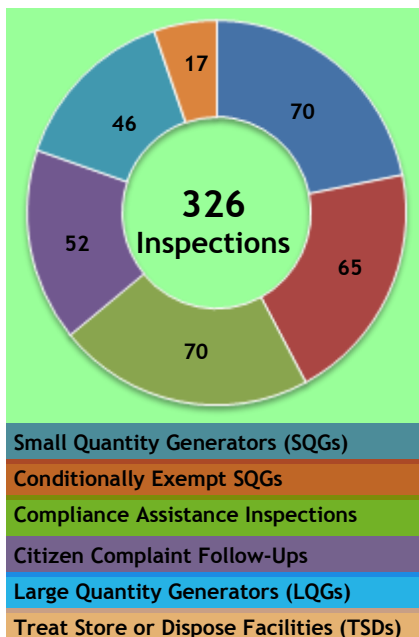
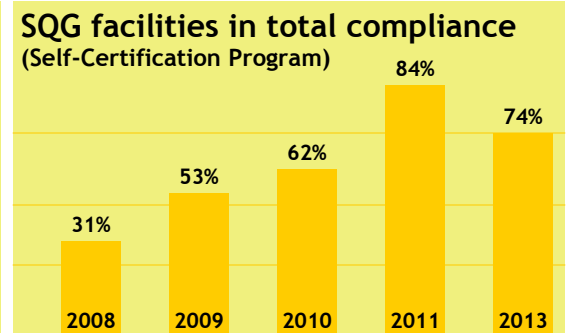
**During Fiscal Year 2014**

The division provided **16** compliance assistance trainings in Colorado and reached **1007** people

Through the technical assistance phone line, staff responded to **2040** calls

&

**450** emails



2014 was the 8th year of the mandatory SQG self-certification program, the 7th year of the mandatory dry cleaner self-certification program and the 2nd year of the long-term care facility certification program.

### Facilities asked to Self-Certify in 2014

Category	Count
SQGs	492
Dry Cleaners	204
Long-term Care Facilities	219

Ensures waste pharmaceuticals are properly managed

The only unpermitted TSD unit is at the **Pueblo Chemical Depot**.

## 94

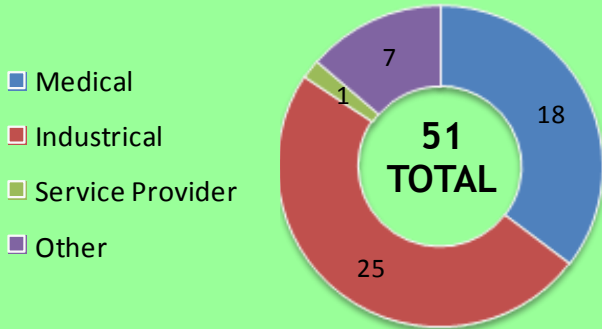
chemical weapons storage igloos

are considered a single unit. The division does not plan to permit these igloos, but regulate them under a compliance order until they are emptied and closed by the US Army, no later than 2021, under its **Chemical Demilitarization Program**.

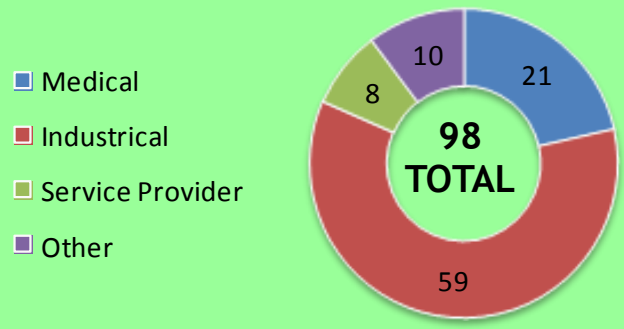
# RADIATION PROGRAM

The Radiation Program regulates the possession, use, management and disposal of radioactive materials and regulates radiation-producing machinery, such as x-ray machine. The program also works with local agencies to provide information regarding radon levels in homes and other buildings. The following information is from 2014.

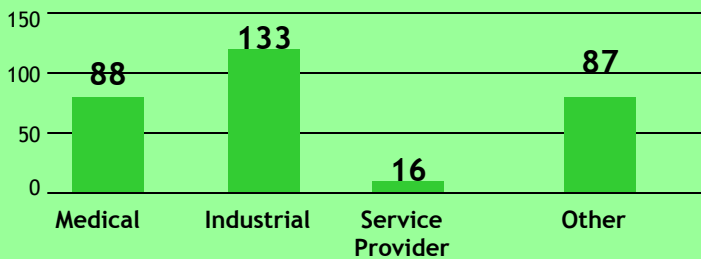
## License inspections



## Licenses with violations



## Radioactive Materials Licenses



## 434 License Actions

60 Renewals	11 Terminations
13 New	45 Document Review
304 Amendments	1 Device evaluation

## The Radon Program

Granted approximately  
**\$136,000**  
to 20 recipients

Distributed approximately

**2,100**

radon test kits to  
Colorado citizens

**15 builders**

built approximately  
**1,300**  
homes, schools and other  
buildings with radon-  
resistant features.

**22,988**

homes, schools and other  
buildings tested in 2014.

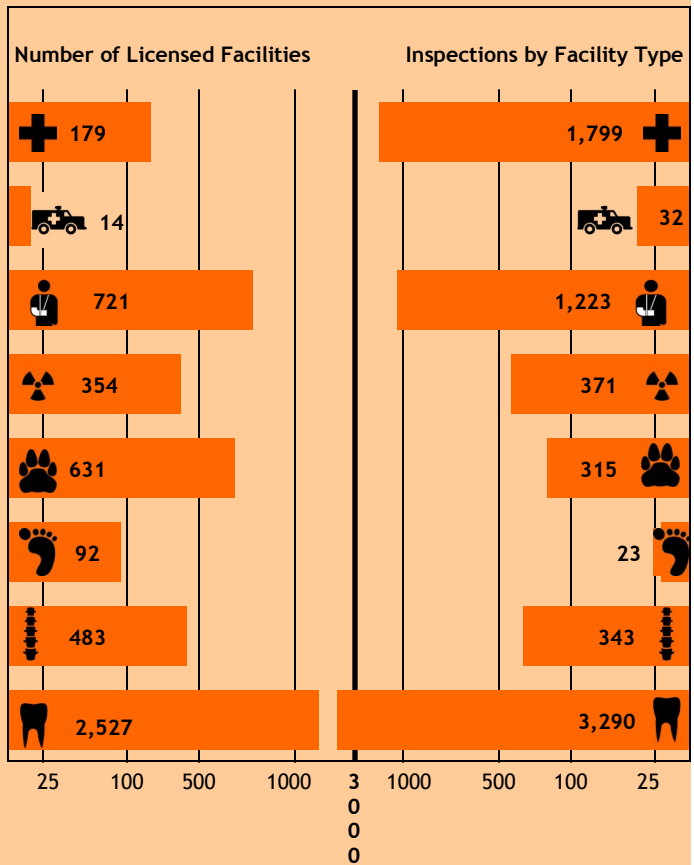
**8,500**

homes, schools and other  
buildings installed radon  
mitigation.

Approximately 14,715 radiation-producing machines  
are registered with the department, including:



5,001 facilities are licensed by the X-ray Program  
and 7,396 inspections were performed



# REMEDIATION PROGRAM

The Remediation Program performs preliminary evaluations and field investigations of potentially contaminated sites to determine whether they should be included on the National Priorities List for Superfund consideration. The program also oversees remediation activities at Superfund and federal sites, encourages the voluntary remediation and redevelopment of historically contaminated sites and assures cleanup of sites contaminated by uranium mill tailings. The sources of the following information include the FY15 Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Annual Report and the FY 2014-15 Uranium Mill Tailings Remedial Action (UMTRA) Annual Report.

## Superfund Sites by Type

- Industrial
- Wood Treatment
- Smelters
- Radiation
- Landfills
- Metals Mining




## CERCLA/Superfund Sites

Colorado Smelter in Pueblo became newest Superfund site in Colorado in December 2014.

3 of 8 Operable Units of the California Gulch site were deleted from the National Priorities List in December 2014.



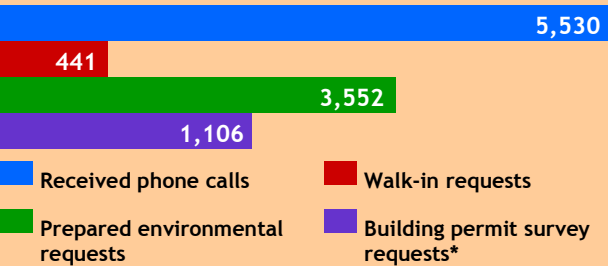
 Solar energy is being used to reduce the electric bill at the Summitville Mine water treatment plant.

At Central City/Clear Creek, a flow-through bulkhead installed in the Argo Tunnel eliminated the risk of blowout that could overwhelm the water treatment plant.



## UMTRA Program

### Public Interaction 2014-2015



\*29 properties reported tailings

## Voluntary Cleanup Program

87 applications for voluntary cleanup projects were received in 2014.

735 acres were cleaned up through the program.

3,003 residences were built. (Houses and condos.)



4,337 jobs were created.



EPA Region 8 received \$4.8 million brownfields grants to assess, clean up and redevelop contaminated properties.

7 Colorado communities received \$2.4 million

- Trinidad: \$500,000
- Fort Collins: \$500,000
- Adams County: \$200,000
- Lower Willow Creek Restoration Company: \$200,000
- Northglenn: \$400,000
- Kiowa County: \$200,000
- Denver: \$400,000

**Federal Facilities Program:** oversees the remediation and redevelopment of defense sites on active and formerly used federal facilities which include:

- ◇ Air Force Academy
- ◇ Atlas Missile Sites: 2 of 5 sites closed ✗ ✗ ● ● ●
- ◇ Buckley Air Force Base
- ◇ Buckley Annex
- ◇ Camp George West Artillery Range
- ◇ Camp Hale
- ◇ Craig National Guard Training Site
- ◇ Delta Range
- ◇ Fort Carson
- ◇ Fort Logan
- ◇ Lowry Air Force Base
- ◇ Lowry Bombing and Gunnery Range
- ◇ Peterson Air Force Base
- ◇ Pueblo Army Air Field
- ◇ Pueblo Chemical Depot
- ◇ Rocky Mountain Arsenal
- ◇ Titan I Missile Complexes: 3 of 6 sites closed ✗ ✗ ✗ ● ● ●

# 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.

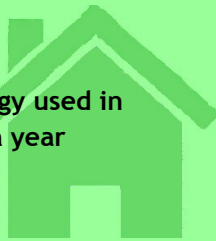
The **Compliance Assurance Unit** conducts compliance inspections—site visits and document reviews—at facilities that manage, treat, recycle, reuse and/or dispose of solid wastes. This unit also investigates complaints alleging mismanagement of solid waste, and oversees cleanup of asbestos-contaminated soil.

The **Materials Management Group** oversees recycling and beneficial reuse of waste materials, and implements the waste tire and waste grease management and recycling programs.

## Benefits of Recycling Municipal Solid Waste in Colorado

### Energy Savings

Equivalent to the energy used in 107,000 homes in a year



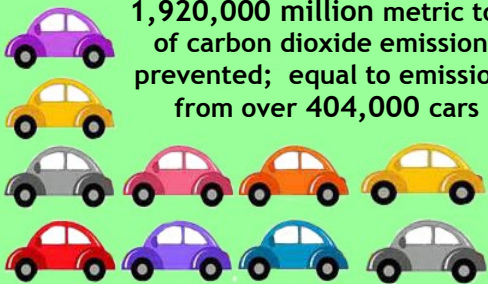
### Natural Resources Conserved

2 million barrels of oil  
10,200 railcars of coal



### Greenhouse Gas Emissions Avoided

1,920,000 million metric tons of carbon dioxide emissions prevented; equal to emissions from over 404,000 cars



## Compliance/Inspections

### 2014 ENFORCEMENT

22 Compliance Advisories issued  
12 Compliance Orders issued  
2 cases in litigation

Illegal dumping is the most common problem encountered



## Materials Management Factoids

The **Electronic Recycling Jobs Act** resulted in 24 new electronic recycling facilities in the state

12 beneficial use projects in 2013— resulted in 522,749 tons of solid waste diverted from landfills

The **Waste Tire Program** began a pilot project that uses local public health agencies to conduct inspections of waste tire facilities in their jurisdictions

58 waste grease transporters and 10 waste grease facilities registered in 2014

Multiple bills impacting solid waste were vetted through the legislature

2014



## 2014 LEGISLATIVE SESSION

### SB 14-029

Promotes the recycling of unused architectural paint by providing drop-off locations in the state.

### HB 14-1352

Updated and consolidated waste tire management and recycling laws.

### Solid Waste Commission

Revised management of asbestos-contaminated soil regulations.

*Continued from Page 3*


garden. The EPA and the state of Colorado had long sought ways to reduce the electricity bill at the Summitville Mine water treatment plant in the San Juan Mountains. An innovative solution came from a community solar garden in the town of Antonito, approximately 40 miles to the south. The state signed a 10-kilowatt subscription, about 40 panels, to receive energy from the solar garden. All electricity produced by the 40 panels will be credited to the Summitville Mine electric bill. The subscription will also reduce greenhouse gas pollution by 15 metric tons per year. Although the power generated serves only a small portion of the plant's energy needs, opportunities to increase the subscription are being explored.

In another recognition of state innovation, the division's **Small Quantity Generator Self-Certification Program** was acknowledged as a "Next Gen" program in a 2014 article from Bloomberg BNA; a publication for professionals in business, law and government that reported on states using compliance strategies similar to the EPA's next generation approach.

The division's Federal Facilities Remediation and Restoration Unit has been proactive in advocating the use of a new and innovative technology, **Geophysical Classification for Munitions Response**, to address military munitions contamination at federal facilities across the state. Geophysical anomaly classification that detects scrap metal and unexploded ordnance, then determines whether the individual items must be removed or may be safely left in the ground. Unit staff have successfully advocated for technology demonstrations to be performed by the Department of Defense at four sites across the state. These demonstrations have brought not only opportunities to use an innovative technology, but also allowed more work to be done more quickly at these sites, thereby protecting human health and the environment, while providing a more-rapid return of the land to productive use. The Federal Facilities Remediation and Restoration unit leader serves as a national team leader in developing technical regulatory guidance documents to help other states and others across the industry better understand and implement this new technology.

**Community Involvement:** The Solid Waste Program's Waste Tire Unit sponsored its second annual waste tire conference at the end of the fiscal year. The conference continues to put into action an aggressive market-development program intended to broaden and upgrade markets for waste tire product. Representatives from 16 states and Canada attended the conference, which provided the latest and best information on regional markets, market development and trends, technologies and beneficial end uses for waste tires.

The program continued to provide outreach throughout the state with its series of training sessions, "Local Government's Role in Implementing the Colorado Solid Waste Regulations." The goal of this training is to provide comprehensive insight for local government and municipalities on the department's role with regard to state regulations. Some of the training topics include permitting and enforcement, understanding enforcement authority granted under the Solid Waste Act and landfill operation.



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*Cover photos (left-to-right, top-to-bottom): 1. Solid waste unit conducting a site inspection; 2. Electronics recycling; 3. One of two high density liners installed at a new landfill; 4. An unexploded munition; 5. Solar energy garden in San Antonito, Colorado; 6. The Colorado state capital building.*