



**COMMUNITY
RIGHT-TO-KNOW**

**COLORADO
MINING**

HISTORY (Origin of TRI)

- 1984--Bhopal, India
- 1986--Emergency Planning and Community Right-To-Know Act (“EPCRA”)
- 1998--Community Right-to-Know provisions applied to mining
 - Annual reports (Form R) submitted to EPA annually for “releases” of 667 listed chemicals above certain thresholds
 - Reporting referred to as Toxic Release Inventory or TRI
- 2000--Thresholds lowered for certain TRI chemicals
- 2002--Changes in TRI reporting from favorable court decisions allowing *de minimis* exemption for overburden

What is the TRI Program?

“Users of TRI data should be aware that TRI data reflect disposal or other releases and other waste management activities for chemicals, not whether (or to what degree) the public has been exposed to them...” (EPA, 2005)

“The release forms required under this section are intended to provide information to the federal, state, and local governments and the public, including citizens of communities surrounding covered facilities...” (EPA, 2003)

Criteria for Inclusion

- EXCEEDS CHEMICAL “THRESHOLD”
 - Manufacture 25,000 Pounds
 - Process 25,000 Pounds
 - Otherwise Use 10,000 Pounds
 - PBTs
 - >100 Pounds (lead)
 - >10 Pounds (mercury)
 - >0.1 gram (dioxins)
- Certain exemptions may apply (e.g., *de minimis*, overburden, articles, laboratories, vehicles etc.)

Release - Review

What is a “Release”?

- “Releases” include any application, discharge, or transfer of a listed chemical to air, land, or water.
- “Releases” quantified, reported and authorized in connection with environmental permits or other programs designed to protect human health and the environment are included if TRI thresholds exceeded. Examples include:
 - Placement of tailing, overburden, water treatment precipitates or fly ash into engineered structures approved by MLRB
 - Air emissions and water discharges assessed in connection with permits issued by CDPHE

Releases - Review

Facts about “Releases”

- Reportable “releases” do not account for environmental controls under approved permits designed to protect public health and the environment and, thus, to manage “risk”
- Over 90% of reportable “releases” for typical mining operations are naturally-occurring minerals in the rock and coal

Changes in TRI Reporting

- **Federal District Courts issued clarifying decisions applying to certain types of mining activities**
- **EPA did not appeal or challenge those decisions**
- **Naturally occurring TRI chemicals in rock moved by mining operations at concentrations below 1% now eligible for the *de minimis* exemption**
- **Reported releases for 2002 decreased dramatically at some operations due to this change in interpretation of the TRI Program**
- **Releases of TRI chemicals were over-reported for 1998 through 2001 at those operations affected by this change**
- **Reductions in reported releases were partially offset by substantial lowering of thresholds for lead in 2001**

Mercury

- Reporting threshold for mercury is 10 lbs., compared to 10,000 lbs. for all other metals except lead, which is 100 lbs.
- Mercury is naturally occurring in some native rock materials
- 99.9% of reported mercury “releases” are contained within the matrix of the rock that is placed in engineered structures as overburden
- Levels of mercury in the native rock are at the low end of published average values for soils
- Mercury in the native rock is naturally occurring in a form that is virtually insoluble to water

Colorado TRI Rankings 2001-2003

- Colorado ranked 33th of the 50 States in RY 2001
- Colorado ranked 36th of the 50 States in RY 2002
- Colorado ranked 38th of the 50 States in RY 2003
- Colorado ranked 37th of the 50 States in RY 2004

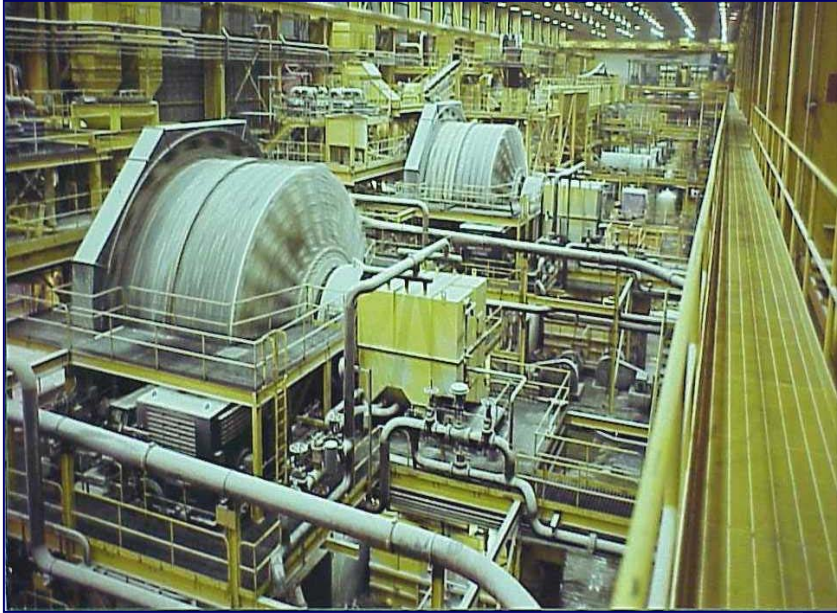
Mines Reporting in Colorado

- Base Metal Mill -- Henderson
- Base Metal Mine -- Henderson
- Precious Metal Mine -- CC&V
- Coal Mine -- Trapper

Henderson Mill



Henderson – Ore Processing



Henderson Mill - EPCRA Reporting

- 2004 = More than 98 percent of reported “releases” are naturally-occurring metal compounds in rock
- Major “release” is the deposition of tailing into permitted tailing impoundment

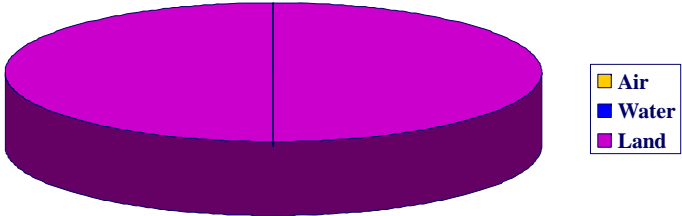
Henderson Mill - 2004 EPCRA Report

Reported Quantities - By Media

“Releases” of Substances

- “Release” to Air 21
- “Release” to Water 0
- “Release” to Land 3,021,000

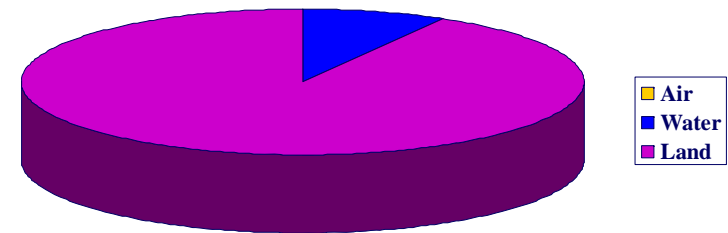
Total “Release” 3,021,021



Henderson Mine - 2004 EPCRA Report Reported Quantities - By Media

“Releases” of Substances

• “Release” to Air	21
• “Release” to Water	29,949
• “Release” to Land	130,002
Total “Release”	159,972



SURFACE MINING WITH MODERN TECHNOLOGIES



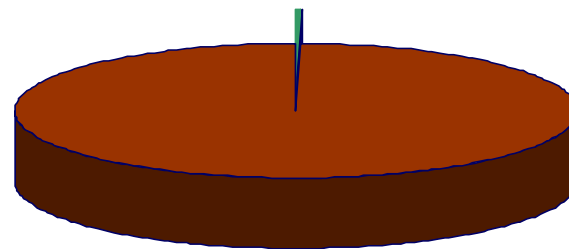
CC&V - EPCRA Reporting

- 1999 = 99.8% of reported “releases” are naturally-occurring metal compounds in rock
- 2000 = 99.9% of reported “releases” are naturally-occurring metal compounds in rock
- 2001 = 99.9% of reported “releases” are naturally-occurring metal compounds in rock
- 2002 = 99.6% of reported “releases” are naturally-occurring metal compounds in rock
- 2003 = 99.7% of reported “releases” are naturally-occurring metal compounds in rock
- 2004 = 99.6% of reported “releases” are naturally-occurring metal compounds in rock
- Major “triggering” criteria is attributable to recycling activities. Use of decommissioned leach pad material for road base and blast hole stemming as authorized by the State is the primary trigger. Utilizing oil removed from heavy equipment as a fuel source for specially designed heaters at the maintenance shop is the secondary trigger.

CC&V - 2004 EPCRA Report Reported Quantities - By Media

“Releases” of Substances (lbs.)

- “Release” to Air 12,805
 - “Release” to Water 0
 - “Release” to Land 3,478,595
- Total “Release” 3,491,399



“Releases” would decrease by
99.6% to 12,805 lbs. if
recycling were discontinued.

Trapper Mine

- A surface coal mining operation located six miles south of Craig, Colorado.
- Provides approximately 1.8 million tons of coal annually for electric power generation.



Trapper Mine

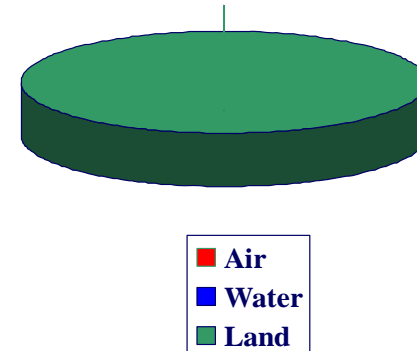
2004 EPCRA Report

- 99.9% of reported “releases” for Trapper Mine are naturally-occurring metal compounds in coal ash that is used as backfill in reclamation
- Barium constitutes 76.8% of reported “releases;” manganese 9.2%; vanadium 3.1%; chromium, cobalt, copper, lead, nickel, selenium, thallium and zinc make up the remaining 10.9%. Mercury constitutes 0.00007%.
- 100% of reported “releases” for Trapper are comprised of materials containing trace amounts of reportable compounds in concentrations far below de minimis levels.

Trapper Mine - 2004 EPCRA Report Reported Quantities - By Media

“Releases” of Substances

• “Release” to Air	339
• “Release” to Water	61
• “Release” to Land	2,305,256
Total “Release”	2,305,656



Releases would decrease by 98.9% to
24,141 lbs if the *deminimis* exemption
were applied to coal ash.

Studies on Coal Ash Health Effects

- EPA's report to Congress on coal ash confirms ash is non-hazardous due to low toxicity.
- Harvard Center for Risk Analysis evaluated utility ash products and characterized them as “high volume and low risk.”

Coal Ash Management



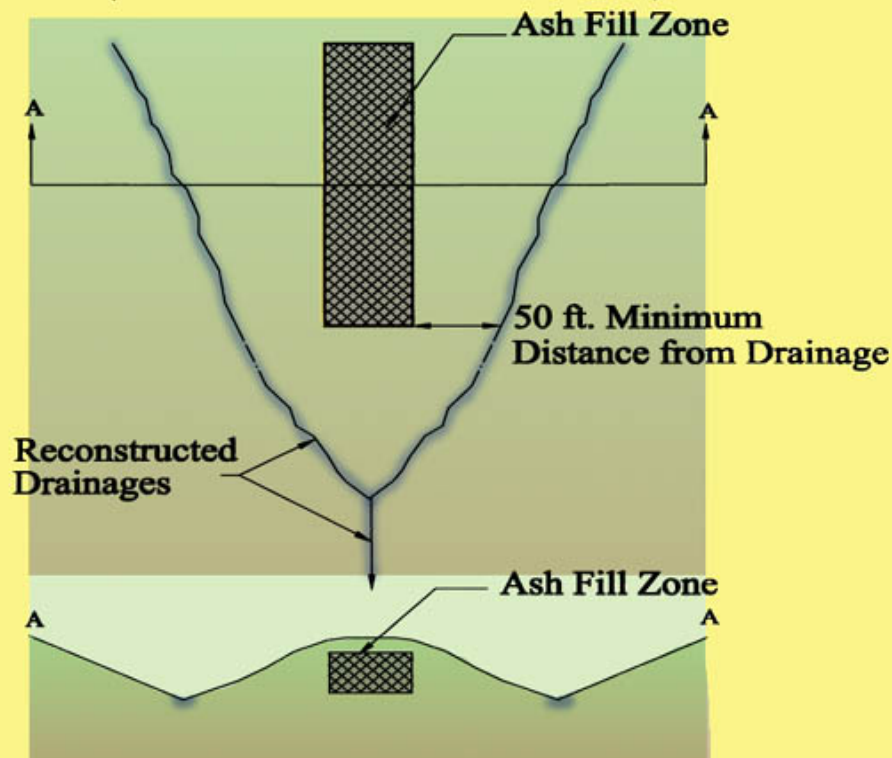
- Coal ash is used in mine reclamation as structural fill.
- Alternative would be to take up volume at county landfill.



Trapper Mine Reclamation Process

Protecting surface water

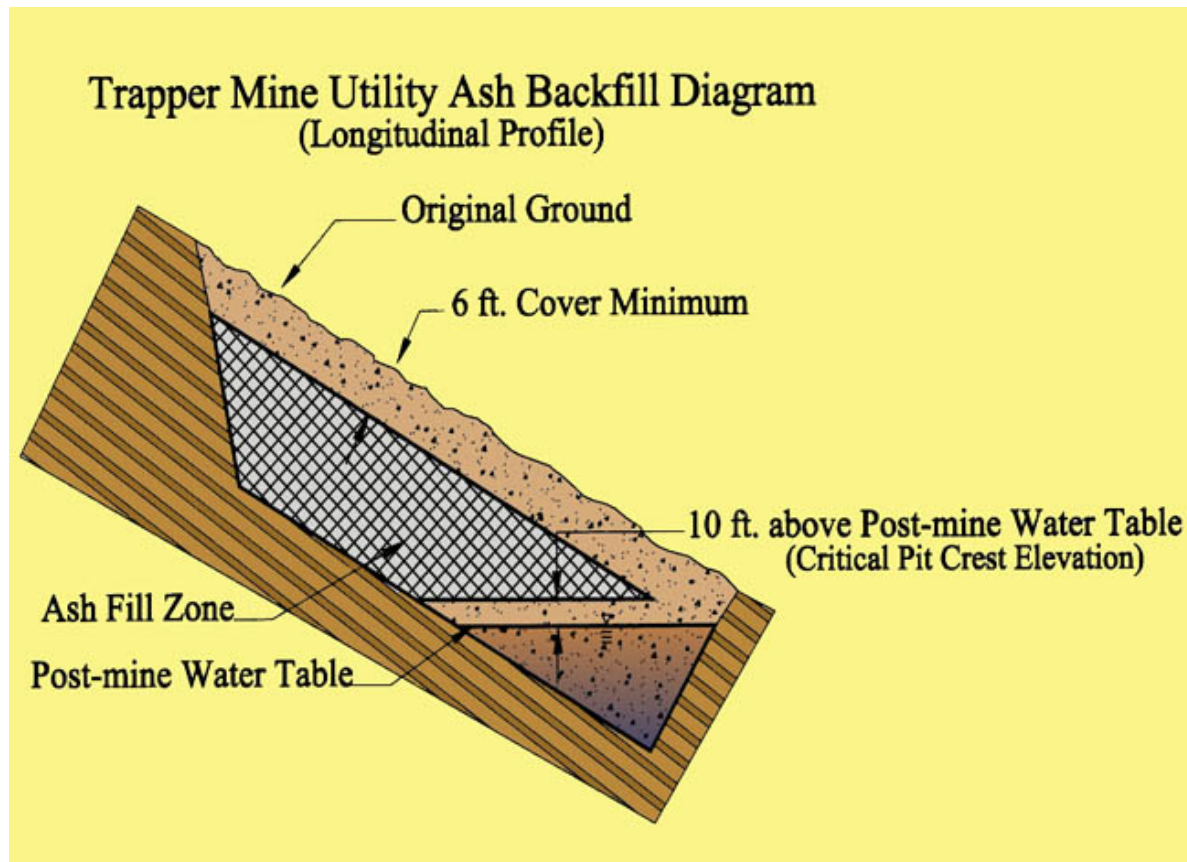
Trapper Mine Utility Ash Backfill Diagram
(Plan and Cross-Section Views)



- Ash is placed at least 50 feet horizontally from surface drainage.

Trapper Mine Reclamation Process

Protecting ground water



- Ash is placed above the water table.
- Ash is covered with six feet of earthen material.
- A ground water monitoring network is in place.

Trapper Mine Regrade Process



RECLAMATION & SUITABLE POSTMINING LAND USES



TRI and Mining Operations

THE PRESENT

- Legislated Environmental Health & Land Use Controls Throughout Operations
- Naturally-Occurring Substances
- Planned and Engineered Components
- Public Participation Continuum
- Materials Placed on Land are Contained On Site and Reclaimed
- Most Air Emissions are Retained On Site (do not reach “ambient air”)
- Water - Many Operations are Non-Discharging
- Waste Prevention and Minimization

TRI and Mining Operations

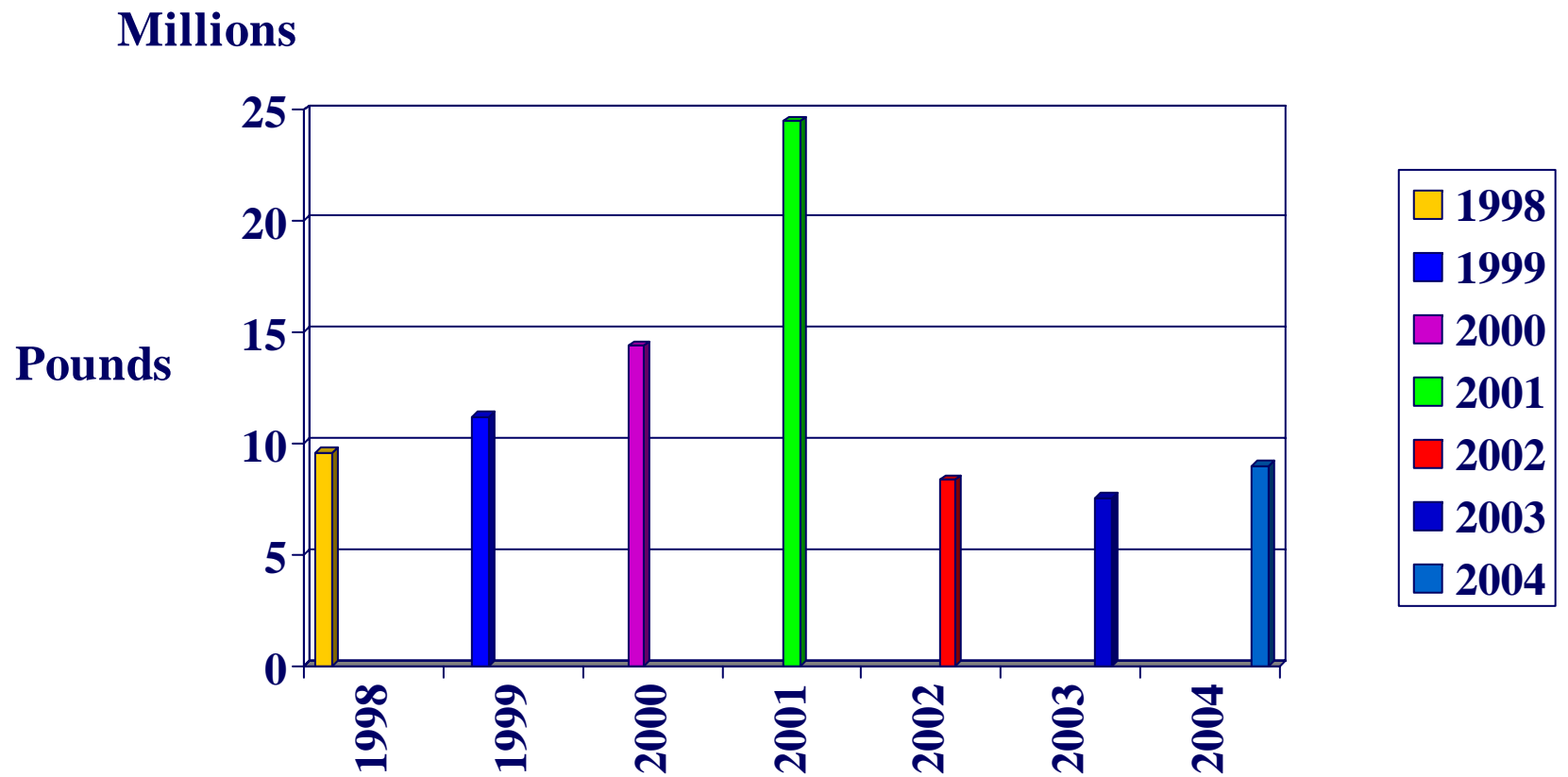
THE FUTURE

- Naturally-Occurring Compounds Accompany the Ore and Coal Ash
- A Sustainable Industry Produces More Ore/Coal Ash (“Productivity”) More Efficiently (“Less Labor and Capital Investment”)
 - Therefore, “Sustainability” = More Pounds of TRI-Substances
 - True “Wastes” are Minimized

Summary

- “RELEASES” DO NOT EQUATE TO POLLUTING OR POLLUTION
- “RELEASES” PRIMARILY (>90%) OF NATURALLY OCCURRING SUBSTANCES IN ROCK AND COAL ASH TO LAND
- “RELEASE” ACTIVITIES AUTHORIZED BY FEDERAL, STATE, AND LOCAL PERMITS OR AUTHORIZATIONS
- MATERIALS ARE MANAGED TO PROTECT HUMAN HEALTH AND ENVIRONMENT
- EPA REPORT OF “RELEASES” DOES NOT DIFFERENTIATE CONCENTRATIONS (PURE FORM v. DISSEMINATED) OR ADDRESS RISK (LACK THEREOF)
- CONTINUED COMMUNITY INVOLVEMENT BY INDUSTRY
- BOTTOM LINE -- NUMBERS DO NOT TELL THE STORY

TRI REPORTING 1998-2004



Colorado Mining Association

Pollution Prevention (P2) Program

- P2 Program developed by CMA in close cooperation with Colorado Department of Public Health and Environment
- Code of Practices for P2 developed under CDPHE grant
- P2 Code endorsed by the CDPHE and recognized by the EPA through a 2003 Friend of EPA Award
- Several CMA member companies have certified under the P2 Code, including:
 - Cripple Creek & Victor Gold Mining Company
 - Phelps Dodge Henderson Operations
 - Trapper Mine
- P2 Awards with special recognition were presented to each of these companies in 2004, 2005, and 2006 by CMA with an endorsement for consideration by the CDPHE in its Environmental Leadership Program