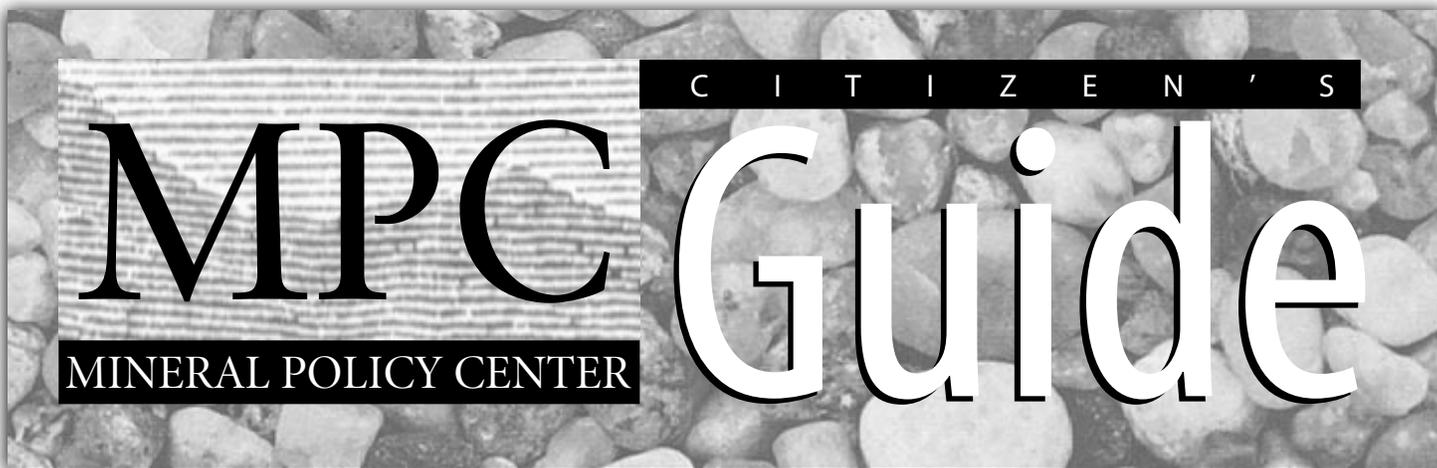


*Protecting Communities and the Environment*



# TRI Toolkit

*Using the Toxics Release Inventory to Promote Environmentally  
Responsible Mining in Your Community*

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2000

**MINERAL POLICY CENTER  
CITIZEN’S GUIDE: *TRI TOOLKIT***

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# OVERVIEW

**“TRI has focused all of us—  
industry and citizens—on environmental matters.”**

Wayne Forman, Agrico Chemical  
*USA Today*, May 26, 1993

## ***What is the Toxics Release Inventory (TRI)?***

TRI gives citizens solid evidence that can help ensure that mining companies behave in environmentally responsible ways. Established in 1986 by the Emergency Planning and Community Right-to-Know Act<sup>1</sup> (EPCRA) and administered by the EPA, TRI requires industrial facilities to disclose to the public the levels of pollutants they have discharged annually into the air, water, and land or transferred to other sites for incineration, recycling, and disposal.

In general, TRI has been considered a success by government officials and citizens alike. The Right-to-Know Net has said that “TRI is unique among environmental databases because of the multimedia data it collects, and because it was specifically designed to facilitate public access.”<sup>2</sup>

## ***Why was it created?***

The Toxics Release Inventory was created in the aftermath of the Bhopal chemical accident<sup>3</sup> to provide U.S. citizens with information they could use to help prevent future disasters. It is a form of preventative medicine that both citizens and companies should welcome and use as a tool to increase public awareness, decrease waste, increase preparedness, and limit the chances of future accidents.

## ***Why should I care?***

Hardrock mining creates up to two billion tons of solid waste every year in the United States, more than nine times the municipal solid waste produced by all U.S. cities.<sup>4</sup> These wastes contain lead, arsenic, cadmium and copper, which are linked to cancer and other human health effects. Mining waste has also polluted more than 12,000 miles of our nation's waterways and 180,000 acres of our lakes and reservoirs.<sup>5</sup>

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<sup>1</sup> The purpose of EPCRA is to promote emergency planning, to minimize the effects of an accident such as occurred at Bhopal, and to provide the public with information on releases of toxic chemicals in their communities.

<sup>2</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23835.

<sup>3</sup> The Bhopal disaster, an accidental release of methyl isocyanate at Union Carbide's pesticide manufacturing plant in Bhopal, India in 1984 killed about 3,000 people and injured hundreds of thousands, and was a major international news story. Around the same time, a similar incident occurred at another Union Carbide facility in Institute, West Virginia, where more than 100 residents were hospitalized after toxic fumes were released from the plant's pesticide manufacturing operations. (Shelley A. Hearne, “Tracking Toxics,” *Environment*, Vol. 38, No. 6, July/ August 1996, p. 6)

<sup>4</sup> U.S. EPA, Report to Congress, *Wastes from the Extraction and Beneficiation of Metallic Ores, Phosphate Rock, Asbestos, Overburden from Uranium Mining and Oil Shale*, Washington D.C., December 1985, p. 6-6.

<sup>5</sup> Robert L.P. Kleinmann, “Acid Mine Drainage,” *Engineering and Mining Journal*, July 1989, p. 161.

When TRI data is released in March 2000, the hardrock mining industry will rocket to the top of the first TRI report of the new millennium. The hardrock mining industry will very likely represent the top ten polluters in almost all states where hardrock mining occurs.

Because of these staggering figures, when the TRI data on mining is released it will provide powerful leverage for citizens to hold an otherwise well-insulated industry accountable.

The power of the TRI tool is fortunate and timely. About the time EPA releases the TRI hardrock mining data for the first time, Congress will be considering two issues that could **increase** the amount of hardrock mine waste dumping. In spring, mining industry advocates in Congress will attempt to change the 1872 General Mining Law to legalize the unlimited dumping of mining waste on publicly owned lands. This waste would include the toxic waste reported in TRI. Also this spring, Congress will try to weaken or halt new environmental mining safeguards. These new safeguards could both limit the amount and better control the disposal of TRI mining wastes. TRI, in conjunction with this toolkit, can be used to reinforce to Congress the magnitude of what "unlimited" waste dumping means and why we need stronger regulations to control it (see TRI and Preventing Illegal Waste Dumping).

### ***What does the EPA say about mining?***

In a 1987 study the Environmental Protection Agency (EPA) rated problems related to mining waste as second only to global warming and stratospheric ozone depletion in terms of ecological risk. The report concludes "with high certainty" that the release to the environment of mining waste "can result in profound, generally irreversible destruction of ecosystems."

Earlier, in a 1985 report, the EPA stated that mining for hardrock minerals, asbestos, and phosphate alone generates 1-2 billion metric tons of waste each year, and that "*perhaps 56% of the waste generated could be considered potentially hazardous to human health or the environment.*"<sup>6</sup> This hazardous waste is what is reported in TRI.

### ***What do we know about the size of TRI releases from mining?***

The amount of waste the mining industry is likely to report was revealed when Kennecott Copper mistakenly reported on the waste produced in 1987 at its Bingham Canyon Mine in Utah. Kennecott Copper disclosed that they produced over 158 million pounds of waste. Among the listed toxic chemicals released were copper, arsenic, barium, zinc, chromium, lead cadmium, selenium and silver. Of the almost 19,000 facilities that reported to TRI in 1987, Kennecott Copper was ranked fourth in the nation in terms of overall toxic chemical releases to the environment. In that year, that one mining facility released more reportable toxic chemicals than all the reporting polluters in the entire state of New Jersey.<sup>7</sup>

The release of this information is likely to lead to pressure for the mining industry to operate more efficiently, generate less waste, and leave a smaller environmental footprint.

<sup>6</sup> Right-to-Know Network, TRI database. [www.rtk.net](http://www.rtk.net).

<sup>7</sup> U.S. EPA, *Toxics in the Community: National and Local Perspectives*, Washington D.C., October 1990, p. 44.

## ***Who uses TRI data?***

### **Citizens**

TRI enables citizens to become more aware of chemical usage in their area and to use this knowledge to affect environmental policy and work for change. TRI data can enable the public to work with industry and government to reduce toxic chemical releases and the risks associated with them. More than 1,500 citizen groups have already made use of TRI data to protect their communities and the environment.<sup>8</sup>

### **Governments and Agencies**

TRI data can be used by federal, state, and local governments to create legislative solutions to environmental problems. For example, in 1989, Louisiana used TRI data as the basis for passing a new air toxics law requiring a 50% reduction of emissions by 1994.<sup>9</sup> At the federal level, lawmakers discovered through TRI data that the nation's original Clean Air Act was not adequate, and in 1990, amendments were made.<sup>10</sup>

TRI is used by EPA and state and local agencies to help assess compliance with other environmental laws, and to target areas where greater enforcement or regulation is needed. EPA also uses TRI as a baseline for measuring improvements in companies across the nation and monitoring pollution prevention efforts.<sup>11</sup>

### **Industry**

Industry can use TRI data to obtain an overview of the release and management of toxic chemicals, to identify pollution prevention and release reduction targets, and to measure progress towards these goals. The publicity that has resulted from the availability of TRI data has prompted many facilities to pledge toxic chemical release reductions, and work with communities to develop effective strategies for reducing environmental and human health risks.

### **Press**

The press can make use of TRI data to expose those industries that are environmentally and socially responsible and those that are not. Journalists need timely data presented in a meaningful context in order to present an effective message to the public.

## ***Can I really make a difference?***

Yes! At the grassroots level, citizens are winning more battles to force the mining industry to behave responsibly. TRI is another tool citizens can use to protect their communities and the environment from the devastating impacts mining can have. When TRI data for the hardrock mining industry becomes available, citizens will be able to put pressure on mining companies to lower releases, and to lobby on government officials and policymakers to design more effective programs and better target enforcement actions.

<sup>8</sup> U.S. EPA, OPPT, 1996 Toxics Release Inventory, *Public Data Release-10 Years of Right-to-Know*, May 1998, p. 8.

<sup>9</sup> U.S. EPA, OPPT, *Using the Toxics Release Inventory*, [www.epa.gov/opptintr/tri/triuse.htm](http://www.epa.gov/opptintr/tri/triuse.htm).

<sup>10</sup> U.S. EPA, OPPT, *TRI CD-ROM User's Manual*, August 1997, p. 1-9.

<sup>11</sup> U.S. EPA, OPPT, *Using the Toxics Release Inventory*, [www.epa.gov/opptintr/tri/triuse.htm](http://www.epa.gov/opptintr/tri/triuse.htm).

In the absence of strict environmental protection with regard to hardrock mining, TRI data may be particularly important. Informed public action can exert positive influence on corporate decision-makers and government officials to develop effective environmental protections.

This toolkit is intended to familiarize citizens and mining activists with TRI and prepare them to effectively use the mining industry's TRI data when it becomes available.

# NUTS AND BOLTS OF TRI

To effectively use TRI data, citizens need to first understand what TRI is. This part of the toolkit provides citizens with a description of the nuts and bolts of TRI, including its legal framework, reporting requirements, likely chemical releases, as well as relevant exemptions and limitations.

## TRI'S LEGAL FRAMEWORK

**“This mandatory disclosure has done more than all other legislation put together in getting companies to voluntarily reduce emissions.”**

Millard Etling, Dow Chemical  
*The Atlanta Constitution*, August 22, 1991

## EPCRA

Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) requires certain manufacturing facilities to file annual reports to the EPA on releases and transfers of listed “right-to-know” toxic chemicals. This multi-media reporting includes information on releases to air, land, surface water and deep-injection wells, as well as transfers to public sewers and treatment, storage and disposal facilities. EPA must computerize this information into a “toxics release inventory,” and make it available to the public.

## PPA

In 1990, the Pollution Prevention Act (PPA) was introduced in response to findings that source reduction is a more desirable alternative than post-generation waste reduction measures. As a result, in 1991 reporting requirements for TRI changed. Facilities are now required to indicate the amounts of chemicals recycled, used for energy recovery and treated either on- or off-site. Facilities must also indicate the source reduction activities they have implemented.

## EXPANSION OF TRI TO MINING

When the TRI program began in 1986, mining was not included among the specific manufacturing industries targeted. In 1990, Mineral Policy Center, along with the Environmental Defense Fund and the National Audubon Society, petitioned EPA to include the mining industry in the TRI program.<sup>12</sup> Finally, on May 1, 1997, EPA published its Final Rule adding seven industry groups, including metal mining, to the list of facilities subject to TRI reporting requirements.<sup>13</sup>

When the EPA published this final rule, it stated that one of the primary reasons EPA was adding the mining industry was because of the benefits the information from mining operations would

<sup>12</sup> Mineral Policy Center, Environmental Defense Fund and National Audubon Society letter to William K. Reilly, Administrator, EPA, October 10, 1990.

<sup>13</sup> 62 FR 23833.

have for the general public, not just local communities. "... The 'community' which may benefit from data is broader than the individual citizens living or working in close proximity to mining operations."<sup>14</sup> According to EPA, expansion of TRI to the mining industry is important because with TRI information, the public will have improved knowledge of chemicals involved in mining, and can use that information to better assess environmental and human health risks.<sup>15</sup>

## **NMA v. EPA**

Despite the need for and importance of informing the public about mining waste and toxic chemical releases at mines, the National Mining Association (NMA) and the Colorado Mining Association filed a complaint on December 19, 1997 challenging the portions of the EPA's Final Rule that apply to the addition of metal and coal mining operations to TRI reporting.<sup>16</sup>

In our view, this suit is an attempt by the mining industry to avoid the negative publicity and public relations burden it will face once TRI data from mining operations is made public. The NMA has expressed its concern by stating: "Once metal extraction activities begin reporting under the TRI program, mining, by reason of the sheer volume of material involved, will head the list ... and will be unfairly pegged as a major 'polluter' under the TRI program."<sup>17</sup> It is unfortunate that the NMA has taken such a position against public disclosure of toxic releases when so many other industries have found the program to be beneficial (see Quotes from the Industry).

The NMA's suit, which is still pending in the courts, is unlikely to result in TRI reporting requirements for the mining industry being revoked.

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<sup>14</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23857.

<sup>15</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23857.

<sup>16</sup> *National Mining Association and Colorado Mining Association v. Carol Browner, Administrator and the U.S. EPA*, Complaint filed in the U.S. District Court for the District of Colorado, December 19, 1997.

<sup>17</sup> National Mining Association, *Mining and the Struggle for America's Economic Future: A Contest Between Wide Possibilities and Narrow Views*.

## REPORTING REQUIREMENTS

**“Public disclosure of the Toxic Release Inventory has been a powerful motivator to companies ... to increase our efforts to reduce emissions. The TRI provides a means where the public can track our progress and do so on a consistent, measurable, basis. We are convinced that this activity will ultimately result in cost savings for the company and a competitive advantage.”**

J. Ronald Condray, Monsanto

*World Wildlife Fund Fact Sheet*, April, 1992

Each facility that meets the applicability requirements submits a TRI reporting form, known as Form R, for each TRI chemical it has manufactured, processed, or otherwise used in amounts exceeding the thresholds. Facilities must report to both the EPA and to the state in whose jurisdiction the facility is located.

### WHO MUST REPORT

Total annual releases of right-to-know chemicals must be reported by any facility that meets all of the following facility criteria:

- ✓ is in manufacturing Standard Industrial Classification (SIC)<sup>18</sup> Codes 20 through 39;
- ✓ employs ten or more full time workers, and
- ✓ manufactures, processes, imports over 25,000 pounds or uses over 10,000 pounds of a listed right-to-know chemical in a calendar year<sup>19</sup>

### WHAT IS REPORTED

The three most important aspects of TRI to citizens are likely to be:

1. Reported releases of toxic chemicals to air, land and water,
2. Amount of production-related waste, that is, the amount of waste prior to any treatment, recycling or disposal, and
3. Comparative ranking among facilities or states.

More specifically TRI requires the following:

- ✓ Basic information identifying the facility,
- ✓ Name and phone number of a contact person,
- ✓ Environmental permits held,
- ✓ Amounts of each listed chemical released on-site during the year to the air, water and land, and injected underground (includes both accidental spills and routine emissions),
- ✓ Amounts of chemicals transferred off-site for recycling, energy recovery, treatment, and disposal,
- ✓ Amounts of each chemical recycled, combusted for energy recovery, treated or disposed at the facility,

<sup>18</sup> SIC is essentially a means to categorize industry according to what they do.

<sup>19</sup> For a complete discussion of reporting thresholds, see Reference Information, Thresholds.

- ✓ Types of activities conducted at the facility involving the toxic chemical,
- ✓ Maximum amount of the chemical present on-site at the facility during the year,
- ✓ Source reduction activities and methods used to identify those activities, and
- ✓ Production index that can be used to relate changes in reported quantities of toxic chemicals in waste to changes in production.

This wealth of information available to the public is a “report card” for the industrial community and can be used by citizens and community groups to evaluate local facilities through comparisons, determine how toxic chemicals are used, and, with other information, evaluate potential health risks for families and communities.

## **PBTs**

Reporting thresholds for persistent, bioaccumulative and toxic chemicals (PBTs) changed in 2000, with the first report under the new thresholds due July 1, 2001 and released in 2002. In the PBT rule, EPA removed the *de minimis* exemption, range reporting and Form As for all PBT chemicals. In other words, for these especially toxic chemicals, some of the loopholes of the TRI reporting requirements will be closed.

## CHEMICAL RELEASES

**“I don’t want to leave the impression that we didn’t have these priorities in the past ... But [with TRI] there is much more pressure for us to reduce discharges, and we are reducing them.”**

James F. Dutcher, Louisiana American Cyanamid  
*The New York Times*, March 24, 1991

### TRI CHEMICALS LIKELY TO BE REPORTED

A significant portion of the manufacturing, processing and otherwise used activities at metal mining facilities will involve heavy metals present in ores being extracted. The following table from the EPA’s Guidance Document for metal mining facilities (January 1999) gives citizens an idea of the toxic chemicals they can expect to be reported by the mining industry.

### EPCRA SECTION 313 CHEMICALS COMMONLY MANUFACTURED, PROCESSED, AND OTHERWISE USED AT METAL MINING FACILITIES

<b>Chemicals in Ore Metal Mining Facilities May Manufacture and/or Process</b>	<b>Chemicals Metal Mining Facilities May Otherwise Use</b>
Aluminum (fume or dust)	Acrylamide
Antimony/ Antimony compounds	Ammonia
Arsenic/ Arsenic compounds	Benzene
Barium/ Barium compounds	Bromine
Beryllium/ Beryllium compounds	Bromoform
Cadmium/ Cadmium compounds	Chlorine
Chromium/ Chromium compounds	Cresols
Cobalt/ Cobalt compounds	Cyanide compounds
Copper/ Copper compounds	Cyclohexane
Cyanide/ Cyanide compounds	Ethylbenzene
Lead/ Lead compounds	Formaldehyde
Manganese/ Manganese compounds	Glycol Ethers
Mercury/ Mercury compounds	Hydrazine
Nickel/ Nickel compounds	Hydrochloric acid (acid aerosols)
Selenium/ Selenium compounds	Naphthalene
Silver/ Silver compounds	Nitric acid
Thallium/ Thallium compounds	Phenol
Vanadium (fume or dust)	Phosphoric acid
Zinc (fume or dust)/ Zinc compounds	Propylene
	Sulfuric acid (acid aerosols)
	Thiourea
	Toluene
	Xylene

Source: U.S. EPA, OPPT, Washington D.C., EPCRA Section 313 Industry Guidance-Metal Mining Facilities, Jan. 1999, p. 3-3.

## **TYPES OF RELEASES LIKELY TO BE REPORTED**

### **Releases to Air**

The main release to air by mining facilities will be particulate emissions of metals and metal compounds during the drilling, blasting, crushing and grinding of ore.<sup>20</sup>

Acid aerosols generated during leaching operations are another form of air emissions to be reported.

### **Releases to Water**

Mine water will have to be reported. This is formed during the continuous pumping of enormous quantities of water during extraction, which is then discharged into surface waters, on-site water bodies or publicly owned treatment works.<sup>21</sup>

Water pollution from acid mine drainage (AMD) is one of the most serious environmental problems facing the mining industry. AMD occurs when sulfides in waste rock, tailings, spent ore from leach operations, and mine structures, are exposed to oxygen and water to create sulfuric acid. The acidic waters in turn dissolve and mobilize heavy metals. Mines will have to report TRI chemicals in AMD if thresholds are exceeded.<sup>22</sup>

### **Releases to Land**

Hardrock mines will have to report TRI chemicals in tailings, a form of mining waste containing heavy metals and chemical agents used in processing the ores, such as cyanide or sulfuric acid.<sup>23</sup> Tailings are usually disposed in on-site surface impoundments or tailings ponds and the contents of those impoundments or ponds must be reported.

Additionally, hardrock mines using heap and dump leach processes must report TRI chemicals that remain in "spent ore" once leaching activity is complete.

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<sup>20</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 4-25.

<sup>21</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 4-36.

<sup>22</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 4-36.

<sup>23</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 4-40.

## EXEMPTIONS AND LIMITATIONS

### OVERBURDEN IS EXEMPT

Overburden is defined by EPA as “unconsolidated material that overlies a deposit of useful materials or ores.”<sup>24</sup> It does not include any portion of ore or waste rock. EPA has exempted TRI chemicals in overburden from TRI reporting based on its belief that overburden contains toxic chemicals in negligible amounts and that reporting is unlikely to provide the public with any valuable information.<sup>25</sup>

### WASTE ROCK IS NOT EXEMPT

Waste rock is considered distinct from overburden for purposes of TRI reporting and is not exempt. “Waste rock is generally considered that portion of the ore body that is barren or sub-marginal rock or ore which has been mined but is not of sufficient value to warrant treatment and is therefore removed ahead of the milling processes.”<sup>26</sup> Disposal of waste rock, and therefore toxic chemicals in the waste rock, must be reported, if the threshold for those chemicals is exceeded at the facility.

### DE MINIMIS EXEMPTION

The *de minimis* exemption is granted by EPA to all industries reporting under TRI in certain cases, but has particular importance with regard to the mining industry. If the amount of TRI chemicals present, processed or otherwise used is below a minimum concentration level, that amount is exempted from threshold determinations, as is release and other waste management calculations. (See Reference Information for more on the *de minimis* exemption.)

### LIMITATIONS OF TRI DATA

- Fewer than 1% of commercial chemicals are included in TRI.
- Facilities ordinarily estimate, rather than measure, releases.
- Some covered facilities fail to report as required.
- Companies are not required to examine prevention alternatives.
- Companies do not report workplace and community exposure levels.
- Chemicals in products (as opposed to those in waste) are not reported.
- TRI data is insufficient to track pollution prevention.
- Companies sometimes claim “phantom” reductions on paper that in reality reduce neither releases nor production waste.
- Data is perpetually out-of-date due to the long time lapse between the date a company files its report with the EPA and the date the data from those reports appears online.

<sup>24</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23859.

<sup>25</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23859.

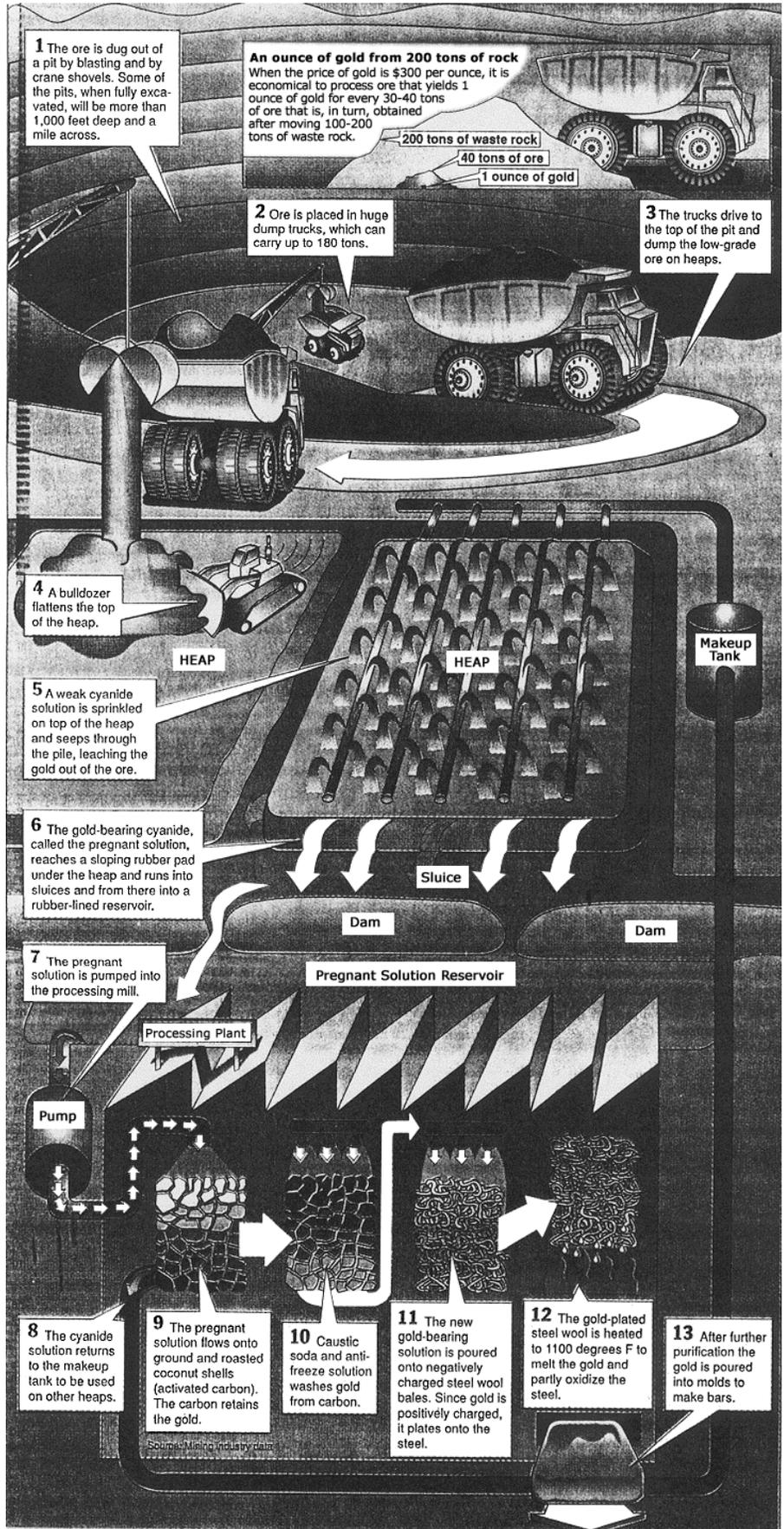
<sup>26</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol. 62, No. 84), p. 23859.

- There are many loopholes in TRI that the reader should be aware of as they sift through TRI data. For instance, sulfuric acid must only be reported when it is released to air. Sulfuric acid releases to land and water occur as well, and while just as dangerous, are not required to be reported.

A detailed discussion of these limitations is available in Reference Information.

# THE TYPICAL MODERN MINING PROCESS

**The 'heap-leach' method:** Low Grade ore yielding as little as .01 ounces of gold per ton has become valuable as the price of gold has climbed to \$300 per ounce and higher.



(Credit: The Sacramento Bee)

# ACCESSING THE DATA

**TRI is “a good way to focus company attention on these issues. We had been seeking measures to reduce [emissions] but we probably would have taken a longer period of time to do so.”**

Jim Heiser, Aerochem Inc.

*The Los Angeles Times*, December 1, 1991

Several options for locating TRI data are discussed below. These include: four online resources, an EPA CD ROM, EPA's printed Public Release Data, and Form Rs available through state agencies. Additionally, there are two online resources that citizens may want to use to bolster their campaign against a particular mining company.

If at any point you have any questions regarding EPA's TRI data, you can call the EPA TRI User Support Line at 202.260.1531. This support line can be used to facilitate better understanding of the information provided on EPA's TRI website, to order CD ROM on TRI, or to obtain state fact sheets, state agency information and TRI desk reference materials.

## FINDING TRI DATA ONLINE

Four online sources of TRI data currently exist: 1) EPA's TRI Explorer, 2) Right-To-Know Network's databases, 3) EPA's Envirofacts, and 4) Environmental Defense's Chemical Scorecard.

### **TRI EXPLORER: WWW.EPA.GOV/TRI**

At the time of this toolkit's release, the EPA was finalizing a new TRI website database called TRI Explorer. This database provides more limited information than EPA's Envirofacts (discussed below), but will be quite useful if the user is interested in looking solely at release data and if the user wants to rank the release data by facility or state for press or campaign strategy purposes. TRI Explorer promises to be more user-friendly than Envirofacts and it offers special features such as the ranking capability.

EPA does have plans to include data on other waste management activities, including source reduction, in TRI Explorer in the future. However, for now, if the user needs complete information from a Form R, s/he should consult Envirofacts.

### **RIGHT-TO-KNOW NETWORK: WWW.RTK.NET**

RTK NET provides access to numerous environmental databases, including the TRI database. Users can link to the TRI database from the RTK NET homepage by clicking the "Databases" option. From Databases, users can choose to search all environmental databases through the

“Master Search” option or to search solely the TRI database through the “Toxics Release Inventory” option. You can also go directly to TRI Search at [www.rtk.net/trisearch.html](http://www.rtk.net/trisearch.html).<sup>27</sup>

From TRI Search, users can perform a search via the following avenues:<sup>28</sup>

- **GEOGRAPHIC AREA:** Gives data on all facilities in a user-specified geographic area; this option also allows the user to search for specific chemicals released by facilities within a specified area.
- **FACILITY:** Gives data on a particular facility, as well as specific chemicals if so desired.
- **INDUSTRY:** Gives data on all facilities listed under a particular Standard Industrial Classification (SIC) code; this option also includes a list of various SIC codes from which the user can choose.
- **PARENT COMPANY:** Provides data on all facilities owned by a particular parent company.
- **OFFSITE:** This option searches for all waste going to a particular destination.

Within each of the above search methods, the user is given several fields within which to enter information. The user may choose to complete as little or as many of these fields as necessary. The user may also choose the year, level of detail, and sort order of the data retrieved from various options. *For instance, sorting by total facility releases in a given area, a citizen can easily rank the top 10 polluters in his or her state. This is an especially useful tool when creating a press release as it puts the data into a meaningful context for the journalist and the public.*

Furthermore, the user can access explanations of the various fields, as well as tips on how best to use them, by clicking on the headings located on the left of the fields. Also, by clicking on the “About RTK Data” option located on most pages within the TRI database, one can get additional information on TRI data.

In addition, search results provide links to helpful hints and information resources. For instance, the user can link to the Environmental Defense's Scorecard for a specified facility and to Integrated Risk Information System (IRIS)<sup>29</sup> chemical toxicity summary for a specified chemical.

While both RTK Net and Envirofacts (below) provide comprehensive TRI data, RTK Net presents the data in a more easily digestible fashion, as well as offers the special features noted above.

## **ENVIROFACTS: WWW.EPA.GOV/ENVIRO**

Envirofacts is an application within the EPA's main website ([www.epa.gov](http://www.epa.gov)) that serves as a one-stop library for environmental data. TRI is just one of several environmental databases available

<sup>27</sup> [www.rtk.net/www/rtknet/webpage/databas3.html](http://www.rtk.net/www/rtknet/webpage/databas3.html).

<sup>28</sup> [www.rtk.net/www/data/tri\\_help.html#AREA](http://www.rtk.net/www/data/tri_help.html#AREA).

<sup>29</sup> IRIS is an online database built by the EPA. It contains EPA carcinogenic and non-carcinogenic health risk information on over 500 chemicals. The risk assessment data have been scientifically reviewed by groups of EPA scientists and represent EPA consensus.

on Envirofacts.<sup>30</sup> The user may choose to retrieve only TRI data or to query all available databases at once.

*(The user should keep in mind that it may be better to go to the TRI Explorer website at [www.epa.gov/tri](http://www.epa.gov/tri) to access a more user-friendly TRI database if simply interested in ranking release data by facilities or by geographic area.)*

Information can be retrieved directly from the Envirofacts TRI database by completion of an online form. From the Envirofacts Homepage, one may click on “Queries, Maps, and Reports” and then choose from several different types of queries under the “Toxics Release Inventory” heading<sup>31</sup>: TRI Facility Query, EZ Query, Customized Query, or State Reports. Each query contains a User’s Guide to assist the user in completing the query form. Similar to the RTK NET, one’s search may be narrowed by selecting from several search criteria:

- FACILITY
- GEOGRAPHY
- STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE
- CHEMICAL NAME

Once the user has submitted a query using one or more of the search criteria, Envirofacts will retrieve a host of information, some of which is useful and some of which is expendable. (It may take some time to sort through this data.) The user will be given a page of “TRI Query Results” from which to choose several data options. If the user clicks on a value under the “Submissions” column, he or she will go to a table of the chemicals reported by a facility. The user may then view the detailed Form R Report submitted by a facility for a reported chemical or all of the chemicals reported by a facility by clicking on the appropriate option.

Unlike RTK Net, Envirofacts does not aggregate chemical production and release amounts, nor does it present information in an easily understandable manner. However, it is the original source from which RTK NET gains its information.

## **ENVIRONMENTAL DEFENSE’S CHEMICAL SCORECARD: WWW.SCORECARD.ORG**

Environmental Defense’s “Chemical Scorecard” combines scientific, geographic, technical and legal information from over 150 electronic databases to produce detailed local reports on toxic chemical pollution. Users can get reports on any of 50 states, 2,000 counties, 5,000 zip codes or 17,000 individual TRI facilities. Scorecard is very user-friendly for accessing TRI data. Simply type in your zip code to find out what pollutants are being released into your community and what companies are responsible. The same information can also be retrieved by simply using a map of the U.S. and zooming in on detailed street maps of neighborhoods.<sup>32</sup>

<sup>30</sup> The general public can also use Envirofacts to track information about Superfund sites, hazardous waste, safe drinking water, discharges to water, toxic releases, air releases, and grant information.

<sup>31</sup> Users should note that Envirofacts also has a “TRI Customized Query Engine” located at [www.epa.gov/enviro/html/tris/adhoc.html](http://www.epa.gov/enviro/html/tris/adhoc.html) where they can select one data element in TRI to be the primary focus of their query and enter search criteria to target specific records from the database.

<sup>32</sup> [www.scorecard.org/env-releaseas/us-map.tcl](http://www.scorecard.org/env-releaseas/us-map.tcl).

In addition to providing reports on toxic chemical releases in a given area, Scorecard provides users with several unique capabilities:

- **SETTING PRIORITIES:** It allows users to find out the most significant environmental problems in their community by listing the top-ranking issues in their area, based on the judgment of scientists and stakeholders who participated in a comparative risk project. Project reports with detailed local information about these problems can be retrieved by just clicking on the community of interest on a map.<sup>33</sup>
- **POLLUTION RANKINGS:** Perhaps the most useful feature of Scorecard which not only fits TRI data into an easily comprehensible context, but also empowers citizens to put pressure on companies to reduce their releases of toxic chemicals, is the pollution ranking feature.<sup>34</sup> The site tracks approximately 650 TRI chemicals and chemical categories using 40 different ranking criteria. Users can rank facility pollution for a specific TRI category (e.g. total environmental releases), for recognized or suspected health effects (e.g. releases of recognized carcinogens to air), or by a risk-weighting (e.g. ozone depleting potential). To get a list of chemicals in one of these categories for a given area, users just choose the category, and the area and industrial sector they are interested in.
- **ABOUT THE CHEMICALS:** Scorecard provides detailed information on more than 6,500 chemicals, including all the chemicals used in large amounts in the U.S. and all chemicals regulated under major environmental laws. It allows users to find out whether a chemical has been tested for health effects and how harmful it may be for them and the environment. The information can be searched by typing in the chemical's name or its standard identification number.<sup>35</sup>
- **HEALTH EFFECTS:** Scorecard uses information from scientific sources and regulatory agencies to provide listings of chemicals that can cause cancer, harm the immune system, contribute to birth defects, or lead to any of nine other types of health impacts. Chemicals whose health hazards are widely recognized are separated from chemicals whose health hazards are suspected on the basis of more limited data. The list can be limited to include only the chemicals covered by TRI.<sup>36</sup>
- **REGULATORY CONTROLS:** Users can find out about regulatory programs that govern chemicals, as well as what chemicals are major environmental hazards.<sup>37</sup>
- **DISCUSSION FORUMS:** Citizens can share their views, ask questions, or give answers about local chemical pollution, polluters and pollutants.<sup>38</sup>

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<sup>33</sup> [www.scorecard.org/comp-risk](http://www.scorecard.org/comp-risk).

<sup>34</sup> [www.scorecard.org/ranking](http://www.scorecard.org/ranking).

<sup>35</sup> [www.scorecard.org/chemical-profiles](http://www.scorecard.org/chemical-profiles).

<sup>36</sup> [www.scorecard.org/health-effects](http://www.scorecard.org/health-effects).

<sup>37</sup> [www.scorecard.org/chemical-groups](http://www.scorecard.org/chemical-groups).

<sup>38</sup> [www.scorecard.org/bboard](http://www.scorecard.org/bboard).

- **TAKE ACTION:** An innovative feature of Scorecard allows the public to take action against pollution and polluters in their communities without leaving their chairs. By just the click of a mouse, Scorecard enables users to send a free fax to the facilities that rank in the worst 20% in a given area in terms of emissions or waste generation reported to TRI. The “Take Action” option also allows citizens to join an online discussion, send an email to EPA in support of efforts to improve TRI, network with environmental groups, and learn how to prevent pollution.

Scorecard provides users with very useful additional features such as a ranking system that combines TRI data with health effects information from scientific sources and regulatory agencies which puts TRI data into a human health context. In comparison, TRI data on EPA's Envirofacts and RTK NET do not contain this type of health effects information.

Scorecard has its limitations. Since it is based entirely on computer-accessible information sources, all the information it uses must originally have been available in a computer-readable form such as an electronic database. In addition, it takes four months for Scorecard to be updated with data once EPA announces the public release TRI data.<sup>39</sup> Finally, Scorecard does not provide much detail about off-site transfers of toxic wastes, so users who require this type of TRI data should use RTK NET's website.<sup>40</sup>

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<sup>39</sup> *Frequently Asked Questions from Scorecard*, [www.scorecard.org/about/FAQs.html](http://www.scorecard.org/about/FAQs.html).

<sup>40</sup> *Frequently Asked Questions from Scorecard*, [www.scorecard.org/about/FAQs.html](http://www.scorecard.org/about/FAQs.html).

## OTHER RESOURCES FOR ACCESSING TRI DATA

The EPA has distributed TRI products to various locations, most of which are public libraries where the data can be accessed free of charge. Additionally, the following three resources provide complete TRI data to the public:

### EPA CD ROM

The entire TRI database is published by the U.S. EPA on CD ROM. The CD ROM provides flexibility to do advanced searches and to manipulate the data, but it is geared for the more advanced user. In addition to data on chemical releases, the two-disc set contains "Chemical Substance Fact Sheets" which provide reference material on the health and environmental effects of TRI chemicals. The software has the capability to search data by facility, location, chemical, Standard Industrial Classification code, as well as many other access points.

### EPA'S TRI PUBLIC DATA RELEASE

EPA compiles an annual analysis of the TRI data, called the "Public Data Release." It is available in hard copy as well as through the TRI homepage ([www.epa.gov/tri](http://www.epa.gov/tri)). According to the EPA, "this industry-by-industry focus permits a more detailed view of the sources of environmental releases of TRI chemicals, a closer perspective on industrial progress in reducing them, and a better understanding of industry practices in generating and managing TRI chemicals in waste."<sup>41</sup>

The Public Data Release also includes a separate book that lists the top ten facilities and chemicals by state.

### TRI DATA FROM STATE AGENCIES

Under TRI, facilities must report their releases not only to EPA, but also to the state in whose jurisdiction the facility is located. You can sometimes access TRI data on specific facilities from state agencies before it becomes available in EPA's complete national database.<sup>42</sup>

State TRI contacts in seven western hard rock mining states were queried as to how soon after companies submit their Form Rs<sup>43</sup> to the state, are the forms made available to the public, and whether the state stores TRI data on computerized databases.<sup>44</sup> All of the state agencies responded that a company's Form R is immediately available to the public upon its receipt. Only two of the states queried, however, Arizona and California, had TRI data on computerized databases. California provides tailor-made reports in response to specific information requested

<sup>41</sup> U.S. EPA, Office of Pollution Prevention and Toxics, 1996 Toxics Release Inventory Public Data Release- 10 Years of Right-to-Know, May 1998, p. 3.

<sup>42</sup> For TRI contacts in the states, call the EPCRA Hotline at (800) 535-0202 or go to the EPA's TRI website at [www.epa.gov/opptintr/tri/statecon.htm#AK](http://www.epa.gov/opptintr/tri/statecon.htm#AK).

<sup>43</sup> Each facility submits a TRI reporting form, known as Form R, for each TRI chemical it has manufactured, processed, or otherwise used in amounts exceeding the thresholds. Form Rs provide specific information regarding toxic releases to each environmental medium.

<sup>44</sup> States contacted: Alaska, Arizona, California, Colorado, Idaho, Nevada and Montana.

of companies,<sup>45</sup> and also provides summary information of TRI data on the Internet.<sup>46</sup> The other states indicated that they could provide copies of Form Rs though they may impose a charge depending on how much information is requested. Colorado said that they provide the information requested on disk.<sup>47</sup> Analyzing Form Rs for each chemical that a company reports to TRI is, however, a daunting task for the novice TRI user and is not often undertaken.

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<sup>45</sup> Telephone communication with Steve Hanna, California EPA, Department of Toxic Substances Control, April 12, 1999.

<sup>46</sup> Telephone communication with Steve Hanna, California EPA, Department of Toxic Substances Control, April 12, 1999.

<sup>47</sup> Telephone communication with Kirk Mills, Colorado Emergency Planning Commission, April 12, 1999.

## **FILLING IN THE GAPS**

This section will briefly look at two other EPA databases accessible on the Internet that provide information not available through TRI data, but which could be valuable to users of TRI data.

### **EPA'S SECTOR FACILITY INDEXING PROJECT (SFIP)**

Users of TRI data may find it frustrating that chemical releases at a given facility are not an indicator of whether the facility is in violation of environmental laws. In fact, most of the chemicals reported under TRI may be allowable under existing single-media permits or may be unregulated. It is, therefore, important for citizens to be aware that EPA has initiated the SFIP, a pilot project allowing citizens to access information on a facility's compliance and inspection history under the Clean Water Act, Clean Air Act, and Resource Conservation and Recovery Act, enforcement action data, chemical releases and spills, demographics of the surrounding population and production.

The Project currently brings together environmental and other information from a number of data systems to produce facility-level profiles for only five industry sectors (petroleum refining, iron and steel production, primary nonferrous metal refining and smelting, pulp manufacturing and automobile assembly). Several options are available to query online and download data for the 5 covered industries.<sup>48</sup> EDF's Chemical Scorecard also provides links to EPA's SFIP facility compliance data.<sup>49</sup>

The EPA anticipates that "SFIP will assist the public in examining and comparing records of individual facilities in nearby communities, will assist businesses and corporations in tracking their own performance, and also will be a useful planning and analytical tool for governments."<sup>50</sup> Among EPA's future plans for SFIP are: expanding to additional sectors; including compliance data from additional regulatory programs; and including facility-specific toxicity-weighted TRI release and relative risk data.<sup>51</sup>

### **EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS)**

ERNS is another important supplement to TRI data. It is a database used to share information on reported spills or accidental releases that are not a part of normal operations. ERNS contains information about the material and quantity released, where the release occurred, and any information about property damage, injuries and deaths occurring due to the release.<sup>52</sup> Both RTK NET and Scorecard websites have links to ERNS.

Following is an example of the type of data available under ERNS:

A spill of 14,308 lbs of sulfuric acid to land at BHP Copper Company's San Manuel Mine in Arizona ranked 10<sup>th</sup> of the ten largest hazardous substance spills reported in ERNS for the month

<sup>48</sup> <http://es.epa.gov/oeca/sfi>.

<sup>49</sup> [www.scorecard.org](http://www.scorecard.org).

<sup>50</sup> *U.S. EPA Sector Facility Indexing Project Introduction and Overview*, <http://es.epa.gov/oeca/sfi/overview.htm>.

<sup>51</sup> *U.S. EPA Sector Facility Indexing Project Introduction and Overview*, <http://es.epa.gov/oeca/sfi/overview.htm>.

<sup>52</sup> U.S. EPA, *An Overview of ERNS*, ERNS Fact Sheet, March 1995, [www.epa.gov/ERNS/docs/overfact.htm](http://www.epa.gov/ERNS/docs/overfact.htm).

of June 1998. Source of the spill was a pipeline rupture. Action taken to control the spill is also described.<sup>53</sup>

Though this type of data can potentially be extremely useful to mining activists there are several limitations to the data. ERNS primarily contains initial accounts of releases, made during or immediately after a release occurs when exact details are often unknown. The data are usually not updated unless an EPA Region is involved in the response action. Additionally, there may be multiple reports for a single incident.<sup>54</sup>

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<sup>53</sup> *ERNS Hazardous Substance Top 10 List: Number 10*, [www.epa.gov/ERNS/headline/cspil10.htm](http://www.epa.gov/ERNS/headline/cspil10.htm).

<sup>54</sup> U.S. EPA, *An Overview of ERNS*, ERNS Fact Sheet, March 1995, [www.epa.gov/ERNS/docs/overfact.htm](http://www.epa.gov/ERNS/docs/overfact.htm).

## USING THE DATA

Since its inception, TRI has had a major effect on environmental awareness and public policy. Citizens groups have produced scores of environmental advocacy reports using TRI data. Reporters have used TRI information as an additional tool to reveal toxic pollution. Many large companies have developed new corporate policies to address TRI chemicals. A number of state legislatures have passed toxics-use reduction laws. And government regulators have used TRI data to help set environmental priorities.

With the expansion of TRI to the mining industry and your help, we can pressure the mining industry reduce its waste production and releases. It's important to remember that the mining industry is governed by the outdated 1872 Mining Law and weak federal and state mining regulations. Much of the mining waste produced by the industry is also exempt from strict controls under RCRA. We can use the results of TRI to create pressure for change at specific sites by reforming and strengthening state and federal laws and regulations. We can also use TRI results to pressure Congress to allow stronger environmental protections against irresponsible mining and to prevent the legalization of unlimited mine waste dumping on publicly-owned lands

This section of the toolkit will offer suggestions and tools to help you achieve whatever specific results you hope to accomplish in your campaign for environmentally responsible mining. This section consists of the following:

- Six Ways TRI Can Benefit You and Your Issue,
- Action Steps,
- Press,
- Industry Arguments,
- Mine Disaster Examples,
- Quotes from the Industry,
- Case Studies,
- TRI and Preventing Illegal Waste Dumping,
- Chemical Health Effects, and
- Contact List.

## SIX WAYS TRI CAN BENEFIT YOU AND YOUR ISSUE

**“That’s absolutely true [that Dow executives were surprised by the size of the TRI numbers]. We figured we were doing the right thing ... However, we took a look at the actual numbers, we saw that, yes, we were releasing more than what we would like to.”**

Donald Berry, Dow Chemical  
*Bay City Times* (Mich.), September 12, 1994

**“For the most part [the TRI] serves the public good in various ways and probably prompts companies to do things that it otherwise wouldn’t have done [to reduce emissions].”**

Bob Kissell, DuPont Company  
*F-P-4 Public Data Release*, April 19, 1994

1. TRI can expose the industry as the massive polluter that it is.
2. The release of the new TRI information may provide you with an opportunity to generate significant press coverage of mining’s environmental impacts.
3. TRI may allow you to highlight a mine or company in your state as a “worst offender” when it comes to toxic waste.
4. TRI may allow you to predict that a proposed mine will make the “worst offenders” list in the future.
5. TRI will give you valuable information about the type and amount of toxic material being generated at mines near your community or in you state.
6. TRI will provide you with valuable information that you can use to put pressure on government regulators, elected officials, and mining companies.

## **ACTION STEPS**

### **USING TRI TO ADVANCE YOUR CAMPAIGN OBJECTIVES**

**“We were doing things to reduce emissions because of the TRI program. I’ll be honest with you. It probably would not have occurred if that data had not become public information. It was something that caught everyone’s attention, including the corporate leaders.”**

Harold Bozarth, Chemical Industry Council of New Jersey  
*Asbury Park Press*, March 28, 1993

The upcoming release of TRI data on mining companies from 1998 can help your campaign in two ways. Generally, it can be used to cast a media spotlight on the wasteful and polluting practices of the mining industry. Secondly, for a specific site, it can be a powerful tool to use with regulators, elected officials and even mining company officials as you fight a mine proposal or seek to enforce a mine cleanup.

#### **STEP 1: READ, PLAN & PREPARE**

- ✓ Read this *TRI Toolkit*.
- ✓ Call MPC or any of the other contacts in this guide for answers to questions that you may have or to clarify your campaign goal.
- ✓ Think about how you can use this information to your advantage and establish a plan (see below).

#### **STEP 2: INITIAL OUTREACH**

- ✓ Alert your allies: your organization members, colleagues, other organizations, and other activists.
- ✓ Immediately send out a press advisory, contact members of the press. Let them know that this TRI data is about to happen (see the sample press advisory).
- ✓ Schedule an editorial board visit with your local newspaper so they have your side of the story and not just the industry’s take on TRI. (Keep in mind the mining industry is already waging its own media campaign against TRI and your right to know!)

#### **STEP 3: GET READY FOR THE DATA DUMP**

- ✓ Before the EPA releases TRI data, make a list of the ways that you would like to see information—by company, by area, by highest polluters in your state, etc.
- ✓ Read the section on how to access this information.
- ✓ Stay tuned for an MPC ALERT on or before the day the data dump occurs.
- ✓ Draft your press release.

#### **STEP 4: ON THE DAY THE TRI INFO IS RELEASED**

- ✓ Send out your press release and make press calls.
- ✓ Access the TRI database systems to get the information you need about your state and community.
- ✓ Contact MPC for information on worst polluters in each state.

## **STEP 5: AFTER THE TRI DATA IS RELEASED**

There are many ways to generate media interest and keep this story alive after the initial release. Some are described below.

- ✓ Compile a report on the ten worst polluters in your state. Get photos and make them available.
- ✓ Organize fly-overs of the mines that are the worst polluters.
- ✓ Compile data that compares total mining releases to those from other industries.
- ✓ If there is a proposed mine in your state, predict whether the proposed mine will make it to the top five or top ten list. This may be a new way to critique the proposal.
- ✓ Expose how the EPA continues to exempt most mining waste from strict oversight under RCRA despite the potential hazard. Seek a meeting with the EPA, write letters, let the press know this is an issue.
- ✓ Analyze the types of chemicals that are in the TRI Report. If there are large quantities of cyanide or other known chemicals publicize this. Match this to information about recent spills and mishaps in a short report or press release.
- ✓ Organize meeting with elected officials, regulators and company officials. Have a clear set of objectives for the meeting, either pertaining to a specific site, to larger regulatory issues, or company practices.

## **REMEMBER! DON'T OVERSTATE THE FACTS.**

The story will tell itself. The industry will claim that this is high volume, low toxicity waste. That is how it's described by the EPA. Don't dispute this. But make this point: *There are massive volumes of waste. The EPA says over half of it may be hazardous. When there is this much waste and over half is hazardous, we have a problem.*

## PRESS

Perhaps the most critical skill an activist can have is the ability to use the press to advance his or her campaign objectives. For this reason, the following media talking points and sample press release are provided to give the citizen a framework for effective communication with the press.

Furthermore, the subsequent sections on 'Industry Arguments,' 'Mine Disaster Examples,' 'Chemical Effects,' 'Quotes from the Industry' as well as 'TRI and Preventing Illegal Waste Dumping' will also provide the activist with the ammunition they will need to defend their campaign for environmentally responsible mining.

### MEDIA TALKING POINTS

- The mining industry has just been exposed as the biggest waste producer in the country. They produce massive amounts of waste--more than all other industries and municipalities combined.
- Today in \_\_ (state) \_\_ it was revealed that the mining industry is the state's biggest polluter. Mines occupy spots \_\_, \_\_, \_\_, \_\_ and \_\_ in the top ten.
- It is now clear why the industry has been hiding behind their exemption from waste reporting for all these years: they are the biggest waster producer in the country.
- While the industry is being exposed as the country's biggest waste producer, they're trying to sneak an anti-environmental rider through Congress that would remove current limits on mine waste dumping on public lands. The TRI report makes clear that they need even stricter limits, not a free pass for unlimited waste dumping.
- The TRI report exposes the industry, and it's time for the industry to cleanup its act. For evidence, just look at the number of cyanide spills and the 12,000 miles of polluted rivers and streams that are a result of mining.

## **SAMPLE PRESS RELEASE**

For Immediate Release:  
March 1, 2000

Contact:  
Stephen D'Esposito, Mineral Policy Center, 202.887.1872, ext. 203  
Alan Septoff, Mineral Policy Center, 202.887.1872, ext. 205

### **Mining Industry—Exposed As Nation's Biggest Waste Producer**

#### **New TRI Data Confirms Worst Fears**

#### **Conservationists Call for Enforcement of Limits on Massive Mine Waste Dumps**

Washington, D.C.—Today, the Environmental Protection Agency (EPA) released its Toxics Release Inventory (TRI), which for the first time ever contains data on the mining industry. As suspected, the new report revealed that the mining industry is the nation's biggest polluter, producing more waste than all municipalities in the country combined. Annually the industry produces over two billion metric tons.

Top polluters include industry giants Phelps Dodge, Newmont, ... In many states such as \_\_, the industry topped the list of waste producers.

For years the industry has fought efforts to require reporting under the TRI program but in 1997 the EPA, under pressure from Mineral Policy Center and other environmental organizations, added the mining industry and other industries, such as the utility industry, to the reporting program. The TRI program was created in 1986 under the Emergency Planning and Community Right to Know Act (EPCRA) in response to the Bhopal disaster. The purpose of the program is to provide citizens with vital information about the existence and the characteristics of pollutants produced or released into the environment.

Although industry representatives often seek to characterize this waste as high in volume and low in toxicity, the EPA has described the waste as follows: "...56% of waste generated could be considered potentially hazardous to human health or the environment." Mining waste contains acid, aluminum, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc, to name a few. Many of these are linked to cancer and other human health effects. Mining waste has also polluted more than 12,000 miles of our nation's waterways and 180,000 acres of our lakes and reservoirs.

"For over a decade the industry has hid behind this reporting exemption, now we know what we've long suspected, the mining industry is the nation's biggest polluter," said Stephen D'Esposito, President of Mineral Policy Center. "With this information pressure will build for the industry to clean up its act. This is a wakeup call for an industry that for too long has escaped public scrutiny."

D'Esposito continued: "We've heard industry representatives claim that there is nothing to worry about, that these massive waste piles are just a bunch of rocks. Now we know what we've long suspected. And these massive waste piles are not just a pile of rocks. They contain cyanide, arsenic, mercury, lead and other toxins. And they leach acids that kill streams. It's time for the industry to get serious and take responsibility for producing less waste."

Ironically, as this data is being released industry lobbyists are seeking to pass a congressional exemption from current limits on dumping potentially toxic mine waste on public lands. If enacted, this special interest favor would eliminate any limits on the amount of public lands that mining industry could use to dump massive piles of mine waste and would give the industry use of unlimited public land for free. Simultaneously, these same lobbyists are trying to prevent the strengthening of environmental regulations which would require the industry to act more responsibly in protecting communities and the environment.

"This TRI data shows the magnitude of the toxic waste the mining industry has dumped on our public lands, said Alan Septoff, Reform Campaign Director at Mineral Policy Center. "Congress and the Clinton administration should enforce existing waste dumping limits, not capitulate to the mining industry and allow the unlimited use of publicly owned lands as toxic mining dumps," he continued.

-end-

*Mineral Policy Center (MPC) works to protect communities and the environment  
from the impacts of irresponsible mining in the U.S. and worldwide.*

## INDUSTRY ARGUMENTS

### **INDUSTRY SPIN:**

*Up to 90% of each company's data will report rock and processed rock.*

### **REALITY:**

The mining industry needs to take responsibility for the waste that it produces rather than deny that a problem exists. TRI does not report rocks; TRI reports toxic chemical releases. In the case of the mining industry it reports on toxic chemicals that the industry used to process the ore and those found in the rocks and ore. For example, the industry uses massive quantities of cyanide to process gold and waste rock can contain dangerous heavy metals such as lead.

Here's how it works: Mining companies crush enormous volumes of rock and then pour toxic chemicals, such as cyanide, over these piles of crushed ore. This process exposes both the industry-added cyanide and other toxins contained in the crushed rock to the environment. These chemicals can then end up in streams and our drinking water. These chemicals are harmful to fish, wildlife, plants and people.

### **INDUSTRY SPIN:**

*Most of the reported materials will be of naturally occurring substances.*

### **REALITY:**

There is nothing natural about modern mining. *All* of the reported materials are toxic. These toxins are responsible for cancer, birth defects and nerve damage in people. The issue isn't whether this waste is natural, it's whether its toxic. And it is toxic.

Some toxins, like cyanide, are added to the waste by the mining industry. Some, like arsenic, are found naturally in rock but exposed by the industry when it digs up and then crushes the ore. Once crushed, ground, processed and dumped in enormous waste piles, these toxics are exposed and can pollute streams, rivers, lakes and drinking water.

Mining is like the slaughtering of a cow for hamburger and the subsequent spread of ecoli bacteria. When ecoli is in the cow, people are not exposed to it. It's only when the cow is ground up and eaten that ecoli becomes a life-threatening problem. By the same token, when mining companies grind up rock, they expose the environment and our drinking water to harmful toxins contained within the rock that can make people sick.

### **INDUSTRY SPIN:**

*The waste we produce is high in volume but low in toxicity.*

### **REALITY:**

Here are the facts. The industry produces massive amounts of waste and the majority of this waste is hazardous. Only this hazardous material is reported under TRI.

The industry would like to have you believe that the waste they are reporting is mostly rock, but in fact under TRI what they are reporting is all toxic material. They report the volume of toxics, not the volume of rocks.

For example, they have technology that can tell a person how many pounds of cyanide is in a pile of processed rock or in an impoundment. And it is those pounds of cyanide that are reported. Nothing else. So, the volume the mining industry reports is all toxic volume!

**INDUSTRY SPIN:**

*TRI reports volume, not risk.*

**REALITY:**

The purpose of TRI is to report all toxic releases so that risk can then be determined. The mining industry releases massive amounts of waste into the environment. These chemicals can cause cancer, birth defects and nerve damage in people and animals. These chemicals pollute rivers, streams and drinking water. The public has a right to know what it is being exposed to. The industry acts as if it has something to hide. Rather than downplaying the impacts of its toxic releases, the industry should seek to produce less waste and find better ways to handle these materials safely.

Furthermore, that volume is enormous and should not be downplayed. The metal mining industry generates almost as much hazardous waste as all the other non-fuel industries in the United States combined.

**INDUSTRY SPIN:**

*TRI listed substances are safely contained and managed in permitted facilities.*

**REALITY:**

The industry in the US and around the world has a dubious environmental record. Consider the Summitville mine disaster in Colorado where a toxic spill contaminated and killed a 17-mile stretch of river. There are over 60 mines on the EPA's priority Superfund cleanup list. There are over 500,000 abandoned mines in the US. Last year MPC released a report, *Six Mines, Six Mishaps*, that documents today's problem mines. In Montana, after 50 cyanide spills, citizens passed a ban on new mines that use cyanide.

Mining in the U.S. today is regulated by a 127 year-old statute—the 1872 Mining Law—that contains no provisions for environmental protection. The state and federal regulations that govern mining are outdated. And the industry fights even the most basic regulation like TRI. In 1997 the National Mining Association (NMA) and the Colorado Mining Association sued the EPA to end the mining industry's reporting requirement.

**INDUSTRY SPIN:**

*Mining is essential to the American way of life.*

**REALITY:**

Mining should be done safely and in a way that protects the environment. Too often today mining leads to massive environmental problems. The industry needs to cleanup its act and produce less waste. TRI will help achieve this end.

## **MINE DISASTER EXAMPLES**

*All the evidence you need when the mining industry suggests that all is well in the land of hardrock mining.*

### **CORPORATE IRRESPONSIBILITY FLAUNTED**

#### **Zortman-Landusky**

As one of the world's first large scale cyanide heap leach gold mines, the Zortman-Landusky mine was the lowest grade gold mine in the United States and the largest gold mine in Montana when operations began in 1979. Since then, the Z-L mine has a dubious record of numerous environmental violations, disregard for culturally significant sites, potential health problems and poorly reviewed amendments and expansions.

The Z-L mine has experienced a litany of cyanide solution leaks and spills, stability failures, acid mine drainage, surface and groundwater contamination, wildlife fatalities, and other problems. In addition, the Assiniboine and Gros Ventre Tribes of Fort Belknap have a strong cultural and spiritual connection with the Little Rockies. The mining operation has destroyed or harmed several of the tribes' traditional sacred grounds. Spirit Mountain, for example, which was a mountain peak of cultural significance to the Assiniboine and Gros Ventre people, is essentially gone, replaced by a huge open pit.

### **A TAXPAYER'S BURDEN**

#### **Summitville**

In December 1992, catastrophe struck at the Summitville gold mine high in Colorado's San Juan mountains. Inadequate environmental safeguards allowed a toxic brew of acid mine drainage, heavy metals and cyanide to escape the mine site and pollute the Alamosa River. In the end, 17 miles of the river downstream from the mine were biologically dead. According to Jeff Stern, coordinator of the Alamosa River Watershed Project, "heavy metals have built up in crops, soil, and livestock irrigated by the river, and acidic mine water has corroded metal irrigation structures."

Almost simultaneously, the Summitville Consolidated Mining Company, Inc. (SCMCI)—a subsidiary of Galactic Resources of Canada—declared bankruptcy, leaving the taxpayers of the United States to pick up the clean up bill. EPA declared the abandoned mine a Superfund site. Approximately \$170 million of taxpayer money is being spent to cleanup Galactic's mess.

### **A NEED FOR STRONGER PERMITTING STANDARDS**

#### **Thompson Creek**

Thompson Creek Mine is located 2,000 feet above and only five miles away from Salmon River, a prime recreational river in central Idaho that supports endangered chinook and sockeye salmon, steelhead trout and bull trout. There was no provision for controlling or containing dangerous acid mine drainage when the Thompson Creek molybdenum mine's operating plan was drafted in 1980. However, 10 years ago, the mine began to show signs of producing acid mine drainage. Now, almost 20 years since the operating plan was drafted, the mine faces potentially serious

future problems with acid drainage. Pit excavation is unearthing pyrite (iron sulfide) which mixes with water and air to create acid mine drainage. Acid drainage can kill fish and other aquatic life.

But acid mine drainage is not the only serious environmental threat from the mine. The tailings dam is one of the largest in the world, already holding over 100 million tons of tailings and expected to hold a total of 200 million tons. The embankment of the dam is 700 feet high, spelling certain disaster should the dam fail at any point in the future. Since the mine is only 30 miles from the epicenter of the 1983 Mt. Borah earthquake (measuring 7.3 on the Richter scale) and since the region is subject to harsh winters and intense summer storms, the threat of dam failure is real.

## **“SAFELY MANAGED AND STORED?”**

### **Grouse Creek**

Next to the largest wilderness complex in the lower 48 states, the defunct Grouse Creek mine is currently leaking cyanide into nearby Jordan Creek at levels harmful to fish and other aquatic species. Despite the pre-construction promises of Hecla, the mine owner, Grouse Creek failed to be a state-of-the-art mining operation. Instead it an environmental nightmare. The mine was plagued with mishaps in its short operation—from a major landslide in 1994, which buried Jordan Creek, to numerous cyanide leaks and spills. One cyanide spill occurred just as adult salmon were migrating into the area to spawn.

In 1996, the EPA fined Hecla \$85,000 for violating the mine's wastewater discharge permit. Cyanide and mercury discharges exceeded the limits by more than five times the allowed levels over a period of 13 months. Other violations were more than twice the permitted levels. In 1997, Hecla agreed to make \$1.5 million in pollution control improvements, including building a water quality treatment plant.

In April 1999, Idaho State environmental officials reported cyanide leaking into a stream, which is habitat for endangered chinook salmon, steelhead and bull trout. As of September 7, 1999 the mine is still leaking cyanide into the Jordan Creek despite Hecla's efforts to stem the flow.

## **“NATURALLY OCCURRING?”**

### **Molycorp**

At least eight miles of the Red River in northern New Mexico are biologically dead thanks to the Molycorp molybdenum mine. Over the last 30 years, widespread acid mine drainage and heavy metal contamination has leached out of its waste rock piles contaminated the Red River, located within the Río Grande watershed. In addition, there were over 100 documented slurry spills into the Red River between 1986 and 1991, and numerous fines levied against Molycorp. U.S. District Judge James Parker noted that the once blue-ribbon trout fishery has now been reduced to a biologically dead waterway.

Since this large-scale operation began, the nearby town of Questa has seen the Red River, turn milky blue in color from aluminum coating the riverbed. Many other toxic metals including copper, zinc, lead, cadmium and silver, have been detected at chronic and acute levels along the

twenty-mile stretch of the Red River below the mine. In addition to water contamination, dust containing lead and other pollutants from enormous molybdenum tailings storage ponds blows over the town of Questa. A state high school baseball championship was cancelled due to a dust storm blowing from the tailings piles. Molycorp eventually paid to have the High School relocated.

## **POLLUTION PROBLEMS CONTINUE LONG AFTER MINING STOPS**

### **Midnite**

The Midnite mine, an inactive open-pit uranium mine located on the Spokane Indian Reservation in Washington State, has had numerous problems with contamination. In April 1998, the EPA conducted an Expanded Site Inspection (ESI) at the Midnite mine. Elevated levels of metals and radionuclides were detected in numerous on-site sources as well as in ground water seeps that flow into the nearby surface water drainages including nearby Blue Creek. Wetlands at the site have chromium levels that violate water quality standards.

## QUOTES FROM THE INDUSTRY

“[TRI] opened up our industry to greater public view, and that has been healthy. We believe it will help accelerate the waste-reduction mentality throughout industry...”

John Harrison, Dow Chemical Texas; *Houston Chronicle*, July 24, 1989

“[TRI] created awareness of a real problem that had to be addressed.”

John Gould, Associated Industries of Massachusetts; *Wall Street Journal*, January 2, 1991

“The law is having an incredible effect on industries to reduce emissions, and that’s good. There’s not a chief executive officer around who wants to be the biggest polluter in Iowa.”

Tom Ward, Monsanto; *Quad City Times* (Iowa), June 8, 1990

“Obviously the very fact that one has to report these numbers bothers corporate stockholders, bothers managers and bothers employees. It’s a very effective way of focusing attention on where the releases are coming from and why.”

Keith Laurie, Unocal Nikiski plant; *Anchorage Daily News*, August 29, 1992

The 1987 TRI data “shocked a lot of the industry folks, the magnitude of these releases. It really hit home. People from boardrooms all the way down to plants recognized they had to get aggressive to try to find ways to reduce these emissions.”

Dan Borne, Louisiana Chemical Association; *The Times-Picayune*, February 17, 1991

“It genuinely bothered me ... We said, ‘If there’s going to be a list, we don’t want to be on it.’ Right there, I made a decision: we were either going to improve or get out of this business.”

Cyrus Jaffari, Caspian Inc.; *The Los Angeles Times*, December 9, 1991

“It is not only economically sensible to reduce these [TRI] numbers, it is also sensible from the standpoint of this industry’s commitment to environmental stewardship.”

Elin Oak, Florida Phosphate Council; *The Ledger* (Florida), April 20, 1994

“We see it [TRI disclosure] as a positive thing. We have no problem with people knowing. We are concerned about being a good corporate citizen.”

Pat Sweeney, Hadco Corp. (New Hampshire); *United Press International*, November 6, 1989

“From our company’s point of view, [TRI] helped us to discover a problem that we weren’t even aware of. We discovered we had leaking sewers and potential contamination of our water supplies.”

Richard Harding, Eastman Gelatine; *North Shore Sunday* (Massachusetts), August 12, 1990

“Frankly, we’d rather not be on the [TRI pollution] list at all. But it’s not necessarily a negative experience because we’re informing the public.”

Jim Hafner, Akron Republic Chemical Corp.; *Akron Beacon-Journal*, March 26, 1995

“[TRI] has helped Vinings save money because we did have to go out and actually calculate what we were losing. We could determine we were losing such-and-such chemical. It’s cost us time and aggravation and headaches, but in the long run it has saved us money.”

Randy I-Enton, Vinings Industries (Georgia); *The Atlanta Constitution*, August 22, 1991

“For the first time, engineers have had to scrutinize their processes as a whole and quantify the wastes released to all media ... in some cases [this] has revealed valuable information for process improvements.”

Elizabeth Fisher, Rohm and Haas; Proceedings, International Conference on Reporting Releases of Toxic Chemicals, November 1991

“I think the release of this kind of [TRI] information is good. It certainly draws the public's attention to toxic chemicals and the related environmental problems... [I]t's motivating companies like ours to voluntarily reduce our reliance on certain chemicals. The dissemination of this information raises the sensitivity of employees other than the ones who have the word 'environmental' in their job titles.”

Bob Risch, General Electric; *North Shore Sunday* (Massachusetts), August 12, 1990

“[TRI] really forced us to look at the numbers in a condensed way, and it dawned on us that these were some big numbers. Maybe it's just a big number, but people don't like that.”

Randy Emery, Amoco; *Houston Chronicle*, July 24, 1989

“The exercise of reporting this information has really increased awareness a lot. There are a lot of organizations and facilities paying attention now.”

Heidi Grether, Michigan Manufacturers Association; *The Ann Arbor News*, January 27, 1992

“[TRI] makes us more accountable to the public, and public accountability has made us smarter businessmen.”

John Johnstone, Chemical Manufacturers Association; *USA Today*, May 28, 1992

“We continue to believe that TRI has been a very successful venture. Our members have gotten behind it and witnessed a 50 percent reduction in pollution.”

Mort Mullins, Chemical Manufacturers Association; *The New York Times*, June 28, 1995

“In the long history of legislation in the United States, passage of Title III in 1986 was the most important for Monsanto Company.”

Earl Beaver, Monsanto; Proceedings, International Conference on Reporting Releases of Toxic Chemicals, November 1991

“We don't have any problem in meeting the [TRI] reporting requirements because as a matter of good operating procedure, we track and monitor the materials we use.”

Diana Youmans, IN4C-Agrico; *Tampa Tribune*, July 1, 1995

“We at BP America are committed to full compliance with [TRI] and feel it can have positive impact on shaping public views on environmental issues.”

BP Chemicals, advertisement; *Lima News* (Ohio), September 17, 1989

“Rhone-Poulenc supports the TRI process and we continue to provide communities with information about our operations.”

Tom Dalesic, Rhone-Poulenc; *Charleston Gazette* (West Virginia), January 11, 1994

Annual TRI reporting “will continue to drive industry to reduce those [emissions] numbers.”

Ronald Martin, BF Goodrich; *The Courier Journal* (Kentucky), November 27, 1988

“It’s setting up a looking-glass image. You see your own reflection, and what are you going to do about it?”

Terry Ward, Armco Steel; *Dayton Daily News*, November 19, 1989

“As we considered the data—data representing a potentially powerful new form of disclosure—we recognized that the numbers, and what the numbers represented, were unacceptable ... Thus we announced our goal to reduce toxic air emissions worldwide 90 percent by the end of 1992, and then to work toward the ultimate goal of zero.”

Richard Mahoney, Monsanto; September 1993

“The CMA ... has already been a prime mover in implementing Title III, your Right To Know about what chemicals are being produced and used in your neighborhood ... Now with the guiding principles of Responsible Care, we are committing to do more: To recognize and respond to community concerns about chemicals and our operations.”

Chemical Manufacturers Association (CMA), advertisement; *The New York Times*, April 16, 1990

“It’s not necessarily that we didn’t want to [reduce emissions] before. We never had the information we needed to know if progress was being made.”

Steven Schoger, BP Chemicals (Ohio); *Occupational Hazards*, July 1991

“The [TRI] numbers are large and ought to be reduced. The public expects that out of industry, and they don’t want a lot of qualifications.”

Steven Raucher, Rohm & Haas; *The Philadelphia Inquirer*, September 29, 1989

“Quite frankly we want to get off that list.”

Joe Fallon, Slater Steels Corp., Indiana; *Indianapolis Star*, April 10, 1990

“A lot of the CEOs of our member companies were shocked. They didn’t know emissions were that high ... We’re committed to bringing our emissions down, way down.”

Tom Gilroy, Chemical Manufacturers Association; *Atlanta Journal and Constitution*, August 22, 1991

“We won’t be satisfied until our name doesn’t appear on the list [of Arkansas’ top polluters].”

Vice president of Great Lakes Chemicals; *Arkansas Democrat Gazette*, December 26, 1995

“We won’t be satisfied until our name doesn’t appear on the [TRI] list.”

John Talpas, Great Lakes Chemical Corp; *Arkansas Democrat Gazette*, June 19, 1998

“We’re very happy to report releases. The law was established because of a feeling communities would like to know what chemicals are released and where chemicals are stored.”

Nancy Stephens, Florida Chemical Industry Council; *Eugene Register Guard (Associated Press)*, January 14, 1996

The industry “has to be prepared to be open about what we do within the plant.”

Joseph Sullivan, Ciba Geigy; *Chemical Week*, September 18, 1996

“[From TRI, people] can learn about chemicals they may be exposed to in their community and they can identify whether companies are making progress in reducing those emissions. I think those are good, healthy things.”

Larry Keller, OMC Recreational Boat Group; *Traverse City Record Eagle*, July 6, 1997

“You cannot challenge the public’s right to know and win.”

Amit Sachdev, Chemical Manufacturers Association; *Chemical Week*, October 2, 1996

“The initial demand for environmental reporting came from the public. But in responding, we have discovered that the information is extremely useful to our own management. We have learned about our successes, our inadequacies and the gaps in our knowledge. It’s a good example of the way in which external pressures ultimately prove the benefit both to the environment and to industry.”

Ciba Geigy, *Corporate Environmental Report*, 1993

## CASE STUDIES

### A LOOK AT HOW OTHERS HAVE USED TRI

Here are a few examples of how citizens across the country have in the past made use of TRI data. However, these examples do not represent sum of options available to citizens. There are many reasons and ways to combine TRI data with other data and many different goals that can be achieved by using the data. Once TRI data on the mining industry becomes available, citizens will have to decide how to best incorporate TRI data into their particular goals and strategies.

The Center for Policy Alternatives has prepared two case study reports of community group's use of right-to-know information.<sup>55</sup> Summarizing these reports, RTK NET states: "A few patterns emerge in the midst of this variety. For instance, most of the citizens attempt to manipulate public opinion, through the media or through town meetings. In several of the cases, negative public opinion alone convinces targeted corporations to promise to cut their toxic pollution. Only a few of the cases involve working directly with polluting corporations. In most cases, the citizens succeed in getting a regulatory agency to take some kind of action."<sup>56</sup>

### GENERATING MEDIA COVERAGE

One important way citizens can utilize TRI data to pursue a reduction of toxic chemical releases and risks, is by generating media coverage. To attract press attention you will need to create a meaningful context for the data found in TRI. For instance, generating a "top ten" list of polluters for your state will be much more useful than giving them straight numbers.

#### *Case Study*

A small group of local citizens in Brooklyn, New York—the Boerum Hill Committee—complained for years to city officials and tried to draw the attention of state representatives about a noxious odor emanating from the Ulano Corporation. Very little happened until the Emergency Planning and Community Right-to-Know Act (EPCRA) 1986 quantified the problem and gave citizens a tool for action by making TRI data available. The Consumer Policy Institute (CPI) used TRI data to prepare a May 1990 report identifying Ulano as the top industrial toxic air polluter in New York City.

CPI's report, which was co-released at a press conference with the Boerum Hill Committee, generated extensive media attention. On the same day, the New York State Department of Environmental Conservation called a local television station to announce that Ulano must begin using a new incinerator to reduce emissions, or face stiff fines. The President of the Boerum Hill

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<sup>55</sup> *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990; *Making the Difference, Part II: More Uses of Right-to-Know in the Fight Against Toxics*, Nita Settina, Center for Policy Alternatives and Paul Orum, Working Groups on Community Right-to-Know, 1991.

<sup>56</sup> [www.rtk.net/E2185T596](http://www.rtk.net/E2185T596).

Committee said of their success that the final push of their 12-year struggle was the CPI report and the media coverage it received. “It wasn’t just a local issue anymore.”<sup>57</sup>

This is a strategy that could prove useful for local mining activists, as it could raise national attention to the toxic chemical releases and waste being generated by modern day mining operations.

## **PUTTING PRESSURE ON COMPANIES TO REDUCE RELEASES OR CHANGE INDUSTRIAL PRACTICES**

There are two ways that citizens can use TRI data to get companies to make a commitment to reduce releases or change their polluting practices. First, they can use the data to create so much public pressure and negative publicity that the company eventually “voluntarily” makes a commitment. Secondly, citizen groups can negotiate directly with companies to make “good neighbor agreements.” The goal of this strategy is to have companies make changes in their production processes—to be less polluting or dangerous to the environment and nearby communities. Companies, of course, are not required to negotiate with nearby communities. When they do, it is most often because the company doesn’t want negative publicity. Environmental and safety information, such as the TRI and ERNS, can play an important role in these negotiations. Because of these databases, citizens can have almost as much information about the actions of a company as the corporate representatives.<sup>58</sup>

### ***Case Study: Citizen Pressure and Negative Publicity***

An analysis of 1987 TRI data by Citizens for a Better Environment showed that IBM’s Silicon Valley plant discharged the largest amount of CFCs in California. The silicon Valley Toxics Coalition rallied around the issue of getting IBM to phase-out use of CFCs by merging labor and environmental groups into a unified front. Two thousand activists marched on the facility during an Earth Day rally. *USA Today* published a front page story on CFCs demonstrating that IBM’s plant in Silicon Valley released the third largest volume of CFCs in the nation. The coalition built support through newsletters, organizing meetings and contact with local environmental enforcement agencies. The coalition also held a series of press conferences. Eventually, “the critical mass of public pressure and negative publicity forced IBM to present a new position on its CFC policy. Senior management established an ambitious goal of complete elimination of CFC use in their products and processes by 1993.”<sup>59</sup>

### ***Case Study: Negotiating With Industry***

Akron Citizen Action used TRI data and published a report that ranked BF Goodrich as the number one air toxic polluter for Summit County. Goodrich began to look for opportunities to reduce toxic waste. Citizen Action and other community groups asked the company to enter a

<sup>57</sup> “Case Study #5- Citizens Push for Clean Air, New York City, New York” from *Making the Difference, Part II: More Uses of Right-to-Know in the Fight Against Toxics*, Nita Settina, Center for Policy Alternatives and Paul Orum, Working Groups on Community Right-to-Know, 1991.

<sup>58</sup> *The Right Stuff: Using the Toxic Release Inventory*, OMB Watch, Unison Institute, July 1995, p. 13.

<sup>59</sup> “Case Study #1- Citizen Pressure Prompts IBM to Phase-Out Use of Ozone Depleting Chemicals, San Jose California” from *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990.

dialogue that would lead to a good neighbor policy for toxic risk reduction. The company seemed eager to take up the offer to forestall bad publicity that would be generated by the report. A city councilman, reporters, people from the Akron Fire Department, Citizen Action and the local university went on a tour of the Goodrich facility. After the tour, the company announced a plan to reduce toxic air emissions by 70% over three years and was to meet with citizen groups to discuss details of the company's reduction plans.<sup>60</sup>

## **PUTTING PRESSURE ON STATE LEGISLATORS TO PASS TOXIC USE REDUCTION LAWS**

Another way to use TRI data is to expose statewide pollution problems and pressure politicians to resolve the problem.

### ***Case Study***

Toxic hazard reports published in both Massachusetts and Oregon summarized 1987 statewide TRI data and revealed extensive toxic pollution in both states. Public opinion focused on what politicians would do to resolve the problem of pollution poisoning their states' air, water and soil. Massachusetts PIRG and Oregon PIRG took the lead in designing model legislation for state level pollution prevention. Then, in an effort to prevent toxic pollution in the future, both states placed new requirements on industries that use dangerous chemicals.<sup>61</sup>

## **USING TRI DATA TO PUSH FOR STRONGER ENFORCEMENT OF EXISTING LAWS**

TRI data is also a useful tool to compel proper enforcement by regulators of existing regulations. The data allows citizens to prove that communities and the environment face higher toxic risk than previously acknowledged by public officials.<sup>62</sup>

### ***Case Study***

Using TRI data, citizen groups filed petitions in 10 states requesting EPA to list additional "toxic hot-spots" in 1989. A hot-spot listing requires EPA to revise the discharge permits of any factory or sewage plant that discharges certain toxic pollutants in that area. In North Carolina, for example, the Clean Water Fund and EDF petitioned EPA to list 15 additional toxic hot spots. Using TRI information and stream flow information, Clean Water Fund calculated the level of toxic waste concentration finding toxicity levels exceeding state and federal; criteria for

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<sup>60</sup> "Case Study #12- Toxic Release Information Prompts Goodrich to Promise Air Toxics Reductions, Akron, Ohio" from *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990.

<sup>61</sup> "Case Study #2- Citizens Initiatives Spur Toxic Use Reduction Laws in Massachusetts and Oregon" from *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990.

<sup>62</sup> *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990, p. i.

protecting human and aquatic health. If nothing else, the Petitions show how citizens can use TRI data to bring attention to pollution in America's waterways.<sup>63</sup>

## **USING TRI DATA AS A BASIS FOR FORMING ALLIANCES**

As can be seen from the case examples described above, citizen groups often work with environmental and public interest groups in using TRI data to put pressure on companies, legislators or regulators. Labor unions have also frequently been a partner with citizen groups using TRI data to achieve their goals. Here environmental groups in other countries and investment firms are briefly discussed as less obvious, but nevertheless important partners that mining activists using TRI data might want to consider.

### ***International Cooperation***

Citizen groups in the U.S. can provide TRI data for a facility in the U.S. to environmental groups in other countries, where there is no right-to-know, who have concerns about the environmental releases of that same company's facility in their community. For example, the Texas Center for Policy Studies researched the emissions of facilities operating along the U.S.-Mexico border. Environmental groups in Mexico requested an overview of likely pollutants from these companies. The Center published a report based on TRI data from similar types of facilities on the U.S. side. Since there is no right-to-know in Mexico, it gave citizens there a sense of the kinds of chemicals on-site and emissions in their area.<sup>64</sup>

TRI enhances the ability of people around the world to monitor environmental releases using the same yardstick. Another example is Arizona Toxics Information (ATI) which works with communities living on the U.S.-Mexico border to raise awareness of a host of community right-to-know issues. ATI has participated in the formation of international right-to-know networks in Europe and Latin America, and has developed bilingual informational materials on pollutants to facilitate public participation and promote pollution prevention.<sup>65</sup>

It thus could be useful for mining activists to share TRI data about mines in the U.S. with local groups in, for example, Latin America or Indonesia where U.S. mining companies have mines.

### ***Cooperation with Investment Firms***

In December 1998 a coalition of over 100 investment, labor, environmental and public interest organizations asked the Securities and Exchange Commission (SEC) Chairman to take enforcement action against companies that violate environmental disclosure rules, and to clarify corporate reporting requirements on environmental and social issues.<sup>66</sup> This shows not only that the investment community is willing to form alliances with environmental and public interest

<sup>63</sup> "Case Study #4- Citizens Use Toxic Release Information to Petition EPA Nationwide" from *Making the Difference: Using the Right-to-Know in the Fight Against Toxics*, Jeffrey Tryens and Richard Schrader, National Center for Policy Alternatives and Paul Orum, Working Group on Right-to-Know, 1990.

<sup>64</sup> *The Right Stuff: Using the Toxic Release Inventory*, OMB Watch, Unison Institute, July 1995, p. 11.

<sup>65</sup> *The Toxics Release Inventory-A Handbook for Community Groups*, U.S. EPA, Region IX, Cross-Media Division, August 1997, p. 9.

<sup>66</sup> Investors, Public Interest Groups, Trade Unions Seek Enforcement of SEC Corporate Disclosure on Environment and Social Issues, News Release from The Good Neighbor Project and the Strategic Counsel on Corporate Accountability, December 15, 1998.

groups, but also that a growing portion of the investment community is demanding social and environmental information on corporations. TRI data could be an important way for investors to access this data, and citizen groups may be able to work with investment firms to put pressure on companies to become more environmentally responsible. Some investment firms, in fact, make it their business to ensure that their clients' investment will be in environmentally sensitive corporations. They create environmental profiles from information from various databases, including TRI.

That the potential for such a strategy exists with regard to mining companies is evidenced by the recent allegations by the United Steelworkers of America (USWA), charging Phelps Dodge Corporation with failure to disclose environmental liabilities, proceedings and regulatory issues in the company's annual and quarterly SEC reports.<sup>67</sup> According to Lee Garard of USWA, "Our close examination showed how poorly Phelps Dodge does its reporting. When an environmentally irresponsible company like Phelps Dodge doesn't tell the whole truth about its environmental issues, or engages in misleading communications, everyone loses: the environment, workers and their communities, along with the shareholders."<sup>68</sup>

## MEASURING SUCCESS

All the various strategies and goals of using TRI data given as examples above can be considered successful. But, of course, how one measures the success of using TRI data depends on how one defines "success." Citizens using TRI for the first time should not be discouraged if they do not immediately achieve the desired outcome. They may have laid the foundation for future successes. According to RTK NET, "... success means convincing corporations and governmental institutions to pay attention to citizen concerns about environmental, health and accidental dangers of toxic chemicals."<sup>69</sup>

## WHAT TO DO IF A COMPANY FAILS TO REPORT TO TRI

Since TRI is based on self-reporting by companies, it is possible that some companies may choose not to report at all or may only report their toxic releases for some chemicals and not others. EPA does not have the resources to investigate and enforce all TRI reporting violators<sup>70</sup> despite a General Accounting Office report in 1991 that recommended EPA improve enforcement and verify more emissions data.<sup>71</sup> Therefore, the right of citizens to help enforce the law through citizen suits under Section 326 of EPCRA 1986<sup>72</sup> is important.

A discussion about how to find violators of TRI reporting requirements is beyond the scope of this guide, but a quote from an Environmental Action Foundation fact sheet gives an idea as to

<sup>67</sup> *SEC Suit Filed Against Phelps Dodge*, United Steelworkers of America Press Release, November 9, 1998.

<sup>68</sup> *Investors, Public Interest Groups, Trade Unions Seek Enforcement of SEC Corporate Disclosure on Environment and Social Issues*, News Release from The Good Neighbor Project and the Strategic Counsel on Corporate Accountability, December 15, 1998.

<sup>69</sup> [www.rtk.net/E2185T596](http://www.rtk.net/E2185T596).

<sup>70</sup> EPCRA places a heavy enforcement burden on EPA, at least one-third of covered facilities have failed to report as required.

<sup>71</sup> EPCRA places a heavy enforcement burden on EPA, at least one-third of covered facilities have failed to report as required.

<sup>72</sup> 42 U.S.C. Section 11046.

the difficulty of this process: “Identifying right-to-know violators is like trying to put together a jigsaw puzzle with several pieces missing.”<sup>73</sup> One of the groups bringing suit against Phelps Dodge for hiding TRI data at smelters in New Mexico indicated that they had to make use of various EPA and state permitting data to determine that Phelps Dodge’s reporting was not accurate. For example, they looked at mining permits, pollution enforcement actions, groundwater permits, orders made by the state on other pollution problems at the smelter, hazardous air pollutants reports, and smelter air quality programs.<sup>74</sup>

## **SUCCESSFUL EPCRA CITIZEN SUITS**

Across the country there have been many examples of successful citizen suits against companies for failing to report under TRI. Most cases were successful because of settlements involving pollution prevention and toxics use reduction plans. These cases show that through citizen suits for TRI violations, citizens can have an impact on the environmental problems in their communities.

### ***Case Study***

The Atlantic States Legal Foundation (ASLF) became the first plaintiff to successfully use citizen suit provisions of EPCRA against companies that fail to report under the law. In one of their first victories, ASLF reached an innovative agreement with Murray Sandblast and Paint Company, which provided a \$58,000 credit for the company if it implemented a pollution prevention and toxics use reduction program. The company agreed to eliminate the use of toxic substances from its operations and, where elimination is not possible, to use less toxic substances. To further reduce or eliminate the release of toxic substances into the environment, the company agreed to consider alternative production processes, improved plant operations and other technology modifications to maximize in-process reuse, recycling and recovery of materials.<sup>75</sup>

This case example shows that “the opportunities to negotiate innovative settlements which go beyond strictly monetary penalties is a strong characteristic of the Right-to-Know Act. Therefore, those who are most directly affected by the toxic emissions have a voice in the settlement and how the penalty fines are distributed.”<sup>76</sup>

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<sup>73</sup> How to Identify Right-to-Know Violators and Get the REAL Toxics Story, Environmental Action Foundation Right-to-Know Fact Sheet #4, May 30, 1991 (see also [www.rtk.net/E219T602](http://www.rtk.net/E219T602)).

<sup>74</sup> Telephone communication with Paul Robinson, Southwest Research and Information Center, October 20, 1998.

<sup>75</sup> “Case Study #7- Civil Suits Enforce Right-to-Know: Company Realizes Pollution Prevention Savings, New York State and Nationwide” from Making the Difference, Part II: More Uses of Right-to-Know in the Fight Against Toxics, Nita Settina, Center for Policy Alternatives and Paul Orum, Working Groups on Community Right-to-Know, 1991.

<sup>76</sup> “Case Study #7- Civil Suits Enforce Right-to-Know: Company Realizes Pollution Prevention Savings, New York State and Nationwide” from Making the Difference, Part II: More Uses of Right-to-Know in the Fight Against Toxics, Nita Settina, Center for Policy Alternatives and Paul Orum, Working Groups on Community Right-to-Know, 1991.

## DEMISE OF THE CITIZEN SUIT?

A problem with citizen suits under EPCRA has been the recurring question in the courts whether companies that fail to report under EPCRA can escape citizen suits by filing release reports *after* receiving notice of intent to sue.

Until recently, courts have said no. In the recent case of *The Steel Company v. Citizens for a Better Environment*, however, the Supreme Court decided that citizens cannot maintain lawsuits for purely past violations. “The practical impact of that ruling is considerable. It effectively insulates from citizen suit the enforcement of any environmental violation that a regulated entity can cure prior to the filing of the complaint, including curative efforts undertaken between the time of the citizen plaintiff’s filing of a 60-day notice letter and the complaint.”<sup>77</sup> And, while one can surely posit that the citizen has succeeded by inducing the compliance measures needed to avoid the lawsuit, the absence of civil penalties for past violations and of attorney’s fees award clearly undercuts the deterrence achieved.”<sup>78</sup> The result could be fewer citizen suits, or it could mean that those suits that are brought will either not be settled or settled on terms much less favorable to the citizen plaintiff.

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<sup>77</sup> This less favorable trend was further strengthened as a result of the following suit. United Steelworkers of America and Southwest Research Information Center in September 1998 filed suit against Chino Mines Company and Phelps Dodge Corporation for violations of TRI reporting requirements at their copper smelting operations in New Mexico. Paul Robinson of the Southwest Research and Information Center stated that they had considered the Supreme Court’s decision in the *Citizens for a Better Environment* case, but had decided to proceed nevertheless. The suit alleges that Phelps Dodge failed to accurately complete TRI reports for numerous hazardous chemicals at the Chino Mines facility, including antimony, arsenic, cobalt, lead, manganese and nickel. In addition to seeking proper reporting of toxic emissions, the plaintiffs sought fines and penalties. However, Phelps Dodge submitted the completed TRI reports following the citizen’s plaintiff 60-day notice letter and complaint and thus avoided suffering any fines or penalties.

<sup>78</sup> *Rise and Demise of the Citizen Suit* by Richard Lazarus from The Environmental Forum.

## **TRI AND PREVENTING ILLEGAL WASTE DUMPING**

### **BACKGROUND**

Hardrock mining creates massive quantities of toxic waste. For example, in 1998, the Cyprus Miami copper mine in Arizona released into the environment 123,388,300 pounds of TRI-reported toxic chemicals. 123 million pounds. One mine. To put that in perspective, in the same year the entire state of Washington released about 30 million pounds of TRI reported toxics. One hardrock mine, not an unusual mine, released four times as many toxic chemicals as all the polluters in the *entire state* of Washington.

### **SOME IN CONGRESS MAY PUT TOXIC BLINDERS ON**

For most other industries, TRI releases have generated public and political pressure to decrease waste production. However, in March 2000, despite the release of TRI information on the mining industry, industry advocates in Congress will try to *increase* the amount of legal hardrock mine waste dumping in two ways:

1. They will seek to strip current legal limits on mine waste dumping (including, but not limited to TRI-reported mine waste) on publicly-owned lands. The intended result: a *de facto* permit to dump unlimited quantities of waste on our public lands;
2. They will try to block new environmental mining regulations which could both reduce the amount of mine waste dumped and better control the waste that is dumped.

### **PREVENTING UNLIMITED MINE WASTE DUMPING**

Today, on our public lands many of the massive piles of mine waste exceed legal limits. That is because for years waste dumping limits were not enforced and unlimited. In spring of 1999, for the first time in decades, in response to pressure from environmental groups, the Departments of Interior and Agriculture enforced those waste dumping limits at a new mine proposal.

Mining industry advocates in Congress responded by attempting to change the mining law to remove all waste dumping limits, essentially legalizing waste dumping that had been illegal. Thanks to the help of grassroots activists around the country, they were mostly unsuccessful. As it stands today, all mines proposed after November 7, 1997 would be required to follow the law.

### **STRONGER ENVIRONMENTAL REGULATIONS**

When the mining industry wants to dig a mine on BLM-managed public lands to extract minerals, the BLM relies on rules in the US Code of Federal Regulations (*43 CFR 3809 or "3809"*) to determine requirements for environmental protection for that mine. Unfortunately, the existing "3809" rules are woefully inadequate. Established in 1981 and never revised, the 3809 rules do not provide adequate environmental protection. Since then, the mining industry has widely adopted new extraction technologies, such as the use of cyanide, that can destroy entire mountains—and create mountains of toxic waste.

Since 1997, BLM has been trying to strengthen these "3809" environmental rules. Since 1997 mining industry advocates in Congress have repeatedly delayed enactment of these rules. But in 1999 conservationists were successful in preventing efforts to delay the issuance of these new rules.

It is possible that these new rules could:

1. Allow BLM the right to deny mines in places where they do not belong. If there are fewer irresponsible mines, there will be less toxic mine waste. Currently, even if a mine would pollute a national park, or a wilderness area, BLM does not have the authority to stop a mine once it's proposed.
2. Strengthen reclamation bonding requirements. A reclamation bond is money a mine operator must post before mining. The bond is supposed to guarantee there will be sufficient funds to clean up the mine even if the operator should go bankrupt. Current bonding rules do not require sufficient funds, and mines too frequently go bankrupt and leave taxpayers with cleanup bills that can run into the hundreds of millions of dollars. If a mine operator was really required to post a bond sufficient to reclaim 123 million pounds of toxic waste before mining, chances are that mine operator would look for ways to produce less waste.
3. Strengthen environmental performance standards. By requiring mine operators to better protect rivers and streams, and to better reclaim the mine site after the mine is depleted (among other things), mine operators would have incentives to be more efficient and produce less waste in the first place. Current rules simply state that a mine owner should damage the environment only as much as a "prudent operator" would. Unfortunately, a prudent mine operator responds to its shareholders, not the environment.

## **WHAT'S HAPPENING IN CONGRESS IN MARCH 2000**

This spring, industry advocates in Congress are going to try to eliminate all waste dumping limits and legalize more toxic mine waste dumping. They will also try to stop the stronger 3809 regulations entirely, or delay them until the next presidential administration (when they could be substantially weakened).

Industry advocates will almost certainly try to do this by attaching anti-environmental riders to an Emergency Supplemental bill meant to fund the drug war in Colombia.

## **WHAT YOU CAN DO**

With the embarrassing data contained within the TRI report, we can show Congress the "No Dumping" sign on hardrock mine waste. Please:

1. Tell your press contacts about the mining industry's plans for Congress for this spring.
2. Call your Representative and Senators (Capitol switchboard: 202.224.3121). Tell them
  - ✓ to oppose any anti-environmental rider on the Emergency Supplemental bill that would legalize unlimited mine waste dumping
  - ✓ to oppose any anti-environmental rider on the Emergency Supplemental bill that blocks stronger environmental safeguards against the most polluting industry in the country - hardrock mining
  - ✓ to oppose any more special favors to an industry that gets taxpayer-owned minerals without paying a royalty, and is permitted to dump mine waste on publicly-owned land
3. Call President Clinton (202.456.1414) and Vice President Gore (202.456.2326) and tell them (in addition to the above messages) an environmental administration doesn't reward the most polluting industry in the country by allowing it to pollute more.

## CHEMICAL HEALTH EFFECTS

The following toxic waste chemicals are released by the mining industry and are reportable under Section 313 of the Community Right-to-Know Act. For each chemical, a summary of its characteristics and health effects are given.

### ALUMINUM

Aluminum is a naturally-occurring, flexible, silvery metal that is always found combined with a variety of minerals and rocks. Low-level exposure to aluminum from food, air, water, or contact with skin is not thought to harm human health. Aluminum is not a necessary substance for the human body, however, and too much may be harmful. Exposure to high levels of aluminum affects breathing, can cause bone damage and disease, and can damage the nervous system. Aluminum has been linked to Alzheimer's disease, though it is uncertain whether aluminum causes the disease or whether the buildup of aluminum happens to people who already have the disease.<sup>79</sup>

### AMMONIA

Ammonia is found as a colorless gas or water solution and has a strong and suffocating odor. It is used in making fertilizer, plastics, dyes, cleaners, and textiles. When breathed in, ammonia irritates the mouth, nose, throat, and lungs, and causes coughing and/or shortness of breath. It can severely burn the eyes and even lead to permanent eye damage. As well, it can cause headaches and loss of sense of smell. Contact with ammonia liquid can severely burn the skin, and can cause stomach sickness and vomiting. Long term exposure to ammonia can lead to chronic irritation of the eyes, nose, mouth, and throat. Higher exposures can cause a buildup of fluid in the lungs (pulmonary edema), which is a medical emergency and can be fatal.<sup>80</sup>

### ANTIMONY

Antimony is a silvery-white metal that is found in the earth's crust.<sup>81</sup> Mining companies produce antimony as a by-product of smelting lead and other metals. Long term exposure to antimony at high levels can irritate the eyes and lungs and can cause heart and lung problems, stomach pain, diarrhea, vomiting, and stomach ulcers. In short-term laboratory studies, animals that breathed high levels of antimony suffered lung, heart, liver, and kidney damage, while those that breathed very high levels of antimony died. Laboratory tests have also shown that antimony can cause reproductive dysfunction, hair loss, and skin irritation.<sup>82</sup>

<sup>79</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Aluminum," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

<sup>80</sup> New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, "Ammonia," [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm).

<sup>81</sup> Many of the metals summarized here are found naturally in the ground at low levels and may in fact be necessary in trace amounts to sustain some living organisms, including humans. However, when rock and mineral ores are unearthed through mining, these metals are set free by wind and water drainage and can spread through the environment in high concentrations. At such levels of concentration, these metals are toxic to wildlife and to humans. (Da Rosa, C. and Lyon, J., *Golden Dreams, Poisoned Streams*, 1997, pp. 68, 239.)

<sup>82</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Antimony," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

## **ARSENIC AND ARSENIC COMPOUNDS**

Arsenic and arsenic compounds are metals that are found naturally in the ground at low levels, especially in ores that contain copper and lead. Some less harmful compounds are also found in plants and animals. Arsenic is a powerful poison that at high oral dosages can cause severe illness and death through fluid loss and circulatory collapse. In smaller oral doses, arsenic causes gastrointestinal pain, hemorrhage, nausea, vomiting, diarrhea, and anemia. It can also damage the nerves, inducing headaches, lethargy, confusion, hallucination, seizures, and coma. Breathing high levels of arsenic causes a sore throat and irritated lungs. Long-time exposure to arsenic can cause abnormal heart rhythm, blood vessel damage, liver damage, a “pins and needles” sensation in hands and feet, darkening of the skin, and the appearance of small corns or warts on the body. Arsenic is also a known carcinogen, as determined by the Department of Health and Human Services (DHHS). Breathing arsenic increases the risk of lung cancer, and ingesting arsenic increases the risk of skin cancer and tumors of the lungs, bladder, kidney, and liver.<sup>83</sup> Arsenic is the top priority of the 1999 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) List of Priority Hazardous Substances.<sup>84</sup>

## **BARIUM AND BARIUM COMPOUNDS**

Barium is naturally-occurring silvery-white metal that is normally found combined with sulfur or carbon and oxygen. Barium compounds can also be produced by the mining industry, which uses them as drill bit lubricants. Barium gets into the air during the mining, refining, and production of barium compounds, and through the burning of coal and oil. Barium compounds that do not dissolve well in water are generally harmless and are often used for medical purposes. However, barium compounds that do dissolve well in water can harm human health. Ingesting high levels of these barium compounds can cause difficulties in breathing, increased blood pressure, changes in heart rhythm, stomach irritation, brain swelling, muscle weakness, and damage to the liver, kidney, heart, and spleen.<sup>85</sup>

## **CADMIUM AND CADMIUM COMPOUNDS**

Cadmium is a naturally-occurring metal found in the earth's crust, usually as a mineral combined with other elements. Cadmium is extracted during the mining and production of other metals like zinc, lead, and copper. It is released into the wider environment by mining and other industries, through the burning of coal and household wastes, and through waste disposal and spills or leaks at hazardous waste sites. Long term, low-level exposure to cadmium leads to a build-up in the body that can cause kidney disease, lung damage, and fragile bones. Breathing high levels of cadmium severely damages the lungs and can be fatal. Eating food or drinking water with very high levels of cadmium severely irritates the stomach, leading to vomiting and

<sup>83</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, “Arsenic,” [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

<sup>84</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, “1999 CERCLA List of Priority Hazardous Substances,” [www.atsdr.cdc.gov/99list.html](http://www.atsdr.cdc.gov/99list.html). This list ranks substances based on a combination of their frequency, toxicity, and potential for human exposure at facilities on the National Priorities List (NPL) list.

<sup>85</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, “Barium,” [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

diarrhea. Cadmium and cadmium compounds have been determined to be carcinogens by the DHHS.<sup>86</sup>

## CHLORINE

Chlorine is a greenish-yellow gas with an irritating odor; it can also be found in liquid solutions. Chlorine is used in making solvents, chemicals, disinfectants, and cleaners. Exposure to chlorine causes irritation of the eyes, nose, and throat, which includes symptoms such as tearing, coughing, sputum, bloody nose, and chest pain. Higher levels of exposure can burn the lungs, cause bronchitis, cause a buildup of fluid (pulmonary edema), lead to permanent lung damage, and can be fatal. Contact with chlorine can severely burn the eyes and skin, and can cause permanent damage. Long term exposure to chlorine can damage the teeth.<sup>87</sup>

## CHROMIUM AND CHROMIUM COMPOUNDS

Chromium is a naturally occurring metal found in rocks, soil, plants, animals, and volcanic dust and gases. It is found in three different forms: chromium (III) and (VI) occur naturally, while chromium (0) is man-made. Chromium is used for a variety of industrial purposes, including making steel and other alloys, bricks for furnaces, and chrome plating. All forms of chromium can be toxic at high levels. They can damage the lungs, and can cause allergic reactions on the skin. Breathing very high levels of chromium (VI) in air can damage and irritate the nose, lungs, stomach, and intestines. Long term exposures to high or moderate levels of chromium (VI) cause damage to the nose (bleeding, itching, sores) and lungs, and can increase the risk of a variety of lung diseases. Ingesting very large amounts of chromium can cause stomach upsets and ulcers, convulsions, kidney and liver damage, and even death. Skin contact with liquids or solids containing chromium (VI) may lead to skin ulcers, severe redness, and swelling. The DHHS has determined that certain chromium (VI) compounds are known carcinogens.<sup>88</sup>

## COBALT

Cobalt is a gray, shiny, hard metal that occurs naturally in food, vitamin B12, soil, dust, and seawater. Cobalt is used in industry to make alloys (mixtures of metals), and as an additive to certain paints and enamels. While it is beneficial in small amounts, exposure to high levels of cobalt can harm human health. It can irritate the skin, eyes, nose, throat, and lungs and can cause asthma, pneumonia, wheezing, and fluid build-up (pulmonary edema). Repeated exposure to cobalt dust can cause scarring of the lungs (fibrosis), which can be disabling or fatal. Cobalt may also affect the heart, kidneys, and thyroid. The International Agency for Research on Cancer has determined that cobalt is a probable carcinogen.<sup>89</sup>

<sup>86</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Cadmium," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

<sup>87</sup> New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, "Chlorine," [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm).

<sup>88</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Chromium," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

<sup>89</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Cobalt," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm), and New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, "Cobalt," [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm).

## **COPPER AND COPPER COMPOUNDS**

Copper is a naturally-occurring reddish-brown metal that, in low amounts, is an essential element for both plants and animals. It is mined in the United States and is used extensively in the electrical industry, as well as for plumbing, heating, and building construction. Exposure to dust and fumes can irritate the eyes, nose, and throat, and can cause coughing, wheezing, nosebleeds, and ulcers. It can also lead to “metal fume fever,” a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness, and cough. Exposure to copper can cause anemia, poor growth, and can adversely affect the central nervous system. Eye contact with copper particles can lead to blindness and skin contact with copper can cause an allergic reaction. Long-term exposure to copper has also been known to cause nausea, diarrhea, headache, dizziness, drowsiness, and anorexia. Repeated exposure may cause thickening of the skin, a greenish color to the skin, teeth, and hair, and damage to the liver and kidneys. Adverse health effects from copper can also include anemia, poor growth, and adverse effects on the central nervous system.<sup>90</sup>

## **CYANIDE AND CYANIDE COMPOUNDS**

Cyanide occurs naturally, primarily in plants, but it is released into the environment mainly through human activities. It is generally found combined with other chemicals to form compounds such as hydrogen cyanide, sodium cyanide, and potassium cyanide. Cyanide and cyanide compounds are used as chemical processing agents in the mining process in order to separate metals sought in an ore body from the rock that surrounds it. Cyanide can be discharged in tailings or released accidentally through holding pond breakage, overflow or through piping system failure. Cyanide is a very poisonous chemical. Exposure to high levels of cyanide harms the brain and heart, and can induce coma or cause death. Exposure to lower levels can result in breathing difficulties, heart pains, vomiting, blood changes, headaches, and enlargement of the thyroid gland. Skin contact with cyanide can produce irritation and sores.<sup>91</sup>

## **HYDROGEN CHLORIDE (HYDROCHLORIC ACID)**

Hydrogen chloride is a colorless gas with a strong odor. It usually exists in a solution named hydrochloric acid, which is used in metal processing, analytical chemistry, and in making other chemicals. Hydrogen chloride is a corrosive chemical. Contact with it and with hydrochloric acid can severely burn the skin and eyes, and can cause blindness. Breathing the vapor can irritate the mouth, nose, throat, and lungs, and can cause coughing, shortness of breath, and bronchitis. Higher exposures can cause a buildup of fluid in the lungs (pulmonary edema), a medical emergency. Long term exposure can cause erosion of the teeth. There is evidence to suggest that workers who manufacture hydrogen chloride have an increase of respiratory cancers.<sup>92</sup>

<sup>90</sup> New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, “Copper,” [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm), and Da Rosa, C. and Lyon, J. (1997) *Golden Dreams, Poisoned Streams*, p. 242.

<sup>91</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, “Cyanide,” [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm), and ATSDR (1989), *Public Health Statement on Cyanide*.

<sup>92</sup> New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, “Hydrogen chloride,” [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm).

## LEAD

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. It can now be found in all parts of our environment, most of it having come from human activities like mining, manufacturing, and the burning of fossil fuels. Lead can affect almost every organ and system in the body. Breathing lead fumes can irritate the eyes, nose, and throat. Breathing or swallowing lead can damage the nervous system, kidneys, and especially the immune system. Exposure to lead is more harmful to young and unborn children through their mothers. High levels of exposure to lead can cause abortions, premature births, smaller babies, decreased mental ability in an infant, learning difficulties, and reduced growth in young children. It can also damage the male reproductive system. Lead can cause headaches, irritability, disturbed sleep, aching, decreased reaction time, weakness in arms and legs, and poor memory and concentration. Lead has been found to be carcinogenic in laboratory studies on animals.<sup>93</sup> It is the second highest priority on the 1999 CERCLA List of Priority Hazardous Substances.<sup>94</sup>

## MANGANESE

Manganese is a naturally occurring, very hard and brittle metal. It is used by industry to increase the strength of steel alloys. The human body is tolerant of manganese in very low levels, but does not need it for survival. Exposure to manganese can lead to chronic poisoning and a range of pulmonary maladies, including pneumonia and severe bronchitis. It is also known to effect the central nervous system and can produce a Parkinson's disease-like syndrome. At lower levels of exposure, manganese can lead to an increased susceptibility to infection and respiratory problems.<sup>95</sup>

## NICKEL

Nickel is a hard, silvery-white metal that is found abundantly in the environment. A small amount of nickel is probably essential for humans, although a lack of nickel has not been found to affect the health of humans. Direct skin contact with nickel can produce an allergic reaction; eating it in food, drinking it in water, or breathing dust containing it also causes an allergic reaction or asthma attack in some people. Breathing large amounts of nickel can cause chronic bronchitis and reduced lung function. Drinking very, very high amounts of nickel can effect the stomach, kidneys, and blood. The DHHS has determined that nickel and certain nickel compounds may reasonably be considered to be carcinogens, causing cancers of the lung and nasal sinus in particular.<sup>96</sup>

## SELENIUM

Selenium is a metal commonly found in rocks and soil, usually combined with silver, copper, lead, nickel, and sulfide minerals. Selenium and selenium compounds are used for a variety of

<sup>93</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Lead," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm), and New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, "Lead," [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm)

<sup>94</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, *1999 CERCLA List of Priority Hazardous Substances*, [www.atsdr.cdc.gov/99list.html](http://www.atsdr.cdc.gov/99list.html).

<sup>95</sup> Barceloux, D.G. (1999) "Manganese," *Journal of Toxicology and Clinical Toxicology*, 37 (2), and EPA working group (1999) "Health assessment document for manganese". Accessed through the National Library of Medicine, TOXNET, Toxicology Literature Online (TOXLINE) Search, [www.sis.nlm.nih.gov/sis/htmgen?TOXLINE.htm](http://www.sis.nlm.nih.gov/sis/htmgen?TOXLINE.htm).

<sup>96</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Nickel," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

industrial and consumer purposes. The human body requires selenium in very small doses, however accidentally swallowing a large amount of selenium can be life-threatening without immediate medical treatment. Ingesting too much selenium can lead to brittle hair, deformed nails, and loss of feeling and control in the arms and legs. Exposure to very high levels of selenium can cause dizziness, fatigue, irritation, collection of fluid in the lungs, and severe bronchitis. Upon contact with skin, selenium compounds can cause rashes, swelling, and pain. The DHHS has determined that selenium sulfide is reasonably anticipated to be a carcinogen. However, other selenium compounds are not classified as such.<sup>97</sup>

## SILVER

Silver is a naturally-occurring lustrous metal. It is highly valued for a variety of industrial and consumer purposes, and is currently mined within the United States. Silver is harmless in small amounts, and a small but measurable amount is generally accumulated in the human body over a lifetime. Chronic exposure to silver, however, causes conditions such as argyria, a medically benign but permanent bluish-gray discoloration of the skin, and argyrosis, a build-up of silver in the eyes. Exposure to higher levels of silver can adversely affect the human body, primarily through damaging the liver and cardiovascular system.<sup>98</sup>

## SULFURIC ACID

Sulfuric acid is a highly corrosive, oily liquid. Sulfuric acid is a byproduct of the mining process that causes acid mine drainage. This acidic runoff can lower the pH of streams to a point at which plants, animals, and fish are unlikely to survive. Contact with sulfuric acid can severely burn the skin and eyes and can cause permanent damage. Exposure to sulfuric acid fumes can irritate the eyes, nose, throat, and lungs, causing chest tightness, coughing, and shortness of breath. High levels of exposure can burn the lungs and lead to a buildup of fluid (pulmonary edema), a medical emergency. Sulfuric acid can cause chronic runny nose, tearing of the eyes, nose bleeds, and an upset stomach. These chronic health effects can occur at some time after initial exposure to sulfuric acid and can last for months or years. Repeated exposure to sulfuric acid can cause bronchitis, emphysema, and erosion and pitting of the teeth.<sup>99</sup>

## THALLIUM

Thallium is a bluish-white metal that is found in trace amounts in the earth's crust. High level exposure to thallium can adversely effect the nervous system, damage the lungs, heart, liver, and kidneys, and can even be fatal. Ingesting large amounts of thallium can cause vomiting, diarrhea, and temporary hair loss. Laboratory tests on rats have shown that exposure to thallium can damage the reproductive system damage and cause birth defects.<sup>100</sup>

<sup>97</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Selenium," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

<sup>98</sup> National Library of Medicine, TOXNET, Integrated Risk Information Service (IRIS) Search, "Silver," [www.sis.nlm.nih.gov/cgi-bin/sis/htmlgen?IRIS.htm](http://www.sis.nlm.nih.gov/cgi-bin/sis/htmlgen?IRIS.htm).

<sup>99</sup> New Jersey Department of Health and Human Services, Right to Know Hazardous Substance Fact Sheets, "Sulfuric Acid," [www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm](http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm), and Da Rosa, C. and Lyon, J. (1997) *Golden Dreams, Poisoned Streams*, p. 64-67.

<sup>100</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Thallium," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

## ZINC

Zinc is a soft bluish-white metal that is one of the most common elements in the earth's crust. It is released into the environment primarily through mining, steel production, coal burning, and burning of waste. While zinc is an essential element for the human body, exposure to large amounts of zinc can be harmful. Ingesting large amounts of it can cause stomach cramps, nausea, vomiting, anemia, pancreas damage, and lower levels of beneficial cholesterol. Breathing large amounts can cause a "metal fume fever," a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness, and cough. Direct skin contact with zinc can produce irritation. Laboratory tests on rats have shown that high levels of zinc can cause infertility and smaller-birth size in rats. Refining zinc may give off cadmium, which is known to cause cancer.<sup>101</sup>

## SELECT TRI REPORTABLE TOXIC CHEMICALS

### Ranking in 1999 CERCLA List of Priority Hazardous Substances, Drinking Water Standards, Aquatic Life Standards

Toxic Chemical	Ranking in 1999 CERCLA List of Priority Hazardous Substances <sup>102</sup>	Drinking Water Standards <sup>103</sup> Maximum Concentration Level (MCL) <sup>104</sup> Mg/L	Aquatic Life Standards <sup>105</sup> MCL Mg/L
Aluminum	193	0.05 to 0.2*	---
Ammonia	158	---	---
Antimony	251	0.006	---
Arsenic	1	0.05	0.36
Barium	99	2	---
Cadmium	7	0.005	0.0037
Chlorine	84	250* (Chloride)	---
Chromium	16 [Chromium (VI)] 73 (Chromium)	0.1 (Total Chromium)	0.55 [Chromium (III)] 0.015 [Chromium (VI)]
Cobalt	49	---	---
Copper	124	1.3†	0.017
Cyanide	26	0.2	0.022
Hydrochloric acid	---	---	---
Lead	2	0.015†	0.065

<sup>101</sup> Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, "Zinc," [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm), and Da Rosa, C. and Lyon, J. (1997) *Golden Dreams, Poisoned Streams*, p. 246.

<sup>102</sup> 1999 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) List of Priority Hazardous Substances, [www.atsdr.cdc.gov/99list.html](http://www.atsdr.cdc.gov/99list.html).

<sup>103</sup> U.S. EPA, Current Drinking Water Standards, [www.epa.gov/OGWDW/creg.html](http://www.epa.gov/OGWDW/creg.html).

<sup>104</sup> Maximum Contaminant Level (MCL) is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. MCLs are enforceable standards.

<sup>105</sup> U.S. EPA, 40 CFR 131.36, July 1, 1995 edition.

Manganese	141	0.05*	---
Nickel	52	0.04§	1.4
Selenium	143	0.05	0.020
Silver	207	.10*	0.0034
Sulfuric acid	---	---	---
Thallium	---	0.002	---
Zinc	70	5*	0.11

\* The concentration limits for aluminum, chlorine, manganese, silver, and zinc are those given in the National Secondary Drinking Water Regulations (NSDWRs or secondary standards). These are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water, but that pose a health risk only at a very high level of contamination. The EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

† Lead and copper are regulated in a treatment technique that requires systems to take tap water samples at sites with lead or copper pipes with lead solder and/or that are served by lead service lines. The action level, which triggers water systems into taking treatment steps if exceeded in more than 10% of tap water samples, is 1.3 mg/L for copper and 0.015mg/L for lead.

§ The EPA recommends that children drink water containing no more than 0.04 milligrams of nickel per liter of water (0.04 mg/L) for 1–10 days of exposure. Figure from Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services, ToxFAQS, “Nickel,” [www.atsdr.cdc.gov/toxfaq.htm](http://www.atsdr.cdc.gov/toxfaq.htm).

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## REFERENCE INFORMATION

In this section additional information is provided on thresholds, reducing and correcting data errors, *de minimis* exemption, and the limitations of TRI. This information was provided for your reference, as it may prove useful if you need further explanations for certain aspects of TRI.

### THRESHOLDS

The applicable thresholds for reporting depend on what happens to a chemical at a facility. It is possible for one toxic chemical to fit into more than one threshold category. For example, if a mining facility both manufactures sodium cyanide and uses it as a leaching agent in gold mining, the amount manufactured would be applied to the manufacturing threshold, while the amount used as a leaching agent would be applied to the “otherwise use” threshold.

Citizens should be aware that EPA has introduced an alternate threshold for facilities with relatively low quantities of listed chemicals in waste. Beginning in reporting year 1995, if a facility's total annual reportable amount of a chemical does not exceed 500 pounds, and the facility does not manufacture, process, or otherwise use more than one million pounds of the chemical, it may submit a simplified Form A.<sup>106</sup> Instead of filing a Form R<sup>107</sup> detailing all its releases and waste management activities, the facility can submit a certification statement (Form A). Form A certifies that the facility met the conditions for the listed chemical, but does not require reporting of any amounts of the toxic chemical released or otherwise managed as waste. Despite the limitations of Form A, without it, users of TRI data would not have access to any information on these chemicals.<sup>108</sup>

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<sup>106</sup> 59 FR 61488; November 30, 1994.

<sup>107</sup> Facilities subject to reporting must either submit a Form R or a Form A.

<sup>108</sup> U.S. EPA, *Alternate Threshold for Low Annual Reportable Amounts*, Federal Register: Dec. 24, 1997 (Vol.62, No. 247), p. 67385.

## REDUCING AND CORRECTING DATA ERRORS

In order for citizens to have an idea of the accuracy of the data available to them through TRI, they should have a general understanding of how the data is submitted to EPA and how EPA attempts to reduce and correct reporting errors.

Submissions completed on EPA or approved vendor software have built-in quality assurance and quality control checks in the software. The EPA, therefore, encourages the submission of data on magnetic media to reduce errors in data reporting.<sup>109</sup> EPA also encourages the electronic submittal of the Form R via the "Automated TRI Reporting System." Use of this system saves time in data entry and photocopying and reduces errors by means of automated validation procedures.<sup>110</sup>

EPA annually issues notices of non-compliance and notices of technical error to facilities for which it has identified reporting errors. Generally, a Notice of Technical Error (NOTE) is issued in response to minor inaccuracies or emissions. Facilities are asked to respond to a NOTE within 21 calendar days of receiving the error letter. Notices of Significant Error (NOSE) are issued for errors that prevent the EPA from entering the submission into the database. A facility must respond to a NOSE within 21 days or risk receiving a Notice of Noncompliance (NON). Failure to respond to a NON within 30 days of receipt may result in an enforcement action.<sup>111</sup>

Errors on Form R or Form A may also be discovered by the reporting facility while reviewing past entries and preparing current submissions. When this occurs, the facility should submit a revised Form R.<sup>112</sup>

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<sup>109</sup> U.S. EPA, Solid Waste and Emergency Response, *RCRA, Superfund and EPCRA Hotline Training Module*, "Using the Toxics Release Inventory," June 1997, p. 7.

<sup>110</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 2-12.

<sup>111</sup> U.S. EPA, Solid Waste and Emergency Response, *RCRA, Superfund and EPCRA Hotline Training Module*, "Using the Toxics Release Inventory," June 1997, p. 7.

<sup>112</sup> U.S. EPA, Solid Waste and Emergency Response, *RCRA, Superfund and EPCRA Hotline Training Module*, "Using the Toxics Release Inventory," June 1997, p. 7.

## ***DE MINIMIS EXEMPTION***

The *de minimis* concentration for mixtures or other trade name products is 1%, except for Occupational Health and Safety Act carcinogens, which have a 0.1% *de minimis* concentration. PBTs, however, have no *de minimis* exemptions.

Citizens should be aware that the mining industry may try to make extensive use of the *de minimis* exemption. According to the NMA, “Given the scale of mining operations and the reporting thresholds, the existing *de minimis* exemptions (1% and 0.1%) are even more important for this industry.”<sup>113</sup> The mining industry contends that for most metal mining operations, concentrations of metals and metal compounds in ore are significantly below the *de minimis* concentration.<sup>114</sup> Chemicals in ore or concentrate that are below *de minimis* levels and remain below those levels are eligible for the *de minimis* exemption. If a TRI chemical, however, is at a concentration in ore below the *de minimis* level, and is concentrated above the *de minimis* level during beneficiation, mining companies must consider amounts of the concentrate above *de minimis* concentrations toward threshold determination and release reporting.<sup>115</sup>

The exemption, however, does not apply to TRI chemicals that are “coincidentally manufactured” as byproducts by mining facilities during beneficiation. For example, a cobalt mine extracts ore containing arsenic. During beneficiation, arsenic compounds in the ore convert to other arsenic compounds, which the facility removes and manages as waste. The facility coincidentally manufactured arsenic compounds as a byproduct, and the *de minimis* exemption does not apply to release reporting.<sup>116</sup>

Also important to note, is that TRI chemicals in waste rock are not eligible for the *de minimis* exemption.<sup>117</sup> Therefore, if mining operations exceed a threshold for a TRI chemical that is present in waste rock, they must report that chemical, regardless of concentration.

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<sup>113</sup> NMA Statement on Possible Expansion of EPCRA Section 313 Reporting Requirements- Toxics Release Inventory to Susan Hazen, OPPT, U.S. EPA, June 8, 1995.

<sup>114</sup> U.S. EPA, *Final Rule on the Addition of Facilities in Certain Industry Sectors*, Federal Register: May 1, 1997 (Vol.62, No. 84)p. 23858.

<sup>115</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance- Metal Mining Facilities*, January 1999, p. 3-27.

<sup>116</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 3-27.

<sup>117</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance-Metal Mining Facilities*, January 1999, p. 3-27.

## LIMITATIONS OF TRI

There are certain general limitations of TRI data of which citizens should be aware before attempting to access and use the data. These limitations will also apply to mining industry TRI data.

### TOXIC CHEMICALS COVERED

In reporting year 1995, 286 chemicals were added to TRI, bringing the toxic chemical list to over 600 toxic chemicals and 28 chemical compound categories.<sup>118</sup> Although it may seem that TRI covers information on a significant portion of toxic chemicals, it does not cover all toxic chemicals. In fact, while the TRI includes 71,381 reports from 21,626 facilities for 1996, the 2.43 billion pounds of on-and off-site releases reported represent only a portion of all toxic chemical releases nationwide.<sup>119</sup>

#### *Form Qualifiers*

Some toxic chemicals are listed in 40 CFR 372.65 with a specific form qualifier, meaning that only the specified form of the chemical is subject to reporting. For example, three metal compounds, aluminum, vanadium, and zinc, are listed with the qualifier “fume or dust.”<sup>120</sup> Only the fume or dust forms of these chemicals are considered toxic chemicals. The qualifier excludes wet forms of the metal compounds, such as solution or slurries, from reporting requirements.

Another form qualifier that mining activists need to be aware of is the qualifier that excludes all non-aerosol forms of sulfuric acid from the list of toxic chemicals subject to reporting. This qualifier limits sulfuric acid reporting under TRI to “acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size.”<sup>121</sup> Dilute sulfuric acid is used as a leaching agent in copper mining. Although the aerosol qualifier limits the amount of reportable sulfuric acid, it is accepted that the spraying of dilute sulfuric acid onto ore during leaching operations results in the manufacture of aerosol sulfuric acid.<sup>122</sup> “Each time the spray system aerosolizes the sulfuric acid, the facility manufactures sulfuric acid (acid aerosols),”<sup>123</sup> and reporting would be triggered when the threshold is exceeded.

Mines, however, that use a sulfuric acid drip system that is in contact with an ore leach pile are not considered to manufacture sulfuric acid in an aerosol form. This is because the sulfuric acid in this case does not become airborne.<sup>124</sup>

#### *Petition Process*

Under section 313 of EPCRA, any person may petition the EPA to make modifications to the list of toxic chemicals, including modifications to chemical categories. The petition process is a means by which the general public and industry can petition EPA to add chemicals or to delete

<sup>118</sup> 40 CFR 372.65

<sup>119</sup> U.S. EPA, OPPT, 1996 Toxics Release Inventory, Public Data Release- 10 Years of Right-to-Know, May 1998, p. 9.

<sup>120</sup> 40 CFR 372.65

<sup>121</sup> 40 CFR 372.65

<sup>122</sup> U.S. EPA, OPPT, Washington D.C., EPCRA Section 313 Industry Guidance- Metal Mining Facilities, January 1999, p. 3-12.

<sup>123</sup> U.S. EPA, OPPT, Washington D.C., EPCRA Section 313 Industry Guidance- Metal Mining Facilities, January 1999, p. 3-12.

<sup>124</sup> U.S. EPA, OPPT, Washington D.C., *EPCRA Section 313 Industry Guidance- Metal Mining Facilities*, January 1999, p. 3-13.

chemicals from the toxic chemical list. In developing a petition the petitioner provides EPA as much credible scientific support documentation as possible supporting their petition request. The petition must include thorough documentation on the justification as to why the chemical should be listed or de-listed.<sup>125</sup>

Activists need to be aware, however, that this is a difficult process and whenever possible, they should work with people who have already gone through the process.

## **ESTIMATED DATA**

Facilities ordinarily report estimated data to TRI. The program does not require facilities to monitor or measure their releases. Various estimation techniques are used when monitoring data are not available. The use of different estimation methodologies by different facilities can lead to inaccurate data. In an effort to assist companies estimate their releases, the EPA has published estimation guidance for the regulated community.<sup>126</sup>

## **TRI DATA INSUFFICIENT TO TRACK POLLUTION PREVENTION**

Currently, TRI has an “end-of-the-pipe” emphasis as it only collects information on releases and other waste management.<sup>127</sup> It does not measure changes that are made upstream to reduce toxic chemical use or the generation of waste. In other words, TRI doesn't tell you if a mine used processing chemicals more efficiently this year than in a previous reporting year.

EPA is, however, working on expanding TRI reporting to incorporate chemical use to provide for full accounting of all toxic chemicals that flow through the industrial facilities. EPA believes that chemical use data could provide communities and government with information to better evaluate facilities' source reduction and pollution prevention performance.<sup>128</sup>

## **TRI DATA INSUFFICIENT TO DETERMINE PUBLIC EXPOSURE**

TRI reports show toxic chemical releases and other waste management activities of chemicals, not exposure of the public to those chemicals. Release estimates alone are not sufficient to determine exposure or to calculate potential adverse effects on human health and the environment. Many factors need to be taken into account in the determination of potential risk such as the toxicity of the chemical, the fate of the chemical after it is released, the locality of the release, and the human or other populations that are exposed to the chemical after its release.<sup>129</sup> None of this data is available under TRI. Biodegradability is another important factor for determining exposure not included in TRI. Metals, for example, are persistent and will not degrade when released to the environment.

Also important in determining exposure and risk may be the rate of chemical release. The public or the environment may be at less risk if a small amount of the chemical is emitted daily

<sup>125</sup> U.S. EPA, Solid Waste and Emergency Response, RCRA, Superfund and EPCRA Hotline Training Module, “Reporting Requirements,” June 1997, p. 11.

<sup>126</sup> U.S. EPA, OPPT, 1996 Toxics Release Inventory, Public Data Release-10 Years of Right-to-Know, May 1998, p. 9.

<sup>127</sup>

<sup>128</sup> U.S. EPA, OPPT, 1996 Toxics Release Inventory, Public Data Release-10 Years of Right-to-Know, May 1998, p. 12.

<sup>129</sup> U.S. EPA, OPPT, 1996 Toxics Release Inventory, Public Data Release-10 Years of Right-to-Know, May 1998, p. 10.

throughout the year than if a large amount is emitted at once. TRI reports only show annual emissions, and do not provide information on the rate of chemical release.

## FAILURE TO REPORT

Another major limitation on TRI data is that the data are self-reported by industry. As a result, some facilities may not be fully complying with the reporting requirements. An EPA survey estimated the compliance rate for reporting for 1987 to be 66%.<sup>130</sup> Through mass mailings to all facilities within the manufacturing sector, work with trade associations, local and national seminars, training courses, and enforcement activities, EPA has endeavored to locate all facilities required to report and to inform them of their obligations. The EPA believes that these outreach and enforcement activities have, in subsequent years, substantially increased the rate of compliance.<sup>131</sup>

## PHANTOM REDUCTIONS

Finally, there may be uncertainty underlying industry's claim that it has reduced pollution by 50% since 1988.<sup>132</sup> Environmentalists have charged that this figure includes "phantom reductions," changes that reduce a company's releases on paper only, and that reduce neither releases nor production waste. The following is a list of reductions considered to be "phantom reductions" by the Working Group on Community Right-to-Know:<sup>133</sup>

- ✓ Recalculating release using different techniques;
- ✓ De-listing chemicals or switching to unlisted toxics;
- ✓ Incorporating toxics into products;
- ✓ Contracting highly polluting processes to others;
- ✓ Moving some operations to other countries;
- ✓ Touting temporary production declines as prevention; and
- ✓ Obscuring some off-site transfers (e.g. to underground injection or recycling).

An EPA survey of 1,200 facilities found that less than half of the reductions from 1989-1990 were due to source reduction.<sup>134</sup> Other factors, such as declining production, revised estimates, and de-listed chemicals, accounted for over half the changes. Fluctuations in production were the most frequently cited reason for change and accounted for the largest absolute change.

Though there is no way of knowing by examining the TRI data whether reductions indicate source reduction, waste management, or phantom reductions, the Working Group on Community Right-to-Know suggests getting in touch with the company contact identified in the release report (Form R), and having the company explain their year-to-year changes in the TRI reports.<sup>135</sup>

<sup>130</sup> U.S. EPA, OPPT, About the Toxics Release Inventory Data Collection on the EPA's TRI website at [www.epa.gov/opptintr/tri/triwww.htm](http://www.epa.gov/opptintr/tri/triwww.htm).

<sup>131</sup> U.S. EPA, OPPT, About the Toxics Release Inventory Data Collection on the EPA's TRI website at [www.epa.gov/opptintr/tri/triwww.htm](http://www.epa.gov/opptintr/tri/triwww.htm).

<sup>132</sup> Shelley A. Hearne, "Tracking Toxics," *Environment*, Vol. 38, No. 6, July/August 1996, p. 8.

<sup>133</sup> Working Group on Community Right-to-Know, *Phantom Reductions Worksheet*.

<sup>134</sup> "Right-to-Know Reports Show Change" from *Working Notes on Community Right-to-Know*, March- April 1993, p. 1.

<sup>135</sup> "Right-to-Know Reports Show Change" from *Working Notes on Community Right-to-Know*, March- April 1993, p. 1.