



EARTHWORKS

## EARTHWORKS FACTSHEET

# Title III of HR 2262: Protecting Clean Water, Public Lands and Communities

### **Modern Mines Need a Modern Mining Law**

Unlike other extractive industries, there is no environmental law written specifically to govern hardrock mining. The 1872 Mining Law facilitates mining – it includes no environmental provisions. Instead, a patchwork of federal and state laws attempts to regulate the industry.

As modern mining problems have demonstrated, the current legal and regulatory system fails to protect western water resources, public lands, and communities. Reform of the 1872 Mining Law must include clear operating and reclamation standards to prevent future spills and contamination, make sure mining is done in the most responsible manner and ensure operations are cleaned up after mine closure.

Title III of HR 2262, the Hardrock Mining and Reclamation Act of 2007, puts into place important operating and reclamation standards to ensure that water, lands, and communities are protected from the potential impacts of hardrock mining.

### **Hydrological Consequences of Mining:**

*A hydrologic baseline must be established and an assessment of the probable cumulative impacts of mining on the hydrologic balance must demonstrate that the impacts to human health, water resources, wildlife habitat, and other natural resources will not cause undue degradation. The proposed operation must be designed to operate to minimize disturbances to the prevailing hydrologic balance at the mine site and surrounding basins. This balance includes the quantity and quality of surface and ground waters.*

The Kendall Mine, an open pit, cyanide-leach mine located northwest of Lewistown, Montana, was permitted in 1989. The mine caused extensive water quality problems including numerous cyanide spills.<sup>1</sup> In addition, precipitation flowing through the waste rock piles caused extensive contamination of groundwater and surface water. The contamination forced the company to install a pump back system that has dewatered springs and streams in the area. Even though mining ceased in 1996, reclamation is still not complete and water quality and quantity problems still exist. In October, 2001, six families who live downstream of the mine filed suit against the company for damages to their water supplies and private property. State officials have determined that long-term water treatment will be required at the mine.<sup>2</sup>

### **Water Quality Standards:**

*No mining shall “cause or contribute to violations of water quality standards in affected waters.”*

The Beal Mountain Mine, located on the Beaverhead Deerlodge National Forest, operated

<sup>1</sup> <http://www.epa.gov/epaoswer/other/mining/techdocs/gold.pdf>

<sup>2</sup> <http://www.deq.state.mt.us/eis/CRKendall/Scoping.pdf>

from 1989 to 1998. When the mine was permitted, the Environmental Analysis concluded that the operation of the mine would have no impacts to water quality, because “there will be no discharge of mine or process water to surface waters.”<sup>3</sup> The agencies were wrong. Although the mine ceased operating years ago, it has continued to pollute neighboring streams with cyanide, selenium and copper at levels that harm aquatic life.<sup>4</sup> Scientists have also determined that trout in water downstream of the mine are contaminated with harmful amounts of selenium caused by mining activities.<sup>5</sup> Warren McCullough, who is responsible for enforcing state mine permit laws for Montana DEQ, told the Montana Standard in July 2003 that the aftermath of the closed Beal Mountain Mine is “not going to be something that we’re ever going to be able to walk away from.” The State has determined that contaminated runoff from the mine will have to be treated in perpetuity.

#### **Prevention of Perpetual Pollution:**

*A mine reclamation plan must demonstrate that 10 years following mine closure, no treatment of surface or ground water for carcinogens or toxins will be required to meet water quality standards at the point of discharge.*

Perpetual pollution is a serious issue at many mines, with pollution of both ground and surface water predicted for hundreds, if not thousands, of years. The Zortman Landusky gold mine is located on federal land in Montana, just south of the Fort Belknap Reservation—home to the Gros Ventre and Assiniboine Tribes. Acid runoff from the mine has caused severe pollution of streams and groundwater.<sup>6</sup> Despite ongoing water quality problems, the U.S. Bureau of Land Management (BLM) approved numerous expansions of the mine, more than doubling the size of the operation.<sup>7</sup> In 1995, the EPA and the Tribes filed suit against the company, charging that its discharges “present human health risks” and that “the acidity of the discharges would kill fish and aquatic life.”<sup>8</sup> In 1998, the company filed for bankruptcy, leaving substantial reclamation costs and long-term water pollution. Over \$30 million in public funds are being spent at the site.<sup>9</sup> Polluted runoff from the mine has to be captured and treated in perpetuity to prevent contamination of additional important water resources downstream.

#### **Prevention of Acid Mine Drainage:**

*Mining activities must prevent, to the fullest extent possible, the formation of acidic or toxic mine drainage. If any such toxic drainage does form, mechanisms must be set up to control the spread of contamination.*

During a period of high metal prices, Canadian start-up Formosa Exploration Inc. launched a copper and zinc mine on 76 acres of federal (BLM) and private land near the town of Riddle in southwest Oregon, then folded 2 1/2 years later in 1994 as prices slumped. According to the State of Oregon, the mine has contaminated 18 miles of the Oregon’s Umpqua watershed, eliminating prime habitat for the threatened Oregon coast Coho salmon and steelhead.<sup>10</sup> So severe is the pollution that even insect life is gone in the upper reaches of

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<sup>3</sup> “Beal Mountain Reclamation Under Fire,” Montana Standard, July 14, 2002

<sup>4</sup> Action Memorandum for Beal Mountain Mine Time Critical Removal. Beaverhead-Deerlodge National Forest, Silver Bow County, Montana, July 2003.

<sup>5</sup> Aquatic Hazard Assessment for Selenium in the German Gulch subwatershed, Based on 2001 and 2002 Data. Prepared January 2003 by Tim LaMarr, Reviewed by Dennis Lemly.

<sup>6</sup> U.S. BLM, Action Memorandum for Zortman and Landusky Mines Time Critical Removal. June 2004

<sup>7</sup> U.S. BLM, Action Memorandum for Zortman and Landusky Mines Time Critical Removal. June 2004

<sup>8</sup> Final Supplemental EIS for the Zortman and Landusky mines, Phillips County, Montana, MDEQ and BLM, December 2001.

<sup>9</sup> Mitchell, Larry, “Metal Mine Bonding in Montana” A report of the Montana Environmental Quality Council, May 2004. And, House Bill 379: <http://data.opi.state.mt.us/bills/2005/billhtml/HB0379.htm>

<sup>10</sup> State of Oregon, Department of Environmental Quality, Fact Sheet: Oregon’s Abandoned Mine Cleanups Complicated by High Cost and Lack of Funding. March 13, 2006.

the creeks, along with any chance of rearing fish. The mine currently emits about five million gallons of acid drainage every year, containing up to 30,000 pounds of dissolved copper and zinc—metals that are particularly toxic to fish.<sup>11</sup> An estimated \$10–\$30 million in public funds will be needed in cleanup costs. The agencies have already spent approximately \$1.5 million.<sup>12</sup>

#### **Pit Lakes:**

*Backfilling of open pits is required by the Secretary only if it is deemed to be the “the most appropriate means of controlling long-term adverse impacts on public health or the environment.” The water quality of all pits and all hydrologically connected groundwater must comply with Federal, State and local water quality standards.*

The Mule Canyon Mine is an open pit gold mine located in Nevada. Mining began in 1989 with the eventual creation of six pits with associated waste rock dumps, a heap leach facility, and a mill. Mining was completed in 2005, with activity in the South Pit ending in December 1999. The 1995 Environmental Impact Statement (EIS) for Mule Canyon predicted that only pit lakes would form in the South and West Pits. The South Pit Lake was expected to be approximately 110 feet deep, and the West Pit with two “ponds” less than 20 feet deep. Seasonal temporary ponds were predicted in the other pits as well.<sup>13</sup> These water level predictions were considerably off the mark,<sup>14</sup> with all of the pits currently having substantial pit lakes and the South Pit expected to overflow the rim.<sup>15</sup> As a result, a potentially serious water contamination situation has arisen since the South Pit lake water is of poor quality with low pH and elevated levels of Total Dissolved Solids, sulfate, magnesium, and manganese (over 10 times acceptable levels).<sup>16</sup> Newmont Mining Inc. has initiated interim procedures, and has proposed further interim procedures to evaporate the “excess” water to prevent contamination of surface drainages. It is not clear whether this degraded water may have already infiltrated into the groundwater.

#### **Balancing Mining with Other Important Land Uses:**

*All mineral activities “shall protect the environment, public health, and public safety from undue degradation” and must be conducted in a manner that recognizes the value of lands for other uses.*

The federal government currently interprets the 1872 Mining Law to make mining the highest and best use for public lands. Federal land managers give preference to mining over all other land uses—from providing clean water to recreation to hunting. All other types of mine proposals (e.g. coal) on public lands must be weighed against other potential land uses before a permit can be granted. In the modern era, federal land management agencies often argue that they cannot deny hardrock mining proposals because of the 1872 Mining Law.

A Canadian mining company is proposing to construct a large open pit, cyanide heap leach gold mine at the headwaters of the Boise River. Although the mine would operate for only seven to ten years, it would create an ongoing threat to the region's most important water resource. The Boise River is responsible for more than 20 percent of the City of Boise's municipal water supply, critical wildlife and fish habitat, irrigation for agriculture, and a wide

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<sup>11</sup> U.S. EPA, Fact Sheet: Formosa Mine, Douglas County Oregon, March 2007.

<sup>12</sup> Oregonian, “EPA wants life-draining southern Oregon site cleaned up”, March 8, 2007.

<sup>13</sup> US BLM, Final Mule Canyon Environmental Impact Statement, (NV-060 1793/3809 N64-92-001P, September 1996, pg 4-9.

<sup>14</sup> According to the EIS the water level in the South Pit would have only risen to about 5690 feet AMSL. Currently, the level is at the rim or about 5940 AMSL, so about 250 feet higher than predicted.

<sup>15</sup> US Bureau of Land Management, Environmental Assessment Mule Canyon Mine Interim Water Management Plan, NV063-EA07-084, June 2007.

<sup>16</sup> *ibid*, appendix B.

range of recreational opportunities. In February 2007, the Boise City Council passed a resolution opposing the proposed mine, and the Boise Mayor called it "an intolerable threat to the river, the environment, and the citizens of Boise." HR 2262 would give land managers the ability to deny such mine permits.

#### **Predictive Modeling:**

*An analysis of the potential hydrologic consequences of the mineral activities, both on and off site, with respect to quantity and quality of water in surface and ground water systems, is required before a permit is issued. The Secretary must approve any hydrological or other modeling that is used.*

In order to be permitted under the current patchwork of regulations, a proposed mine must predict that it will comply with applicable environmental standards. At the time they are permitted, mining operations always predict that they will comply with applicable standards during and after mining operations.

However, in 2006, two unprecedented, scientific, peer-reviewed studies were published, analyzing the methods and models used to predict water quality impacts and comparing the predicted versus actual impacts to water. The studies found the models and methods used to predict water impacts were flawed and that more than 75% of the major hardrock mines surveyed exceeded water quality standards despite their predictions.<sup>17</sup>

#### **Permit Modification If Problems Occur:**

*A permit modification is required if unanticipated events or conditions exist on the mine site, including the development of acid mine drainage, loss of water supplies or springs, water quantity or quality impacts not predicted, need for long term water treatment, reclamation difficulties or failure, discovery of significant cultural, biological or scientific resources or the discover of public safety hazards.*

The Grouse Creek mine, located adjacent to the largest wilderness complex in the lower 48 states, was heralded as a "state of the art" mine when it began operations in 1994. Just three years later, the mine shut its doors—producing no profits and leaving behind a legacy of long-term water pollution. The Grouse Creek mine was permitted as a "zero discharge facility."<sup>18</sup> Yet soon after mining began, the tailings impoundment began to leak cyanide solution. As a result of ongoing violations, the Forest Service posted signs which warned "Caution, do not drink this water."<sup>19</sup> In 2003, the Forest Service declared the mine site an "imminent and substantial endangerment."<sup>20</sup> Cleanup activities are ongoing.

#### **Financial Assurance Tied To Reclamation Standards:**

*A mining company must secure enough of a bond to complete reclamation and restoration of the mining area, including potential long-term water impacts. The bond amount must take into account the maximum amount of financial exposure that a government agency would assume in the event of forfeiture.*

The Summitville mine, which is located at the headwaters of the Alamosa River, was permitted as a "zero-discharge" mine in 1985.<sup>21</sup> The company and governmental agencies

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<sup>17</sup> <http://www.earthworksaction.org/pubs/ComparisonsReportFinal.pdf>  
<http://www.earthworksaction.org/pubs/PredictionsReportFinal.pdf>

<sup>18</sup> Record of Decision and Final Supplemental Environmental Impact Statement - Volume 1, Grouse Creek Project, USDA Forest Service Challis National Forest, May 1992

<sup>19</sup> Associated Press, "Mine processing waste still entering Jordan Creek," September 8, 1999; see also, "Idaho Fines Open-Pit Gold Mine \$210,000 for Polluting Local Creek," Salt Lake Tribune, October 2, 1999

<sup>20</sup> Forest Service and Environmental Protection Agency, "Removal Action Memorandum," May 21, 2003

<sup>21</sup> <http://www.epa.gov/Region8/sf/co/summitville/SummitvilleCIPFinal09Aug05.pdf>

did not predict or authorize discharges into rivers or streams. Due to poor mine design and other problems, the heap leach system overflowed in 1992, destroying all biological life in a 17-mile stretch of the Alamosa River.<sup>22</sup> Almost 300 million gallons of contaminated water were captured for treatment in 2005.<sup>23</sup> However, according to a 2005 EPA Summitville update, the mine continues to discharge contaminated water due to limited storage and treatment capacity. An estimated 65 million gallons of untreated water were released into the Wrightman Fork in 2005, and flows of contaminated water to the Alamosa River cause water standards to continue to be exceeded on a regular basis.<sup>24</sup> The company filed for bankruptcy in 1992, leaving cleanup costs to the public. When the mine was first permitted, a \$4.7 million bond was required of the company.<sup>25</sup> According to the EPA, about \$210 million in public funds have been spent so far.<sup>26</sup>

### **Bad Actors:**

*A Mining company, its subsidiary, officer or director cannot get a permit if they are currently violating any applicable State or Federal law, unless corrective action is taken. If a pattern of willful violations is demonstrated, the applicant is ineligible for a permit.*

Over the past 20 years, Frank Duval, one of the founders of Revett Minerals, has played a key roll in numerous environmentally damaging mining companies and mine protects. A 2003 report authored by the Corporate Research Project identified eight mining companies at which Duval has been a top executive, director or major investor. Nearly all of them are now defunct or in limbo, with most having serious environmental problems.<sup>27</sup> Three of the companies ended in bankruptcy court, and three of the mines are currently on the Superfund National Priorities list, including Zortman-Landusky, which is referenced above. Revett Minerals currently wants to construct the proposed Rock Creek mine, adjacent to and underneath the Cabinet Mountains Wilderness Area and upstream from northern Idaho's famous Lake Pend Oreille.

### **Stabilization of Piles/Dust Control:**

*All segregated soils, waste material piles, ore piles, subgrade ore piles, and open or partially backfilled mine pits shall be engineered to prevent hazards and to control fugitive dust and erosion.*

Dust blowing from tailings piles can be problematic at some Southwestern mines. For example, according to local residents, dust blowing from the tailings piles at the Ray Mine in central Arizona often blows into the nearby towns of Hayden and Winkleman. After citizen complaints following a 2005 incident of blowing dust from the tailings, the Arizona Department of Environmental Quality announced that a \$77,500 penalty under a consent judgment was levied on ASARCO because of air quality violations in Gila County.<sup>28</sup>

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<sup>22</sup> U.S. EPA, Site Status and Update: <http://www.epa.gov/region8/superfund/co/summitville/>

<sup>23</sup> Ibid

<sup>24</sup> Ibid

<sup>25</sup> [http://www.hcn.org/servlets/hcn.Article?article\\_id=2006](http://www.hcn.org/servlets/hcn.Article?article_id=2006)

<sup>26</sup> U.S. EPA, Summitville Fact Sheet

(<http://www.epa.gov/region8/superfund/co/summitville/SummitvilleFactSheetUpdateDec05.pdf>)

<sup>27</sup> [rockcreekalliance.org/NewsRoom/Newsletters/sterlingreport.pdf](http://rockcreekalliance.org/NewsRoom/Newsletters/sterlingreport.pdf)

<sup>28</sup> <http://www.azdeq.gov/function/news/2007/april.html>