

# The LOGBOOK of CSP<sup>2</sup>

The CENTER for SCIENCE in PUBLIC PARTICIPATION

*"Technical Support for Grassroots Public Interest Groups"*

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## FUNDING LONG-TERM RECLAMATION



*Alder Gulch Waste Dump failure at the Zortman Mine*

### Funding Reclamation & LTMM

CSP<sup>2</sup> has worked diligently on long-term reclamation funding issues for well over a decade. CSP<sup>2</sup> published "Hardrock Reclamation Bonding Practices in the Western United States" by Jim Kuipers in 2000, and performed a detailed analysis of the reclamation sureties for all major Alaska mines, culminating in a report "Alaska Large Mine Reclamation Bonding – 2005" that was presented at several major professional meetings.

The money to pay for the reclamation of a mine, should the operator go into bankruptcy, is commonly referred to as a "reclamation bond". However, "bond" refers to a specific financial instrument, while the money to accomplish reclamation can be a letter-of-credit (the most common surety form today), cash, bond, insurance policy, or other financial instrument that is acceptable to regulatory agencies, who are responsible for insuring that the public is not liable for these costs. The more correct term for this money is

"financial surety" which covers all of the different potential financial instruments. However, the term "bond" has been and will continue to be used interchangeably with "financial surety".

### What Should be Included in a "Bond"

The reclamation bond (financial surety) should not only cover the costs of moving dirt to cover the direct impacts of mining and any long term water treatment costs, which typically can double the amount of the financial surety, but it should also cover holding costs, and Long Term Monitoring & Maintenance (LTMM). Holding costs are the costs that would be incurred by the regulatory agency immediately after a bankruptcy and before actual reclamation begins – costs like continuing water treatment, routine maintenance, and the other non-operating costs involved with holding a piece of disturbed land until reclamation can begin. Long Term Monitoring & Maintenance costs include water quality monitoring, maintenance of tailings dams, waste rock dumps, and roads. These facili-

*(Continued on page 2)*



*Alder Gulch Waste Dump side view*



*Alder Gulch Waste Dump failure looking downhill*

*(Continued from page 1)*

ties will need to remain in place in perpetuity, even after the mine is “reclaimed”.

There are a number of ways that agencies can come up short on the amount of money required for a reclamation surety. Items can be underestimated, omitted, or ignored. For example, holding costs have been omitted from many reclamation surety estimates. Even for those financial sureties where holding costs have been included they are often underestimated – especially the length of time a mine will remain awaiting-reclamation before the actual reclamation work actually begins. Often omitted is the cost of annual inflation. The average rate of inflation since 1914 has been 3.37% (annual). If a reclamation surety is \$25 - \$50 million (but could be over \$300 million), the annual increased liability to the public is \$840,000 - \$1.7 million, an amount that most agencies would be strapped to come up with. The typical reclamation surety is revisited by an agency every 5 years, with no inflation provision during that period.

### **Stuff Happens**

An example of a cost that was unintentionally omitted occurred at the Zortman Mine. The minesite, located high in the Little Rocky Mountains in northern Montana, experienced a 1-in-500 year storm event in May, 2011. The lower approximate ¼ of one waste dump washed down a small, steep canyon below the minesite. Although a thorough scientific autopsy of the failure has not been undertaken, it is probable this failure was due to

two factors: (1) the saturation of the lower portion of the waste dump and subsequent slumping due to increased pore pressures (pressure transmitted by water between mineral grains) created by the weight of the dump itself; and, (2) mechanical wasting and chemical decomposition of the material in the dump itself related to the oxidation of sulfide minerals over several decades. The waste rock was placed at angle-of-repose, but as the sulfide minerals oxidized (releasing metals contaminants into the water, which was collected and treated) the waste rock physically broke down into smaller rocks and particles. The smaller the size of the rocks, the lower the natural angle-of-repose. So, as the waste rock degraded, material that was originally placed at a stable angle-of-repose became over-steepened and unstable.

It is estimated that it will take over \$1 million just to stabilize the failed waste dump. At this point picking up the material that washed into the canyon below the mine would probably do more damage than good, and is not a part of this cost estimate. However, there is no money in the reclamation surety to pay for any of this. This was not a “reasonably foreseeable” event, so was not covered by the financial surety. (see **From the Executive Director** on the next page for more discussion of how regulators define “reasonably foreseeable.”) Monies to accomplish this work, when and if they become available, will come from government agencies (i.e. general tax revenue) because the mine operator went bankrupt in 1998, and there is no legally liable

*(Continued on page 3)*



*Waste in channel below Alder Waste Gulch Dump*



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**FROM THE EXECUTIVE DIRECTOR**

**Will a “Bond” Cover an Environmental Accident?**



There is some confusion as to what a reclamation bond (financial surety) will cover.

A bond (financial surety) for a mine can only be used for “reasonably foreseeable circumstances.”

*Dave Chambers is the Executive Director of CSP<sup>2</sup>*

The bond provides money for dirt work to close the mine, for water treatment costs, and for long term monitoring and maintenance.

A financial surety cannot be used to cover the costs of environmental accidents related to the mine, such as those caused by heavy rain or earthquakes, and it cannot be used to compensate neighbors of the mine whose property or businesses may be damaged financially by the mine.

If a tailings dam fails, if fish are killed, if dust impacts farms, none of these are covered by the financial surety. In fact, there is usually no financial mechanism at a mine to pay for these impacts, other than litigation against the mine operator (if they still exist).

So, the short answer to the question “Will a mine bond cover the costs of an environmental accident?” is NO. This is a commonly misunderstood, but clearly an important point, about regulatory guarantees.

There could be a simple, systematic, solution to this problem – like a general reclamation fund that all mines contribute to, and is available in these unforeseen, emergency situations – but there is no such fund available anywhere today, or any proposal for other solutions. This same generic approach to a fund for “unforeseen” emergencies could also be used to pay for environmental accidents at mines, but this would require a much bigger fund. Asking for the mining industry to pay for this fund would be very controversial, and the mining industry would fight any such proposal.

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*(Continued from page 2)*

entity to pursue for further funding. The taxpayer then becomes the only remaining source of funds.

This is not an example of incompetence or malfeasance, but it is the type of thing that can still happen under present procedures for calculating reclamation financial sureties. The inertia of large bureaucracies is difficult to change, and there is pressure from the regulated companies not increase the costs of mining.

Much of the work we do here at CSP2 is reactive, and even when we see opportunities to “get in front” of some of these problems, there is much resistance to our proposed solutions. And, like most other situations where large sums of money are involved, the resistance to change seems to be directly linked to the amount of money at stake.

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*Riparian zone damage below Alder Waste Gulch Dump*



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