

Bonding for Large Mine Projects

State of Alaska
Department of Natural Resources
DMLW Mining Section

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BONDING

Feel the Excitement

Lessons Learned in Alaska

- The Illinois Creek Heap Leach gold mine failed financially in 1998.
- The State was on the hook for millions of dollars in reclamation and closure costs.
- State was successful in attracting a venture that mined to reclaim the property (American Reclamation Group)
- The ARG made money, the site was reclaimed, and the state even made a little money (\$838,000).
- The State and Industry got real lucky!



Illinois Creek Gold Mine



Reclamation: *Waste Rock Illinois Crk*

2001 Before Regrade



08 29 2001 11:43

Reclamation: *Waste Rock Illinois Crk*

2003: Grading and Initial Revegetation



7/22/2003 6:25pm

Reclamation: *Waste Rock Illinois Crk*



Underlying Philosophy

- At no time is the financial assurance to be less than the amount required by the State to complete reclamation -- should the operator be unable to do so.
- The bond amount can be increased any time the mine is shown to have inadequate financial assurance.

Authorities

- Reclamation Bonding is required in Alaska (AS 27.19) for mining projects
 - State reclamation standards apply to state, federal, municipal, and private lands and waters subject to mining
 - The bond is based on a Reclamation Plan that must be approved by the DNR prior to mining
 - DEC has separate bonding requirements that can be included with the DNR into a single bond.



State's View of the "Bond"

Company's View of the "Bond"



Reclamation Standard

AS 29.19.020

- “A mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a **stable condition.**”

Stable Condition

AS 29.19.020

- Definition “means the rehabilitation, where feasible, of the physical environment of the site to a condition that allows for the reestablishment of renewable resources on the site within a reasonable period of time by natural processes.”

Reclamation Performance Standards

11 AAC 97.200

- Return waterborne soil erosion to pre-mining levels in one year.
- Achieve revegetation, where feasible, in five years without reseeding or fertilizer
- Topsoil is to be salvaged, stockpiled and protected for later use in reclamation to aid in revegetation
- Surface contours are to be made conducive to natural revegetation
- Site shall be reclaimed such that it retains sufficient moisture for natural revegetation
- Stream channels disturbed need to be reestablished in a stable condition or location
- Pit and quarry walls and subsidence features need to be made stable.

not stable

stable



not stable!



definitely not stable!



Performance Standards (con't)

11 AAC 97.210-240

- Buildings and structures are to be removed unless authorized to stay.
- Scrap iron, equipment, tools, piping, hardware, chemicals, fuels, waste, and general construction debris are to be removed or properly disposed of.
- Facilities associated with heap leach facilities – heaps, pads, ponds, etc. are to be reclaimed.
- Underground openings are to be sealed after closure.
- “A miner shall reclaim a mined area that has potential to generate acid rock drainage (acid mine drainage) in a manner that prevents the generation of acid rock drainage or prevents the offsite discharge of acid rock drainage.”

Acid Rock Drainage, Colorado



Reclamation Plan

- Plan to be submitted to the DNR Commissioner 45 days before mining starts
- Plan is to be reviewed for 30 days once it is deemed complete.
- Plan does not take effect and mining cannot begin until the bond is posted.

Reclamation Plan General Elements

- Property descriptions and maps
- Description of mining plan and schedule
- Reclamation measures for treatment of:
 - Topsoil and revegetation
 - Tailings ponds, reservoirs, dumps, pits, etc.
 - Stream replacement
 - Roads, airstrips, and access
 - Buildings

Two Bull Ridge – Topsoil replacement and revegetation.



Bonding Statute (AS 27.19.040)

- Bond amount not to exceed an amount reasonably necessary to ensure performance of the reclamation plan
- DNR Commissioner shall establish the bond amount
- A cooperative management agreement with the Feds or another State agency is allowed

DEC Statute AS46.03.100(f) for Waste Management and Disposal

- Financial assurance required for closure and monitoring:
 - of a solid waste facility with chemical treatment of ores (tailings and rock dumps)
 - of a facility with potential to generate or generates Acid Rock Drainage



ATTITUDE

A Sense of Humor Can Help Make Even the Toughest Job Easier

Bonding Instruments – Large Mines

(11 AAC 97.4)

- Performance Bond to be placed with DNR
 - Corporate Surety Bond
 - Personal Bond accompanied by:
 - Letter of Credit
 - Certificate of Deposit
 - Deposit of cash
 - Deposit of gold bullion (25% greater than bond am't)
 - General Performance Bond
 - Payments to the Mine Reclamation Trust Fund (AS 37.14.800)
- Interest earned may stay with the bond

The DNR can accept bullion!



Bond Calculation

- Can be completed by the applicant and approved by the DNR
- Can be completed jointly by the applicant and the DNR
- Is to be calculated in a manner so as the State can conduct the reclamation if default occurs.

equipment may not be available in bankruptcy; assets may be “frozen”



Bond Calculation Elements

- Calculation needs to agree with Reclamation and Closure Plan and include inflation.
- Rental Equipment to be used at current rates – quotes required
- Labor with burden at little Davis-Bacon rates
- Mob-Demob estimated for the site (not % of directs)
- Salvage value of buildings and equipment cannot be utilized
- Includes water treatment and post closure monitoring
- Indirect costs include: engineering redesign, contingency, contractor profit, agency administration costs, etc.

Updates to the Financial Assurance Package

- At least every 5 years when permits are renewed
- After an environmental audit
- Upon significant mine design changes that would effect the bond calculation
- Major changes in prices of fuel or consumables
- Anytime it is believed that the project is under-bonded

Anchorage Fuel Prices – July 2008

Regular

441 $\frac{9}{10}$

Plus

454 $\frac{9}{10}$

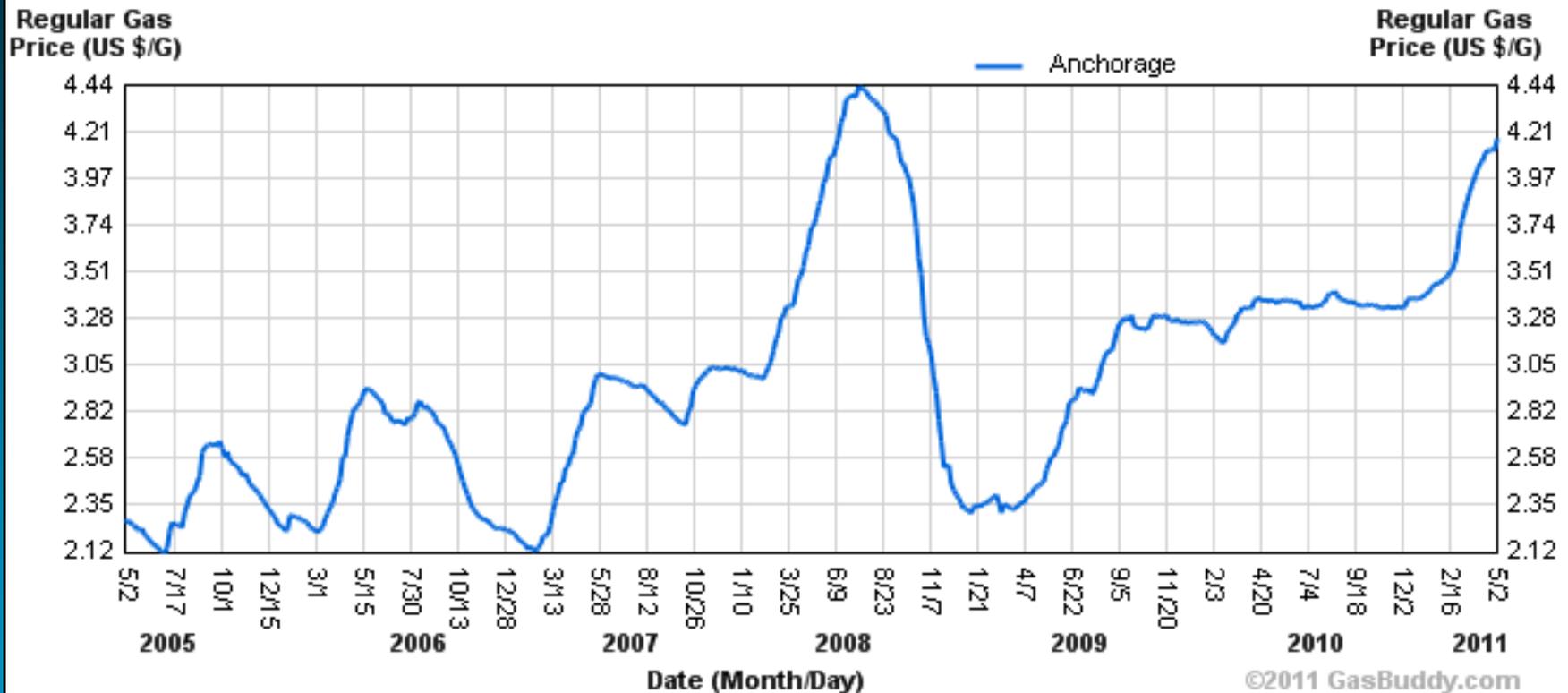
V-Power⁺

454 $\frac{9}{10}$

24 Hours

Anchorage Gas Prices May 2005 to May 2011

72 Month Average Retail Price Chart



Bond Amounts for Alaska Mines

| <i>Operation</i> | <i>Total Bond (\$ Millions)</i> | |
|----------------------------------|---------------------------------|-------------------------------------|
| Greens Creek Mine | \$30.5 | Currently being updated |
| Red Dog Mine | \$304.5 | Updated in 2010 |
| Fort Knox (& True North) Mine | \$37.6 | Updated for inflation in 2009 |
| Usibelli Coal Mine & Exploration | \$11.3 | |
| Kensington Project | \$7.4 | Currently under review |
| Rock Creek Mine | \$6.8 | Currently under review |
| Pogo Mine and Road | \$49.2 | (interim accepted amount in 2011) |
| Nixon Fork Mine | \$3.5 | (\$4.8 proposed by Co., April 2011) |



RELATIONSHIPS

Always different at first, always the same at the end

Bond Phasing

- The entire Reclamation Bond need not be posted “up front.”
- The bond amount must cover the amount of reclamation and closure costs at any given time in the mine life.
- The bonds are reviewed at least every five years or more often to ensure they are adequate
- Concurrent reclamation is encouraged and bonds can be reduced accordingly

EPA – Oh Boy, Federal Help!

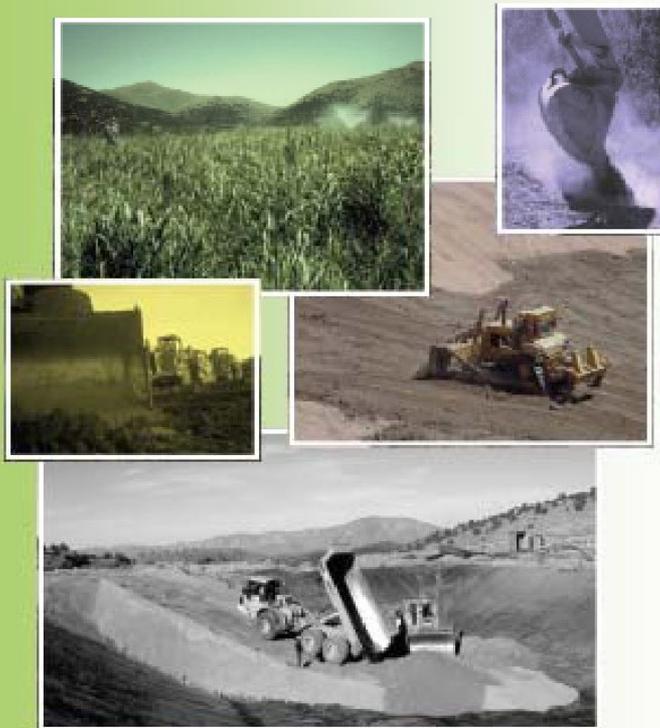
- July 10, 2009 EPA issued notice identifying hardrock mining for financial assurance requirements thru CERCLA -- sec. 108(b)
- Initial focus is on metal mining but will eventually include industrial minerals as well.
- It is the first step in rulemaking.
- They plan to propose the rule in the fall of 2011.

Challenge to the States

- Develop financial assurance requirements and standards -- if not already on the books
- Work with EPA to recognize effective State programs.
- Vigorously fight to avoid duplication of financial assurance packages or preemption of state programs

Standardized Reclamation Cost Model

User Manual Public Domain Version



Goal

Develop a Standard Cost
Model

Input from

Mining Industry

Federal Agencies

DEC

Stakeholders

Thank You

- Photos from:
 - Dispair.com
 - Miningmahem.com