Mining Laws & Regulations and How Financial Assurance Calculations are Made

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Topics Discussed

- Federal Laws and Regulations applicable to Mining

- How is Financial Assurance Determined?
  - Mine Cleanup Planning / Cost Estimation
  - Financial Assurance Administration
Mine Regulation and Life-Cycle

Mineral Development and Mine Rehabilitation Activities through the Mine Life Cycle

- Exploration
- Development and Construction
- General Mining Law, FLPMA
- NEPA, CAA, CWA, SMCRA
- RCRA, CWA, CAA
- CERCLA, CWA, SMCRA

- Post Closure
- Implementation and Revision Closure Plans
- Financial Assurance
- Monitoring
- Address Mine Hazards

- Extraction, Beneficiation
- Final Design, Construction

- EIS Permits
- NEPA, CAA, CWA, SMCRA
- CERCLA, NEPA, SMCRA

- Closure Cleanup
- Mine Operations/Processing
Management of Federal Lands

- BLM manages some 261 million acres, over 90% located in 13 Western states, including Alaska. Approximately 90% is open to hardrock mineral exploration and mining;
- FS oversees more than 160 million acres in the West. 80% is open to hardrock mining; however, like BLM, a relatively small area is being mined.
- Mining on Federal land generally triggers either BLM’s Part 3809 regulations (43 CFR Part 3809) and/or FS’s Part 228 regulations.
General Mining Law of 1872 (30 USC 29)

- Provides a mining claimant the right to patent (i.e., acquire absolute title to minerals) mining claims or sites if they meet the statutory requirements.

- What is the highest and best use of public lands?

- The BLM administers this program through its Washington and 12 State Offices
Forest Service Organic Administration Act

- **Forest Service Organic Administration Act (Act of June 4, 1897)**
  The “organic act” governed the administration of national forest lands. The act specified the purposes for which forest reserves might be established and provided for their protection and management.

- Today, this act is one of several Federal laws under which the Forest Service operates.

- While the Organic Administration Act remains significant, it must be read in conjunction with the later acts, which expand the purpose and uses of the national forests.
National Environmental Policy Act 1970

- Requires submittal of an EIS if a "major federal action" has been triggered.
- Most proposed mines trigger a EIS. Mine EISs often take 5–7 years to complete.
- BLM does not believe it is a requirement of NEPA to include FA in the DEIS.
- EPA has routinely submitted detailed comments on DEISs for proposed mines.
- The EIS process has become one of the main forums to oppose new or expanded mining.
- Many states now have their own versions of NEPA and mines are required to submit a state EIS (ie Michigan Kennicott Eagle mine)
Federal Land Policy Management Act (FLPMA) 1976

- Established goal for DOI to manage their lands to avoid undue and unnecessary degradation of human health and the environment.
- Required DOI to develop mining regulations to assure that use of federal lands could meet environmental standards – led to the issuance of BLM’s 3809 (43 CFR Part 3809) and FS 228 regulations (36 CFR Part 228)
- BLM 3809/FS 228 regulations require approval by FLMAs of a mine operation and reclamation and closure plans.
- Mine operation plan requires compliance with applicable state and federal environmental regulations.
NEPA Integration with EPA Statutes

- Clean Water Act NPDES Permits (Section 402)
- Clean Water Act Dredge and Fill Permits (Section 404)
- Clean Air Act (Section 309)
- Safe Drinking Water (Underground Injection Control (UIC) Permits)
Mine Cleanup Planning under NEPA

• **Required Information**
  - Identification of cleanup requirements
  - Location of features and facilities
  - Description of surface disturbance
  - Description of facilities and equipment
  - Description of operations
  - Description of maintenance
  - Description of monitoring
  - Description of mitigations
  - Description of other activities
Identification of Mine Cleanup Tasks—FLMA Guidance

- Categories of Tasks
  - Interim Operations and Maintenance
  - Water Management and Treatment
  - Hazardous Materials
  - Demolition, Removal and Disposal of Facilities and Equipment
  - Earthwork (sloping, backfill, grading)
  - Revegetation
  - Mitigations
  - Long-Term Operations and Maintenance
  - Monitoring
Mine Cleanup Cost Estimation

- What is the likelihood of an adverse environmental event taking place? Do you assume a “abundance of caution” approach to costing the future?

  • Direct Costs
  - Direct costs include capital costs for cleanup tasks related to surface disturbances, facilities and other capital items necessary for ongoing processes (such as groundwater pumping and water treatment facilities).

  • Indirect Costs
  - Indirect costs include contingency, engineering redesign, mobilization/demobilization, contractor overhead and profit, agency contract administration and agency indirect costs
Cost Escalation and Inflation

- Application
  - Rates of Return and Inflation Rate (No uniform approach between EPA and BLM/FS)
- Calculation (use of cost models SRCE/RACER)
- Risk and Uncertainty (when will an event occur/probability of event)
- Scheduling
- Cash Flow Analysis
- Estimate Checking
Existing FR Mechanisms

- FS allows:
  - Surety Bonds
  - Letters of Credit
  - Corporate guarantee
  - CDs
  - Cash
  - Deposit of Negotiable Securities
  - Trusts

- BLM allows:
  - Surety Bonds
  - Irrevocable letter of credit
  - Cash
  - CDs
  - Corporate guarantee (only if in existence Jan 2001)
  - State–required mechanisms (e.g., bond pool)
  - Trusts
States allow:
- Surety Bonds, Letters of Credit, and cash
- CDs, insurance, trust funds, and deposits
- 25% of States allow o/o to self insure

RCRA Subtitle C allows:
- Surety bond
- Letter of credit
- Insurance
- Trust fund
- Financial test
- Corporate guarantee
Both BLM and FS require financial guarantees (bonding) for full-reclamation costs.

BLM/FS considers reclamation an “umbrella” term that includes mitigation and remediation and encompasses long-term care which includes treatment for acid mine drainage.
Typical reclamation tasks for both BLM and FS fall into the following general categories:
--Operation, maintenance, and monitoring (interim and long-term);
--Hazardous materials – isolation, removal, treatment or control of hazardous or toxic materials;
--Detoxification/water treatment/disposal of wastes;
--Demolition, removal and disposal of uncontaminated structures, equipment and materials;
--Earthwork/recontouring;
--Revegetation/stabilization; and
--Mitigation – rehabilitation of fisheries/wildlife habitat.

In 2004, FS published, Training Guide for Reclamation Bond Estimation and Administration, in response to their experiences dealing with inadequate bonds, resulting from mine closures in the late 1990s.
BLM Mine Operations and Closure Plan requirements

- A plan of operations, filed with the local BLM field office must include information that will demonstrate to BLM that the proposed operations prevent unnecessary or undue degradation. The plan of operation must include among other things:
  - (1) operator information;
  - (2) a description of operations, including maps, conceptual designs, water management plans, rock characterization and handling plans, quality assurance plans, spill contingency plans, a reclamation plan including plans for re-grading and re-shaping, the feasibility of pit backfilling, riparian mitigation, wildlife habitat rehabilitation, topsoil handling, re-vegetation, isolation and control of acid-forming, toxic or deleterious materials, removal or stabilization of building, structures, and support facilities and post-closure management;
  - (3) a monitoring plan for monitoring the effect of your operations to demonstrate compliance with the approved plan and other laws and regulations, to provide early detection of potential problems, and to supply information to assist in directing corrective actions should they become necessary;
  - (4) an interim management plan and a
  - (5) reclamation cost estimate.
Key issue to trigger BLM action to address environmental degradation at mines is the definition of “unnecessary or undue”.

BLM defines this term as:

*Substantial irreparable harm to significant scientific, cultural, or environmental resource values on the public lands from substantial irreparable harm that can not be mitigated and which would not be otherwise be prevented by other laws.*
BLM Views on Mining BMPs

- BLM believes that the probability of causing a future CERCLA site is very small, because the mining industry is employing “best management practices”.

- BLM and FS believe that their regulations, guidances and/or training guides provide adequate authority to cover the suite of potential environmental problems that arise from hardrock mining.
BLM Bond Process

- BLM regulations require review of FA every two or three years, depending on the type of mining underway. GAO noted that reviews may not be conducted as required.
- BLM and FS do not bond for off-site treatment (on private lands), but would bond to address the source of acid mine drainage that occurred on public lands.
- When bond reviews identify a need, BLM and/or the FS may require establishment of a trust fund or other mechanism to ensure continuation of long-term treatment to achieve water quality standards and other long-term, post-mining maintenance requirements.
As of 2008–2009, BLM has more than $1.1 billion in total obligated bonds for 440 “plans of operations” on hardrock mining sites. Of that total, some $925 million is for Nevada bonds, and more than $700 million in Nevada bonds is for two operators: Newmont and Barrick.

No reliable FA estimates are available for FS sites.
Summary of Mining History, Financial Assurance, and Estimated Cleanup Costs at Western Mines

- Phoenix Mine

  - EPA recommended financial assurance of $33.5M in 2002, while BLM agreed with Newmont’s estimate of $.41M, which was based on a nominal rate of return of 9.8 percent.¹

  - Great Basin Mine Watch recommended financial assurance of approximately $60M.

  - The current bonding amount appears to be $.9M.
Gilt Edge Mine

- In 1999, Brohm Mining Co. went bankrupt, leaving 150 million gallons of contaminated water and millions of cubic yards of waste rock.
- The initial reclamation and closure bond was set at $1.2 million in 1988.
- After acid mine drainage began to occur at the site in approximately 1993, the bond was increased to $12.9 million, with $4.1 million allocated toward basic site reclamation and $8.7 million toward mitigation of acid mine drainage.
- The present value of total costs associated with remediation of Operating Unit 1 range from $200,000 to over $100 million, with the preferred option costing approximately $88.2 million.
New Mexico FA

- Chino and Tyrone Mines, NM

- Financial Assurance History
  - Prior to 1999 $1.8M
  - 1999 $114M
  - 2003 Chino $395M Agreed upon by Phelps Dodge and NMED & MMD
  - Tyrone $330–$440M $330M proposed by PD, $440M by NMED
Chino and Tyrone Mines, NM