40-8778

May 12, 2000

TO: Mr. Leroy Person

FROM: Barry Piacenza and Chuck Neff

RE: SSAB Report; Molycorp case

The enclosure represents the presentation, paper and slides, presented on May 11,2000 regarding the Molycorp Decommissioning Plan. This information is submitted for your information and request it become part of the file.

AIMSSOI Public

Site Specific Advisory Board

Report

Molycorp Decommissioning Plan

License Number SMB- 1393

Docket Number 040-08778

An overview

- Impact area and regional economics
- Populations
- Water Shed
- The Cell
- Issues Related to the Cell
- Liabilities
- Lack of indemnity

Over View Continued

- Faulty Assumptions
- Dysfunctional Operations
- Third Party Beneficiaries
- Monitoring and Maintenance
- Case Offsite Migration

Meeting the 25 mrm per year limit

- pCi/g 1218.82 at 1 Foot Down
- pCi/g 2070.05 at 0 Feet Down
- pCi/g 1331.60 at 0 Feet Down
- Source: Molycorp Decommissioning plan June.30.1999

Exposure

5 mrm/ hr reading

April 1999

Comfirmed

Increase the mechanisms

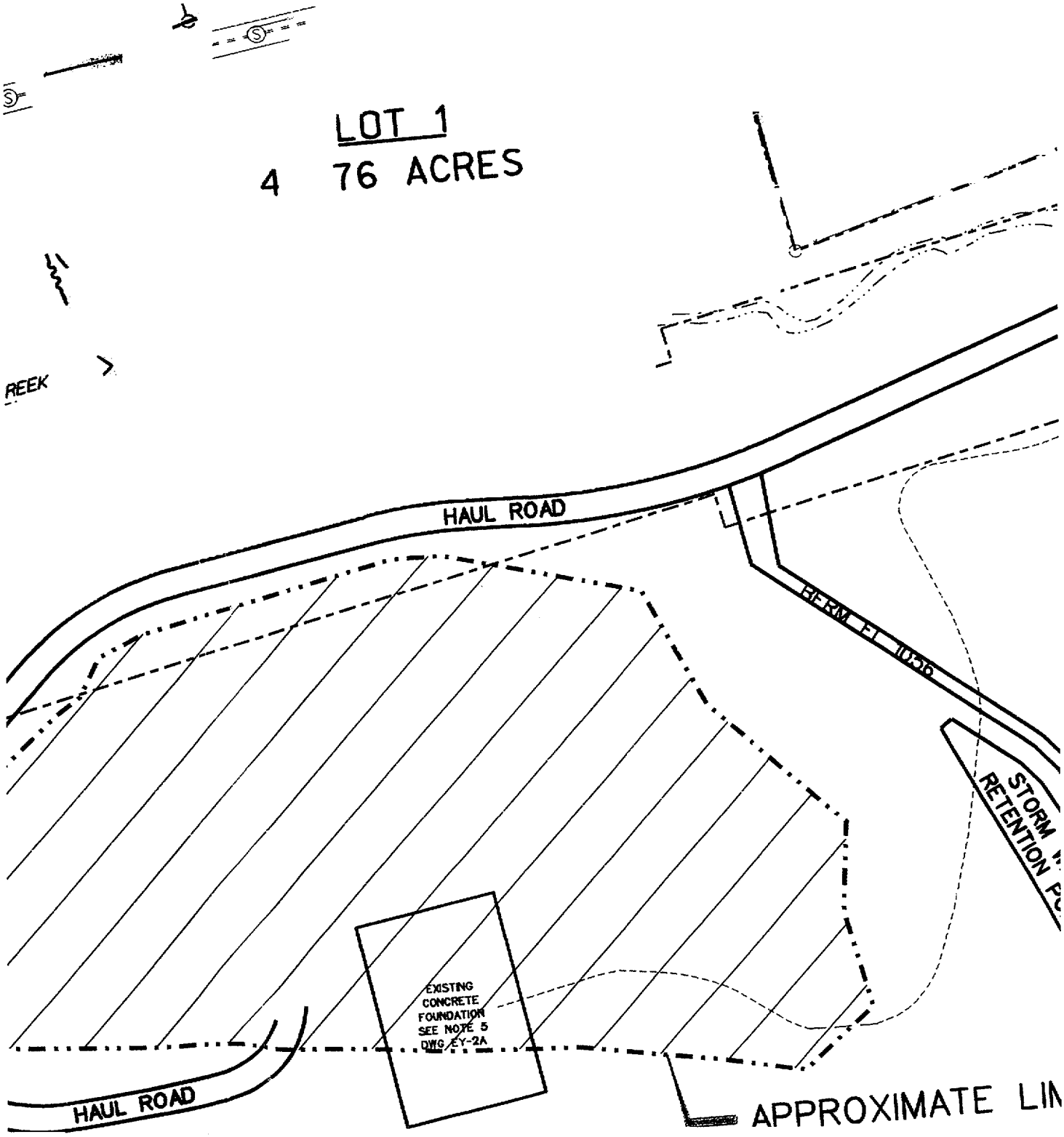
- Due to the increases in the levels of concentration and exposure
- Increase all aspects of the project relative to reducing the exposure to the community
- Increasing the Level of Financial Assurances and Institutional Controls

The Cell
120,000-125,000 Cubic Yards

The Time Frame
7 Billion Years

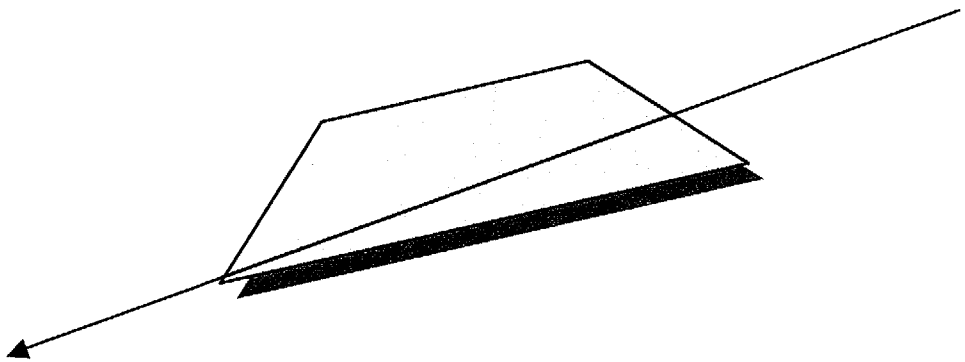
Cell Information

- Dimensions 700x300
- Slope 3 to 1 grade
- 120,000 to 125,000 cubic yards of radioactive material
- Mixed waste site
- 5 acres


LOT 1
4 76 ACRES
REEK
HAUL ROAD
BERM EL 1036
STORM
RETENTION P
EXISTING
CONCRETE
FOUNDATION
SEE NOTE 5
DWG EY-2A
HAUL ROAD
APPROXIMATE LI

SLOPE 3to1

- What would Newton Say?



All things made by man can be undone by man

Institutional controls

Financial assurances

All things can be broken

- Given the longevity of the project it is possible for the controls to break down or be corrupted
- Nothing is steady state (Molycorp assumption)
- The dark ages relative to this time line happened .0000003 of a year ago or .000000001of a day ago.
- The sun will go nova in 5 billion years 2 billion years short of the half life

The controls are precarious

- The enforcement aspects are only enforceable if a petition is made to a government authority, a judiciary.
- They are dependent on the quality of an unknown management in perpetuity
- There are no criteria for the quality of the management
- No criteria for organizational functional capacity

Enforceability is a responsibility of government

- Enforcement falls under the envelope of authority of the sovereign, I.e.government
- That means that the highest status SMC can obtain is that of a plaintiff in a case.
- Enforcement and self zoning are conceptual facades.

Cost-Benefit

- The cell and its controls are a burden to the community
- There are no direct benefits derived by Washington County Residents.
- Dis-investment is a result from a facility of this type
- Site selection criteria by quality businesses will negate the area as a prospect.

Liability does not = benefit

Injury Issue

Question: What is the Agency definition of injury?Are you and the applicant liable to cover all of the costs to everyone affected by your actions?

Injury continued

Answer: NRC regulations do not define injury, under the Atomic Energy Act, the NRC is authorized to regulate licensees in order to protect public health and safety, NRC regulations provide adequate

Injury continued

protection of the public health and safety. As a general matter, the NRC is not liable for the impacts of a licensee's actions depending on the situation the licensee may have some responsibility for the effects of its actions.

No Insurance

- “insurance has almost never been used by licensees and when insurance has been used, the submittals usually have not met the NRC's acceptance criteria".

Liability: General and Particular

Possible Law Suits; type; class action
and particular injury relative on
taking of value in real estate

Liability: General and Particular Continued

- Cell design to to possible failure
- Poor custodial care due to deficiency in SMC operations
- Failure of SMC due to Deficiencies in underlying design model.

Class Action Suit Scenario

- Recent Judgment Washington County $18million
- 100 families at 18 million each
- $1.8 Billion in judgments

Plans Missing

- Operations and Management
- Preparedness,
- Prevention
- Contingency

Third Party Beneficiaries

- NRC
- DEP
- Need for Controls
- Auditors

Beneficiaries Underwriting

- Set aside a fund equal to that for Site Maintenance Corporation
- No Guarantee that legislation will not change and budgeting for this type of facility could be cut.

Worst Case

- Total Failure
- Government is the funding party of last resort

Monitoring and Maintenance Groundwater

- No through study of geological structure
- Mining?
- Case of the evaporating liner
- Natural Springs especially on the north side

The figures

A quick primer on the local economy

Washington County Economics

Number of Manufacturing Jobs in a
2 mile radius above 3,500

Source; Molycorp Site
Characterization Report

POPULATION DISTRIBUTION

HANOVER
ROBINSON
SMITH
burgettstown
midway
mc donald
JEFFERSON
CROSS CREEK
MOUNT PLEASANT
CECIL
canonsburg
houston
PETERS
finleyville
UNION
west middletown
CHARTIERS
NORTH STRABANE
IDEPENDENCE
HOPEWELL
new eagle
monongahela
NOTTINGHAM
CANTON
SOUTH
BLAINE
washington
east washington
CARROLL
donora
NORTH FRANKLIN
STRABANE
SOMERSET
north chareroi
DONEGAL
BUFFALO
FALLOWFIELD
chareroi
speers
claysville
green hills
twilight
dunlevy
west alexander
AMWELL
ellsworth
bentleyville
cokeburg
long branch
allenport
SOUTH FRANKLIN
NORTH BETHLEHEM
WEST PIKE RUN
california
stockdale
elco
roscoe
EAST FINLEY
beallsville
coal center
WEST BETHLEHEM
MORRIS
west brownsville
WEST FINLEY
deemston
centerville
marianna
EAST BETHLEHEM

● represents 500 people

1996

Populations within a 2km to 2 mile radius

- Students approximately 7,000
- Estimated 10,300 working adults and school students would be impacted by the Cell site
- Estimated 3,500 workers not including faculty or staff at educational institutions given a $30,000 per year average salary and a modest economic multiplier of 2.5 total approximately $252.500,000.

Chartiers Water Shed

- Drains 257 Square Miles
- 18 square miles are up gradient of the site
- 239 square miles are down stream
- It is one of the largest watersheds in Southwestern Pennsylvania

County Industrial Value of Production

- Coal, Primary and Fabricated Metals, Electric Machinery
- $1.4 Billion Annually
- Agriculture
- $37.9 Million Annually
- Real Estate; Assessed Value of taxable real estate; Over $1 Billion
- Source;Molycorp Environmental Report 4/97

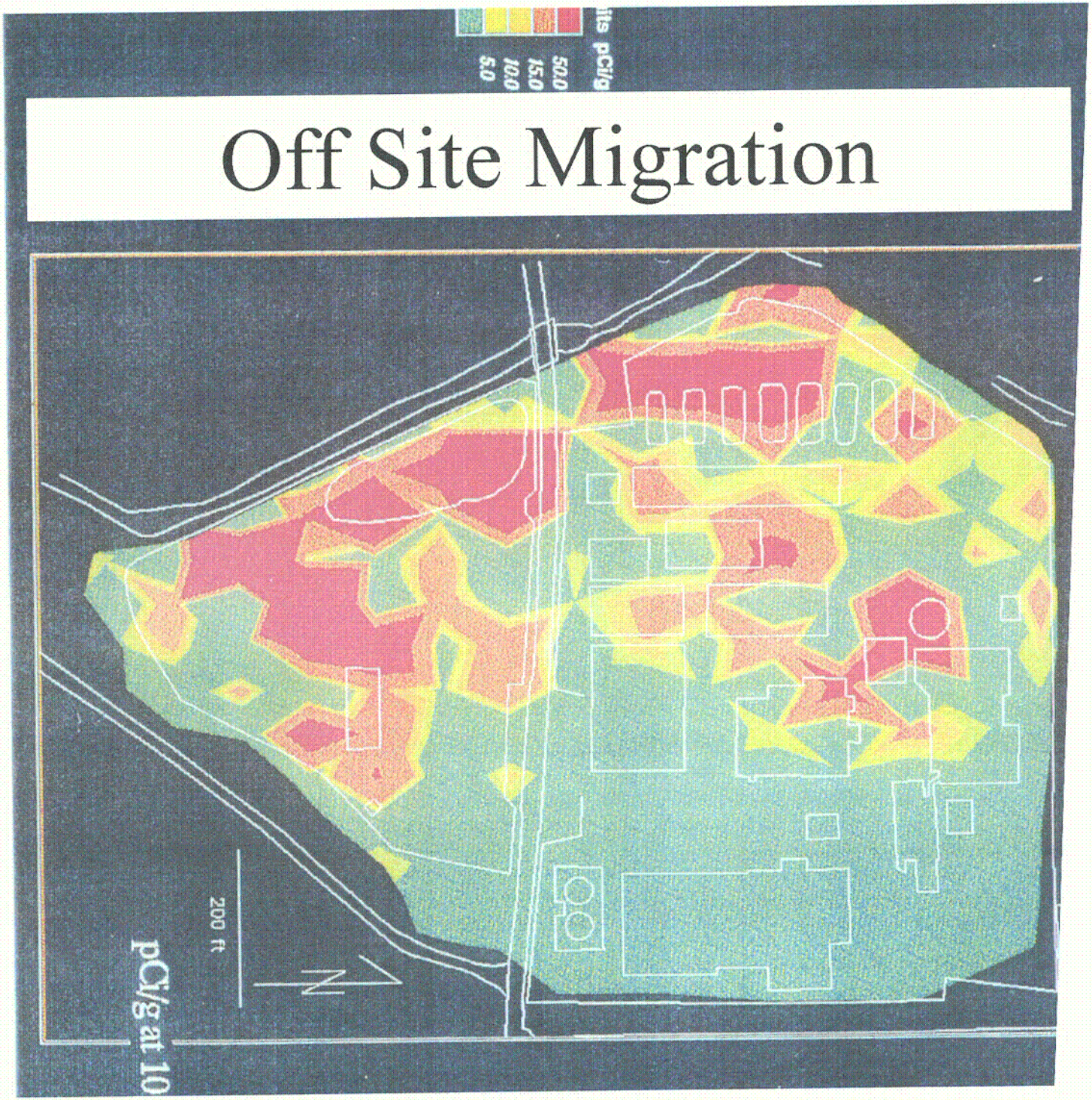
An Environmental History

Past is prologue
a historian once said.

Additional Liability

- History of Alleged Environmental Negligence
- Lahontan Regional Water Quality Control Board concerning water quality discharge permits: fines and penalties now exceed $100,000

Off Site Migration



Off site Migration from Cell

- The Nevada Case aquifer migration moving off site at underground bomb test site
- $176 million spent to evaluate the ground water problem
- Testing methods dubious
- Los Alamos scientists in 1997 concluded Plutonium 239 traveled nearly a mile from the location underground blast by attaching itself to colloids, insoluble particles suspended in water.
- It was once believed that plutonium 239 could not travel in ground water.(source 3.21.2000 New York Times)

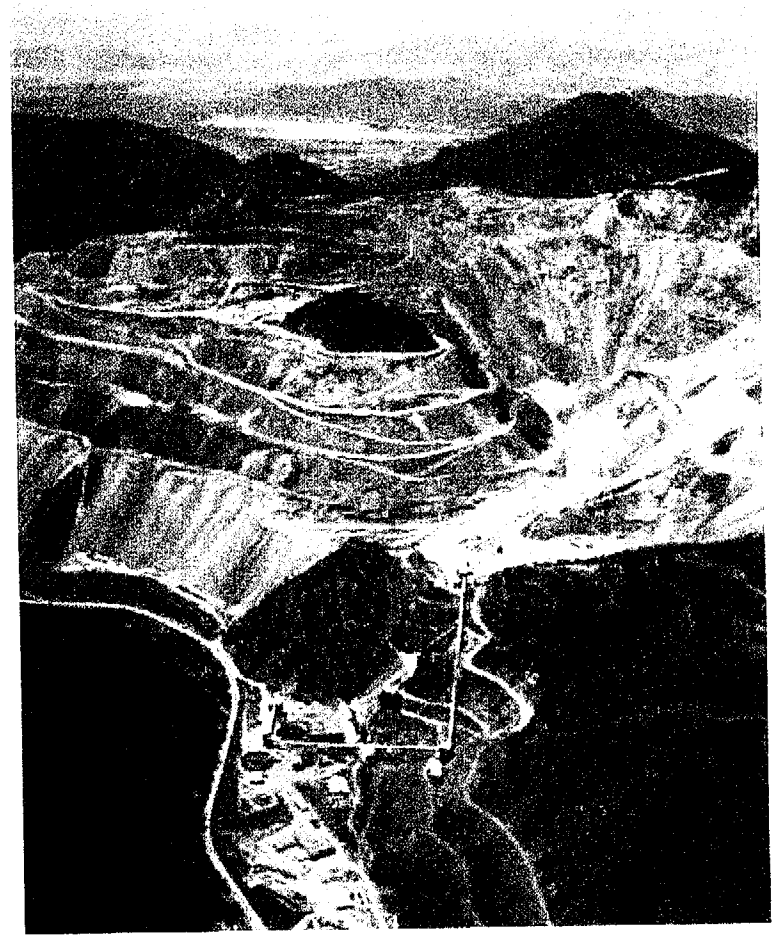
Draft Super Fund Listing, New Mexico

In order for draft Superfund listing for the Molycorp mine to become official, New Mexico Governor Gary Johnson must submit formal approval to EPA by mid-February, 2000. The governor is receiving pressure from many parties opposing Superfund approval, and it's critical that he hear from Superfund supporters as well. Please contact the governor's office by any means as soon as possible and urge him to approve Superfund listing for Molycorp immediately.

Source: Amigos Bravos Web Site

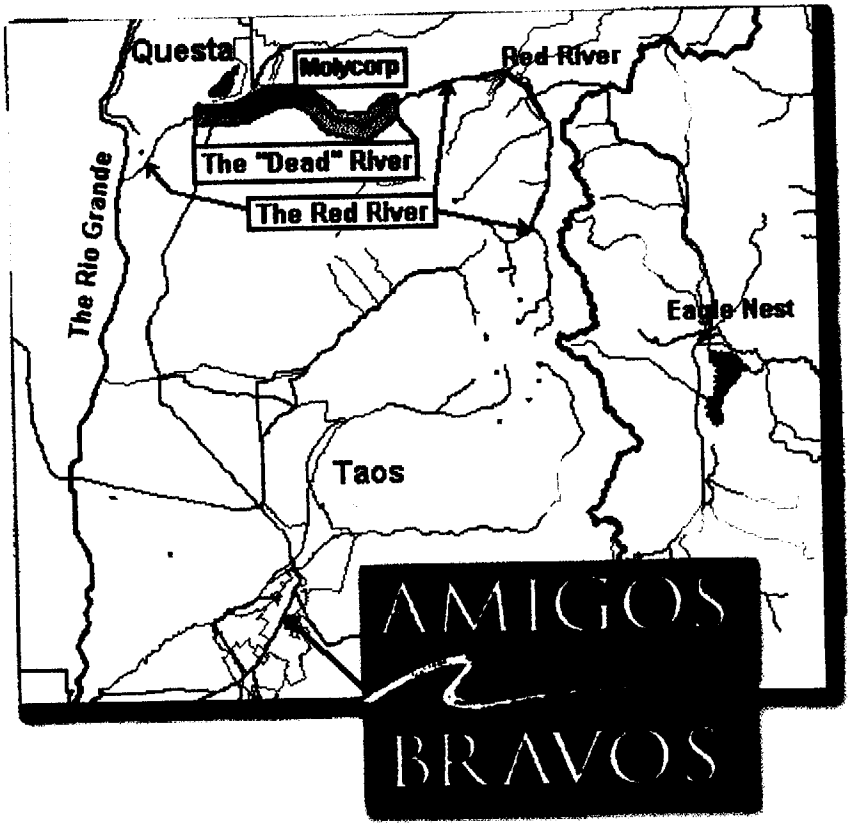
Abandoned Mine

- Action Alerts
- Oral Histories NEW
- Background
- Location
- Press Releases
- Technical Information
- Articles and Bulletins
- Unocal: Environment and Human RightsOffenses
- EPA, NM Environment



as a long-term extension of
against the Molycorp (Unocal) molybdenum mine on the Red River

A Dead River



Questa Demographics | Molycorp/The "Dead" River
Turquoise Lake - 1998 | Amigos Bravos
Molycorp Watch Page

Financial Assurances

- Prepayment Method
- Funds in Cash
- 1.1 Billion Dollars

It is not nice to litter

- **Stewardship brings with it responsibility and that responsibility is not to take from others while saving corporate costs.**

Another Point of View

THE OFF SITE MANAGEMENT ALTERNATIVE

ADVANTAGES

(1) OFF SITE DISPOSAL WOULD SATIFY CURRENTLY ACCEPTED NRC REQUIREMENTS

(2) PUBLIC CONCEN OVER THE ULTIMATE DISPOSITION OF THE THERIUM BEARING MATERIAL WOULD BE ALLEVIATED.

What is Good Public Policy?

- If Public Policy is made in light of outcomes, in this case;
- Who wins, who looses and who pays?
- The injury will be General and Particular

Report
Site Specific Advisory Board under the auspices of the Nuclear Regulatory Commission for the Molycorp Decommissioning Plan Washington, Pennsylvania

Restricted area section of the plan

License Number SMB-1393
Docket Number 040-08778
May 9, 2000

PREFACE

The Site Specific Advisory Board in this case was hampered by constantly changing applicant parameters. The applicant changed all aspects of the cell on February 24, 2000 and declined to provide information requested by the board. When provided we were told that only one copy, and in some cases two, of the amended reports would be available for review and changes continue as of this writing.

The board, as did individual members, utilized private channel resources, and worked to read thousands of pages of material to determine the real facts. The facts, once obtained independently or from the applicant, reveals: increased concentrations of radioactive material than originally provided by the applicant; a portion of the land within the cell boundary may not be owned by the applicant; material has migrated off site; and the economic impacts to the region are potentially severe.

The board also considered citizen testimony at the meetings. In this, the board heard a constant and resounding "**we do not want this in our community**". The community has many fears concerning health, economic impact, taxation and freedom of speech issues emanating from the conduct of Molycorp representatives during meetings. The community message has been constant for over one year on this issue starting with a citizens group centered in Elwood Park (testimony at an NRC public meeting on April 15, 1999). This same message has been repeated in every public meeting.

The applicant, it would appear, is reluctant to provide information to the board. At the meeting of March 23, 2000, according to a constitutional lawyer who attend the meeting, Molycorp violated the first amendment rights of citizens and elected officials. This denial of public right to comment was observed by NRC officials and a representative of the NRC Office of General Counsel.

It is a testimonial to the board members that they have worked in cooperation to produce this document attempting, as much as civilians can to stay within the regulations, draft guidelines and draft for comment NUREGS.

The most striking aspect of this paper is that people demand that radioactive waste be placed away from populated areas. The public came to the initial meetings feeling that their federal government was on their side but quickly realized that the regulations are written supporting the applicants needs without regard to the regulatory outcome. It would appear that public policy needs to be enlightened regarding its affect. In this case the cost to the community, it would appear, is already high. The regulations, if strictly administered in this case, will result in general and particular injury.

The whole application and review process needs to be rewritten and new laws

established that while not community intrusive, encourages the industry to store radioactive waste in unpopulated areas, with government underwriting of costing structures.

We found the SSAB process to be dysfunctional in both design and operation. The board shall specifically address that issue and provide an addendum to the NRC. In the meantime, let it suffice it to say that so much of this filing is based on Draft Guides for Comment is disturbing.

Financial Assurances:

One assumption is that the waste from York is to be combined with the waste present on the site. Even though they are being treated separately as legal matters, the combination is relevant considering the responses by Molycorp consultants at the SSAB meetings.

The board finds the requirements of section 30.35 defined prepayment method under 30.35 F. (1) to be the best method for securing this site's financial capability. The best selection is an escrow account, in cash. This of course would require outside auditors, one for the corporation and one for the beneficiaries. This option was considered best in light of the longevity of the cell's material contents, its half-life, information from the site characterization report showing mixtures of slag containing possible hazardous substances. For these reasons, considering the capacity for institutional and perhaps physical failure of the cell, the board believes the cash method is the most secure. In light of this circumstance the suggestion made by Canton Township that an estimated value of 10 cents per ton over a period of seven billion years is advanced. The estimated total cash equivalent is $1.1 billion or a combination of precious metals. This amount replaces the frail structure offered by the applicant.

The cash preference is related to increased concentration levels, exposure levels, ground water issues, and mixed hazardous waste within the irradiated mass. This is essentially necessary when viewed in combination with site geometry and the operation and maintenance program presented by Molycorp. Undoubtedly, there is strong possibility that the material might migrate into the test wells on the north side of the site. There is also strong possibility due to the adverse economic outcomes and legal taking, law suits will be initiated from affected property owners within an estimated 2km to 2 mile radius. Further, if the cell is compromised either due to deficient engineering or catastrophic incident, the financial liability is certainly more than that proposed by Molycorp through its Site Maintenance Corporation. There is also a regulatory history relative to Molycorp that needs to be considered. There was an initial violation of the AEC Act in 1971, and noted Pennsylvania Department of Environment Protection violations between 1970 and 1995. There are also continuing violations with an outstanding fine being negotiated with the California Attorney General's Office, and the Lahontan Regional Water Quality Control Board concerning water quality discharge permits: fines and penalties now exceed $100,000. Given the issues in New Mexico that the company now faces, with possible Superfund designation of the Molycorp molybdenum mine near Questa, NM. This mine is on the verge of listing by the Environmental Protection Agency (EPA) as a Superfund cleanup site, it would appear that the company's track record concerning decommissioning is suspect. In Canton there is the existing contention over the presence of a public water line under a significant waste pile. It also appears that for about 10 years or more an evaporation leaching pond containing thorium and perhaps uranium was directly over an existing water line and no attempt was

made to take corrective action. It has further come to the boards' attention, through the question of it members, that Molycorp may not own the old railroad right-of-way on the north section of the proposed cell area. It is also possible that the company does not own the mineral rights to the property. This increases the issue of undermining if it has not already occurred. All of these issues and others mentioned elsewhere provides an envelope of "potential for consequences". This envelope is a rolling envelope along with the 100 year court envelope. Therefore it is an envelope in perpetuity. It lends further credence to the potential consequences from a regulatory point of view concerning the imposition of an undue burden to the community or other affected parties. It is likewise anticipated that the SMC Corporation would be the subject of multiple lawsuits regarding the site during its existence. Insurance is not an acceptable modality; " ...insurance has almost never been used by licensees and when insurance has been used, the submittals usually have not met the NRC's acceptance criteria".

Economic injury both general and specific from the existence of the cell is another area of concern. In a answer to a question posed to the NRC dated January 24, 2000, the NRC indicates:

> Question: *What is the Agency definition of injury? Are you and the applicant liable to cover all of the costs to everyone affected by your actions?*
>
> Answer: *NRC regulations do not define injury. Under the Atomic Energy Act, the NRC is authorized to regulate licensees in order to protect public health and safety. NRC regulations provide adequate protection of the public health and safety. As a general matter, the NRC is not liable for the impacts of a licensee's actions. Depending on the situation, the licensee may have some responsibility for the effects of its actions.*

While it is not presently in the scope of the regulations, one of the major public testimony issues was the anticipated adverse economic impact of the cell[1]. This, combined with the aforementioned items, would appear to create an area of concern due to undue burden and hardship that should be addressed through regulation.

The reliance on the trust agreements, letters of credit and other methods may reduce this Corporation into receivership. Letters of credit are faulty, difficult to interpret and may not always be payable. It is entirely possible for default to occur or for the instrument not to be renewed. The proposed stand-by trust agreement is deficient. The trustees investment capabilities provide only a 2 .2 percent return on investment (although it is within the regulations it appears to limit the long-term fiscal capability of the corporation). In an inflation environment this could jeopardize fiscal integrity. Over 25 years ago (1975) interest rates in the United States were over 20 percent. Government policy today, in the minds

[1] To be addressed in the addendum with other subjects

of some economists, is based on the 1970s mentality concerning monetary policy decisions. (Source Wall Street Week, statement by guest 4.27.2000) The reliance on bonds, particularly those with ratings BBB / BAA, is disturbing. Any beneficiary and trust management would most likely want to have A-AAA ratings. Various aspects of the agreements are faulty in their capacity for adequate trust management. One suggestion is to have an outside board or ombudsman to act on behalf of the 3rd party beneficiaries. A hold harmless clause has been placed in the trust agreement. This could promote nefarious behavior even though it is part of the regulatory structure.

Certain aspects of the trust agreement and an agreement between SMC and Molycorp has been rewritten and it is puzzling to the SSAB as to which documents are now intended to be submitted. Since this item arrive at the board members residences on a Saturday, May 6 with no instructions as to its standing we have decided to review it like all the other documents. The caveat is that this is a quick response, we reserve the right to revisit this later in the process through other aforementioned submittals. Even though this item touches on trust management mechanisms, express powers of the trustee, includes an attorney, trustee compensation, a successor clause, and instructions to the trust the regarding amendments of the instrument. The same value level, $1,007,700 remains. The trust agreement though increasing the operations of trust management still is faulty regarding DG 3014, DG3002, regarding the prepayment methodologies management and operations.

The prevailing law of, Pennsylvania, is recognized regarding amendments, there is a feedback loop regarding inspection worked out by Molycorp relative to SMC, a provision for specific performance, a series of items under Molycorp failure to perform as well as a default obligation by Molycorp, a schedule of work, and an escrow account. This document still falls short as illustrated in other sections of the paper, such agreements in and of themselves on an operations level without meticulous care remain faulty. Even though this agreement provides for somewhat increased management ability, the capabilities still fail regarding a complete operations and management plan which is loosely attempted on the last page. The creation of the document in and of itself relies on the supposition that Molycorp will be going out of business and is, literally, a management turnover document to SMC of Molycorp responsibilities. SMC remains an LLC chartered in Delaware.

Even though these documents attempt to meet regulations of DG3002 it still falls short. If this is the established model then various other required documents from DG 3014 are missing in their entirety.

Due to the lack of long-term custodial care, especially as related to security, and refined value of thorium there is a concern about potential terrorist activity against the site. In addition, the site characteristics leads one to suspect there needs to be increases to general maintenance, security, road and bridge

maintenance, increased well maintenance and well monitoring, and more thought to cell invasion by animals which could lead to ground water contamination.

The lack of professional on sight management, corporate operations structure, independent accounting for the corporation and for the third party beneficiaries leave serious organizational survivor capability questions regarding SMC. Furthermore, UNOCAL has not seen fit to provide a Parent Company Guarantee, which is the financial instrument of choice in such cases. This is another reason for the utilization of the prepayment method. This, combined with evidence discovered by board members showing an alleged trail of financial separation of the parent UNOCAL from Molycorp as a financial entity, provide another reason for this recommendation. Members of the board also feel that the control issue over the SMC by Molycorp should be revisited. It is felt that the SMC needs to be a completely separate organization devoid of any Molycorp influence. Legal and accounting mechanisms should be put into place to defend the SMC against the quagmire that might someday surround Molycorp. The board feels that criteria should be developed that if Molycorp is unable to perform, a trigger definition be put into place as to when the SMC takes over. In essence a transition trigger needs to be established.

The maintenance and monitoring of the cell would require a trained staff of security, maintenance and scientific personnel. Given the controversial aspects of the cell it could not be imagined that the facility could be operated without staff. Management at a distance would seem a greater public threat over the long-term.

To all outward appearance, the cell design seems to be grossly insufficient. A seven billion year time-frame would require a much more substantive structure than that proposed. An example might be a structure well below ground (by thousands of feet) insulated by reinforced concrete and wrapped in a synthetic liner with the waste in separate, multi-modality, containers prepared for possible removal via an automated system to railroad cars. Another approach could be something much sturdier, by orders of magnitude, above ground which might resemble the pyramids of Egypt, this would have a chance of lasting the requisite 7 billion years. Reference the Carlsbad New Mexico site and the preparations for the Yucca Flats site in Nevada. Granted these are for high level waste yet the time considerations in this case seem to provide parity juxtaposed to a more intense, higher grade, shorter half-life materials as opposed to materials with a much longer half life.

The potential of increased exposure rates requires additional engineering work. We will assume that this would increase the overall financial assurance required for the life of the cell. Given the circumstances other methods of waste management need to be considered. These would include shipment off-site to an approved NRC facility such as Evirocare of Utah, International Uranium (USA) Corporation of Utah, or Barnwell SC or other new facility. An alternative for the

York material under the interim storage application to the NRC was listed as alternative #3 in the Draft Environmental Assessment of proposed construction and operation of Interim Storage Structure at Washington Molycorp facility for storage of Molycorp York Decommissioning waste; License Number SMB -1393, Docket Number 040-8778, Alternative #3 page, Section 4.3, page 5. This might be one place to start. At an SSAB meeting held on 3.23.2000 a Molycorp consultant stated that some of the material slated for the proposed permanent cell would be shipped off site. The Board requested comparative figures from Molycorp regarding off site shipment as an alternative. Molycorp, however, declined to provide these figures even though that conveyed a belief that the cost to ship off site was dropping. When questioned the company stated that they believed that the cost to ship was dropping.

Citations and References:

We base these considerations on a review of: NRC regulations to 20.1402 radiological criteria for restricted use; NRC regulation 20.1403 criteria for license termination under restricted conditions; NRC regulation 30.34 terms and conditions of licenses; NRC regulation 30.35 financial assurance record-keeping for decommissioning; 30.36 expiration termination of licenses and decommissioning of site to separate buildings or outdoor areas; 40.42 expiration termination of licenses and decommissioning of site separate buildings or outdoor areas; 50.82 termination of license; 70.38 expiration termination of license and decommissioning of site separate buildings or outdoor areas; 72.54 expiration termination of licenses and decommissioning of site separate buildings or outdoor areas supplemental appendix B part 30 quantities of licensed material requiring labeling, draft regulatory guide nuclear regulatory commission D. G. 4006, demonstrate compliance with the radiological criteria for license termination; and NRC letter dated January 24, 2000, SUMMARY REPORT. In addition: Details of the Institutional Controls and Financial Assurances Applied or Planned at Various Hazardous and Radioactive Material Sites in the United States, Prepared for Site Specific Advisory Board, Molycorp . Inc. Washington PA, decommissioning Project, November 28, 1999, Radiological Services, DG 3014, Draft environmental assessment of proposed construction and operation of interim storage structure at Molycorp's Washington Facility for storage of Molycorp York Decommissioning Waste, Docket Number 040-8778, Amigos Bravos, Molycorp Washington PA Facility Decommissioning Plan, Part 1 Revision June 30.1999. Charter, Site Specific Advisory Board Molycorp, Inc., DG 3002. Standard Format and Content of Financial assurance Mechanisms required for Decommissioning Under 10 CFR parts 30, 40, 70, and 72, DG 3002

Institutional and Proprietary controls

The board through its subcommittee report brings to the attention of the applicant and the NRC that the Site Characterization Report presented by the applicant allegedly shows increased concentrations - exposure capability as well as off-site

migration, and aquifer issues. We find all aspects of the plan could be drastically increased by orders of magnitude. The slag, as illustrated in the site characterization report, has the potential to be mixed with other hazardous wastes already on site or, in fact, are mixed presently. The same report shows in the northwest segment of the main plant site radioactive material is already co-existing with selenium and cadmium. The board therefore feels all aspects of institutional controls and financial assurances need increased by orders magnitude.

The operation of the institutional controls are dependent solely upon the capacity of the organization, they are creatures of legality and of operating systems. The underlying assumptions are that the systems will be in place or remain in a steady-state capability. Since change is one of the main forces of history (especially over a 7 billion year half life) we can only assume the governmental institutions, organizations and other systems may be caught in this constant change.

Given the insufficiency of institutional and propriety controls, the board finds it is difficult to prevent unauthorized access to the cell without some form of permanent security on-site, twenty-four hours a day, year round. This type of security should include adequate security lighting encompassing both restricted and unrestricted areas.

It is possible, given the Securities and Exchange Commission 10k report submitted as evidence, that Molycorp may not be a long-lived system. As stated, there is no parent company guarantee. The parent company would seem to be separating itself financially from Molycorp. Therefore the emphasis on long-term responsibility must be upon the SMC. Given the fact that the NRC and DEP will be third party beneficiaries of the SMC under any agreement, we believe that the financial assurance (the prepayment option) would protect the third party agreement against liabilities regarding the cell' s existence. If the SMC fails the NRC does not have financial responsibility. If failure occurs the site will become an EPA Superfund site. In light of this issue the board requests the financial assurance as stated above utilizing the cash option be implemented so the SMC operates in a strong fiscally managed environment.

The proposed criteria of controls for the Site Maintenance Corp. leave the board with the conclusion that enforceability aspects of land use restrictions and sufficient public notice to prevent unintended disturbance of the storage cell fall short. In order to provide a scenario where institutional and financial controls could be compromised we illustrate the following scenario:

Dateline 2094
Canton Township

Today Elmur Fudd II, supervisor, with his children Proton and Gamma accept the SMC site as parkland. This due to the petition by friends of nuclear science (some of whom are SMC board members) who petitioned that the land was to be deemed safe.

SMC sold to Kentucky Associated an off shore corporation located on the Island of Trougas.

2 years later; Elmur Fudd II of Trougas (no extradition treaty with U.S.), formerly of Canton Township ,Pa, today was awarded the Trougas cup for his polo team's win, his children, Proton and Gamma, are members of the team.

3 years later; Government reports massive clean up of former waste site seen to cost $1.8 billion. Known as the site from which the deadly Canton Andromeda Strain started, the site has been quarantined and a 3 mile perimeter established.

Although somewhat dramatic in its prose, the above metaphoric example relates one method under which the proposed institutional controls and financial assurances could be broken. The use of failure engineering is practical in protecting the capability of a modality. This simple example is provided as a means for illustrating the capability to breaking the institutional controls. Given the lack of oversight it is possible that a site could be deemed safe and the material wealth of the SMC placed into an non-accessible offshore corporation. Many countries and newly formed nation states do not have an extradition treaty with the United States. Seeking criminal accountability against an individual or individuals would be extremely difficult.

One of the important sociological aspects related to exposure is that persons in the area live in their houses for long periods, 20-30 years. This does not fit the assumptive modeling that people will live in a home for 5-7 years and move. Thereby reducing the exposure level during a life span, those assumptions do not apply in this case. In Western Pennsylvania people have a tendency to own one home for much of their life span. It is not unusual to have the same home owned for 40 years by the same person. In light of this issue, the exposure modeling may need to be revisited.

The use of covenants, conditions and restrictions is a management issue. Under the proposed structure a set of CC&R's can be broken. The other concept associated with this type of legal instrument is that that it is only as good as its ability to be managed. The word "enforcement" is used in this respect, as has

the phrase "self-zoning". We believe that this is erroneous, enforcement and self-zoning implies police powers and that is the sovereign capability of the government. Municipal, state and federal governments are capable of enforcement. Most CC&R's are set up to protect the asset value of a common system and do not attract special treatment unless for some reason the asset to be protected is declared a dangerous instrument.

We would all like to believe that order rules over disorder in the universe. That is unfortunately not always true. The life span of this cell is measured in the life of a star. As a matter of fact our sun is due to go nova in 5 billion years, 2 billion years before the material reaches its half life.

One of the critical aspects of the SSAB process is to examine stewardship and quality of life issues. As subjective as these may sound they in many ways create the fabric of a community. It is apparent the impact of such a facility as the one under discussion here is a detriment to the quality of life in the Greater Washington region. Quite simply, just as one would not expect a citizen to place a potential hazard next to his neighbors the same is true here. A mature and responsible decision and regulatory process does not place material of this variety, for the proposed period, in populated areas. Stewardship brings with it responsibility **and that responsibility is not to take from others while saving corporate costs.**

NRC and DEP roles

With regard to The Department of Environmental Resources (DEP) having control over the facility, the SSAB has the following comments and concerns.

During the March 23, 2000 meeting the committee had specific conversations with Mr. Woods who was attending the meeting on the behalf of the DEP. During that conversation Mr. Woods indicated that the DEP would be the responsible authority for monitoring the sight after the NRC portions of the cleanup where completed. He stated that the DEP in part was created to perform oversight of such facilities and the budget process ensures that it will have the staff to do it. The DEP, therefore, would not be interested in maintaining the facility, as it would be a conflict of interest.

Mr. Woods also stated that if the proposed Site Maintenance Corporation became defunct for some reason that the DEP would have the authority to assign another company to care for the site and ensure the duties are performed. Mr. Woods said the DEP would require there be funds in place so that the taxpayers would not have to pay for the maintenance of the site. However, the DEP would ultimately drive a remediation if all parties failed and actions were required, i.e. it would become a Superfund site.

With these comments in mind it seems reasonable to request that Molycorp enter a consent order with the DEP which would outline the duties of the Site Maintenance Corporation and the DEP. The order should be specific about the DEP duties to monitor the sight, what perimeters would be monitored and what the acceptance criteria would be. It should also cover the specific duties of the Site Maintenance Corporation. This would be considered an Operation and Maintenance plan. The plan should describe the frequency of maintenance, specific items, which will be maintained, and contingencies. For example, industrial sites are required to have *a Preparedness Prevention and Contingency Plan.* These plans outline likely modes of failure, contact persons and the likely steps, which would be used to mitigate a failure.

In order to insure that the necessary duties would be performed, a separate trust fund should be set up with the DEP as the authorized administrator. The fund would be used to cover the cost of maintaining the sight should the Site Maintenance Corporation fail. **The monies set aside should equal those being proposed for the Site Maintenance Corporation. This item is important, as there are no guaranties that legislation will not change and budgeting for this type of facility could be cut.**

Items the board suggested.

1. There is no guarantee the legislature and the executive at the commonwealth level would adequately fund a line item in the budget funding the DEP role.

2. Several of the board members also remember Mr. Woods stating that if the cell did fail or if some catastrophic event occurred and the financial assurances are inadequate the government is the financial party in essence of last resort. i.e. health safety and welfare issues

3. The board discussed the need for an operations and management plan within paragraph #4

4. The board discussed the discussion of a reference to there being no insurance, since insurance; " ...insurance has almost never been used by licensees and when insurance has been used, the submittals usually have not met NRC's acceptance criteria".

5. The board applauded the last paragraph

Institutional Controls

Physical Controls

Storage Cell

Without consultation with an independent third party qualified to evaluate the efficacy of the storage cell to prevent radioactive emissions, the board cannot provide advice on whether the storage cell will comply with regs. 1 and 3.

Fence, Markers, and Signs

A fence maker and signs will place an undue financial and psychological burden on the community because they signal a potential danger from radioactivity. The perception of danger may cause property values to decrease, and result in extreme psychological stress for residents concerned with financial loss or health problems.

Cap

The cap is part of the storage cell. Please see comments above under storage cell.

Ground Water Monitoring:

Molycorp has proposed annual monitoring of 6 wells in order to guarantee detection of Radioactive Thorium and other heavy metals if the ground water carries these materials through the aquifer and out of the site area. This proposal is not adequate for the following reasons.

1. There has not been a thorough study of the geological structure under the proposed cell

   Molycorp does not know if this area was coal mined, if there are old oil or gas wells on site, if the proposed sandstone base of the cell is cracked or if it is even large enough or strong enough to support the weight of 90lbs/sqft. of the thorium slag in a cell with a grade of 3 to 1.

2. The most recent design model does not even have a clay or plastic liner to help support the cell from natural water flow which could increase considerably in the case of a catastrophic event such as flood, tornado, hurricane, earth quake or even burrowing animals or erosion.

3. The cell base is expected to be approximately 20 to 30 feet below the present ground level. This hill has many natural springs and water flow

from outside the cell area, could in time drain through the cell and down through the natural aquifer system and carry radioactive particles off site and into the local water system. This relates to the liability issues as stated in the Financial Assurance section.

4. Please refer to the attached article from The New York Times of March 21, 2000. This article discusses ground water movement through the aquifer at the Nevada Nuclear Test Site. It acknowledges the possibility of radioactive particles becoming attached by colloids, which allows to particles to become buoyant and then floats with the water through the aquifer to possibly pollute ground water off site.

Because of the above, and in compliance with DG_4006 section 3.1.6_a much more stringent testing protocol must be used.

Direct Radiation Thermoluminescnt Dosimeters

Molycorp has proposed quarterly replacement and readout of radiation testing devices and TLD enclosure replacement every 5 years.

The SSAB Board finds this to be outside of their expertise, however, there are some unanswered questions as to the 25 mrem per year limit. The question that is most important to us is, when the 125,000 cu yd of thorium slag is compressed into the cell along with other metals present such as Cadmium, Selenium, Manganese and Magnesium, does the radioactivity increase the overall energy or radiation of the mass? If the NRC cannot answer this question, then the radiation levels at this site should be monitored on a daily basis, not quarterly.

Surveillance/Inspection

Molycorp has proposed only periodic inspections. The SSAB believes that more attention should be given to security to the site. The security should be no less than 24 hrs. a day/7 days a week of on-site guards, with adequate lighting, warning signs and state of the art remote sensing capabilities. The reasons are as follows:

1. Cell or site inspection for damage due to vandalism, burrowing animals, erosion, etc.

2. Due to reactor design developments, radioactive thorium could be used in a terrorist action.

3. Thorium is a high-energy source and in the future could become extremely valuable.

Damage to this site could occur due to terrorist action or others who wish to sell this thorium. The present estimate of refined thorium is approximately $150. Per ounce and is expected to increase.

4. This site could be listed in The Registered Thorium National Stockpile and would need to be under secure guard.

Maintenance of Physical Controls & Monitoring

The following are the SSAB's remarks regarding the maintenance summary of costs as reported in Exhibit D page #1 of the "Proposed Institutional Controls Draft" of March 23, 2000.

1. Molycorp should add instrument calibration to their schedule, similar to the ISO Standards.

2. All regular maintenance inspections should be **done no less than weekly**.

3. Two bridges were omitted from the Molycorp report, they will need routine and replacement maintenance schedules.

4. Management fee will have to be increased to support the above increases.

The above increases are needed due to the following:

1. The heavy weight mass of the Thorium slag on a 3 to 1 slope of the north side of the site will cause slippage, thus exposing the atmosphere to the radiation, or contaminating the test wells.

2. Similar results could occur due to fresh water springs or mine subsidence.

Thorium is odorless and tasteless, so you cannot tell if you are being exposed to radiation. Very little is known about the specific exposure levels of Thorium radiation that results in harmful effects to people or animals. For this reason, and since this site is planned for a very densely populated area, everything must be done to protect the citizens. Preventative maintenance inspection and planning is a necessity. Due to the 7 billion year time line complete replacement of all maintained operations is a given. Given the density of the surrounding population, the maintenance needs due to climatic and ecological impacts it is requested the any reexamination of TEDE above the 25mrm level be denied. Given the precariousness of this environment any reexamination should see the TEDE reduced to 10 mrm.

The signage repair and maintenance is an important issue since reports have seen young people breaking in other facilities and causing damage.

Signature Page

Jim Brison — 5/10/00 Date

Mike Bench — 5/10/00 Date

Elmer Gregor — May 10 - 2000 Date

Jeff Leithauser — 5/11/2000 Date

Chuck Neff — 5/10/2000 Date

Barry Piacenza — 5.10.2000 Date

Mark Remcheck — 5/10/00 Date

Concerns Arise Over Aquifer Near Nuclear Test Site

By MARTIN FORSTENZER

When the federal government conducted 828 underground nuclear tests at the Nevada Test Site from 1956 to 1992, its scientists knew that ground water beneath the site would become contaminated. They believed that the underground water barely moved, and that radioactive particles would be sealed into cavities by the blasts or else absorbed by underground rock.

But studies in recent years have found that radioactive particles like long-lived plutonium 239 can travel with water, and that water is flowing more rapidly beneath the site than was once believed. Scientists now agree that contaminated plumes have the potential to flow beyond the borders of the 1,573 square-mile test site in south-central Nevada, toward populated areas.

The trouble is that no one knows how big the plumes are, where they have already traveled or what exactly they contain. Scientists from the United States Geological Survey and the University of Nevada say that a witch's brew of radionuclides could take as little as a decade to reach well water in Beatty, a town of 1,500 people in the Oasis Valley about 25 miles from the heavily contaminated northwest corner of the test site.

So many bomb tests, so little data on the mess they left.

"Could it show up there in the next 10 years?" Randell Laczniak, a Geological Survey hydrologist and a co-author of a 1996 report on ground water at the test site, said in an interview. "There's that possibility. Will it show up at a dangerous level? I don't know."

Spokesmen for the Department of Energy, which administers the test site, were more conservative.

Bob Bangerter, manager of the Energy Department's program handling the ground water issue, said that because some underground tests occurred near the test site's western boundary at the heavily contaminated Pahute Mesa area and the water was moving toward the southwest, "there is a high potential that it will move off of the test site toward the Oasis Valley." But he would not estimate when this might happen.

Another Energy Department official, agement, said there was no evidence that the contamination had yet left the site and that it would not be likely to reach a populated area even 100 years from now.

The department has spent $176 million to evaluate the ground water problem at the test site, but some experts say the agency has gone about it the wrong way. An early draft of a ground water model that tried to determine how far contaminants could travel at one section of the test site was heavily criticized last September by a review panel of ground water experts who said that the model lacked enough data to make it meaningful.

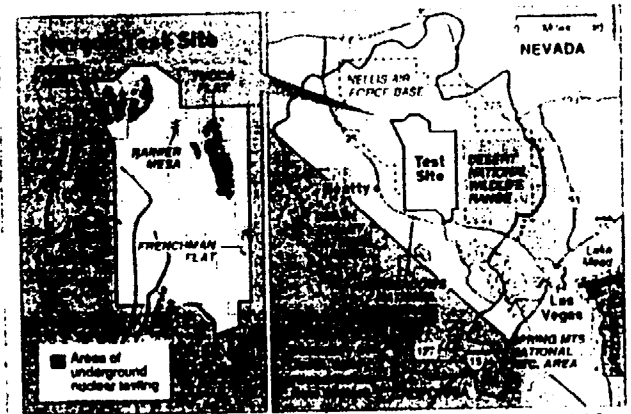
"It was severely data limited," said Dr. Lynn W. Gelhar, a ground water expert and professor of civil and environmental engineering at the Massachusetts Institute of Technology, who led the six-member peer review panel.

Another panel member, Dr. Dennis Weber, a physicist and ground water researcher at the University of Nevada at Las Vegas, said the agency relied on one of its own previous ground water models in place of gathering real data about the problem. "They tried to do this without taking data," Dr. Weber said. "Your models are only as good as your data."

The model, which the agency is now revising, predicted that ground water at the Frenchman Flat area of the site could travel only about three-fifths of a mile in 1,000 years, but the panel said that it did not take into account the "plausible" possibility that the water could drop into a lower aquifer, where it could travel much more rapidly.

"The testing was not actually done down in the primary aquifer, which is a limestone-type aquifer, but in a zone above that," Dr. Gelhar said. "The question is to what extent there is connection between the upper zone and this deeper, very permeable aquifer."

The Energy Department has already drilled dozens of monitoring wells both on and outside the test site and is installing eight wells northeast of Beatty. But agency critics say they are of limited value because they are not designed to find and define the contaminant plumes.



Source: U.S. Geological Survey, Department of Energy — The New York Times

"They should design monitoring systems to intercept the contaminants from some of the critical larger detonations so that they learn more about the plumes, where they are going and how fast they are going," Dr. Weber said.

Mr. Gertz of the Energy Department, though, said new wells were not necessarily cost effective.

"Do you put a well every five miles?" Mr. Gertz asked. "Every six miles?" We have a site bigger than the state of Rhode Island. To go down to 6,000 feet, where we think you have to go in the northern part of our site, they're about $2 million a well. What is the appropriate cost to taxpayers?"

Some scientists emphasize that even if ground water was to travel off the site, it does not mean that the radioactive contaminants would necessarily travel with it. It was once believed that plutonium 239 could not travel in ground water, but in 1997, scientists from the Los Alamos National Laboratory concluded that plutonium 239 had traveled nearly a mile from the location of an underground blast by attaching itself to colloids, insoluble particles suspended in water.

It is still not known whether the element, which has a half-life of 24,100 years, can move in ground water over distances of several miles in concentrations that would be harmful. But the finding increased concern among scientists about the potential health threat from the ground water.

The one radionuclide at the site that is known to travel freely with water is tritium, a hydrogen isotope that becomes part of water molecules. Although it decays in only 12.3 years, tritium can remain dangerous to humans for hundreds of years when found in the kinds of large concentrations that the test site holds, Dr. Weber said. Other elements that contaminate the site include neptunium and americium, but little is known about their ability to travel in ground water.

Because Death Valley National Park is the end point of ground water flow for the region, scientists said that water from the test site would probably reach there eventually and could threaten the park, although most believe that it would take longer than a hundred years.

For residents near the test site, the focus on contaminated ground water has compounded fears about the Yucca Mountain nuclear waste repository, which the federal government plans to build near the western border of the Nevada Test Site not far from Beatty and other populated areas.

By making the idea of contaminated ground water less abstract, it has sharpened public worries about what might happen if radioactive material leaked from the site, which would hold tons of high-level radioactive waste from around the country.

There is no feasible way to clean the ground water of contaminants or divert it from flowing toward a particular place. But to prepare for the possibility that contaminants might someday reach a populated area, the Energy Department has studied a variety of costly, experimental plans, including trying to mine out contaminants at the test site, which would cost trillions of dollars and present serious health risks to workers, diverting the ground water back onto the test site, and piping or trucking water to affected communities.

In Beatty, the issue has been a leading topic of discussion. "I'm concerned for a lot of reasons," said LaRene Younghans, who owns a ranch just north of Beatty. "We wanted to stay here until we died, and we'll probably have to move."

Such worries spiked in late February when Nye County officials reported that a very high level of radiation was found in one monitoring well south of the Oasis Valley. The report prompted calls to the Energy Department from county residents and spurred emergency meetings of town and county officials, but it turned out to be a false alarm: the initial well analysis was faulty.

Some scientists who have studied the issue believe that the Energy Department has never really tried to learn much about the contaminated ground water in order to keep public pressure off the agency.

"They haven't drilled wells with the intention of finding the plumes," Dr. Weber said. "They didn't want to know."

A spokeswoman for the department, Nancy Harkess, responded: "We are looking and we do want to find it if it's moving. Our No. 1 priority is to protect the public."

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