

**MINUTES OF THE
SENATE COMMITTEE ON NATURAL RESOURCES**

**Seventy-fourth Session
February 12, 2007**

The Senate Committee on Natural Resources was called to order by Chair Dean A. Rhoads at 3:35 p.m. on Monday, February 12, 2007, in Room 2144 of the Legislative Building, Carson City, Nevada. [Exhibit A](#) is the Agenda. [Exhibit B](#) is the Attendance Roster. All exhibits are available and on file in the Research Library of the Legislative Counsel Bureau.

COMMITTEE MEMBERS PRESENT:

Senator Dean A. Rhoads, Chair
Senator Mike McGinness, Vice Chair
Senator Mark E. Amodei
Senator Joseph J. Heck
Senator Bob Coffin
Senator Michael A. Schneider
Senator Maggie Carlton

STAFF MEMBERS PRESENT:

Susan Scholley, Committee Policy Analyst
Randy Stephenson, Committee Counsel
Ardyss Johns, Committee Secretary

OTHERS PRESENT:

Leo Drozdoff, P.E., Administrator, Division of Environmental Protection, State Department of Conservation and Natural Resources
Colleen Cripps, Ph.D., Deputy Administrator, Air and Waste Programs, Division of Environmental Protection, State Department of Conservation and Natural Resources
Alan R. Coyner, Administrator, Division of Minerals, Commission on Mineral Resources
Russell Fields, Nevada Mining Association

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CHAIR RHOADS:

We have a bill draft request (BDR) that came out of the Tahoe Regional Planning Agency (TRPA) interim study committee chaired by Senator Amodei. It is BDR R-251.

BILL DRAFT REQUEST R-251: Expresses support for the Tahoe Science Consortium. (Later introduced as [Senate Concurrent Resolution 3](#).)

SENATOR CARLTON MOVED TO INTRODUCE BDR R-251.

SENATOR AMODEI SECONDED THE MOTION.

THE MOTION CARRIED. (SENATORS COFFIN AND SCHNEIDER WERE ABSENT FOR THE VOTE.)

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CHAIR RHOADS:

We have presentations this afternoon from the State Department of Conservation and Natural Resources and the Commission on Mineral Resources.

LEO DROZDOFF, P.E. (Administrator, Division of Environmental Protection, State Department of Conservation and Natural Resources):

I have provided the Committee with a copy of the PowerPoint presentation I will be showing today ([Exhibit C](#)). Our agency mission is to preserve and enhance the environment of the State of Nevada in order to protect health, sustain healthy ecosystems and contribute to a vibrant economy. We take our mission, in large measure, from *Nevada Revised Statute* (NRS) 445A.305, subsection 2, paragraph (a) where the legislative policy is described. We have traditional regulatory tools that set standards, and based on those standards, we issue permits, conduct inspections and when necessary, take enforcement action. We have assistance programs that include contracts, grants and loans as well as technical and compliance assistance.

Within the agency, we have provided grants or loans through our State Revolving Loan Funds of approximately \$500 million. We have many technical and compliance assistance programs where we work with the regulative community. Our organizational structure is such that our deputies have in-line program responsibilities. Currently, we have 244 full-time employees, and this

Session, we are asking for 7 positions that would not come from the General Fund. We have 9 executive budgets and 13 nonexecutive. The State Environmental Commission (SEC) is our main oversight body. It is an 11-member panel comprised of both Governor appointees and various State employees. Regulations are adopted through the SEC. The Commission holds contested case hearings, and in certain cases, it ratifies administrative penalties. Our Board to Review Petroleum Claims is largely responsible for overseeing cleanups at contaminated gas stations. Our Board for Financing Water Projects decides how to grant monies to small rural water systems throughout the State. For the Bureau of Mining Regulation and Reclamation (BMRR), this is a State stand-alone program and not delegated from the federal government, like many of our programs, such as the Clean Air and Clean Water Acts. This is a fee-funded program that got its start through the Nevada Legislature in 1989. The Legislature took a look at the mining boom in the mid-1980s and discovered there was no federal model to follow, so Nevada would have to develop something on its own. Out of that, the 1989 BMRR law was passed. It was designed specifically to meet Nevada's needs, and as the years have passed, this very successful program has been used as a model in other states and other countries.

Currently, we are permitting approximately 320 active mining facilities of varying size. We hold, either by ourselves or jointly with federal land managers, over \$800 million in sureties. This is key in that these are bonds or other financial instruments that are posted before work is initiated and are held by the government agencies until reclamation work is done. By reclamation, I mean regulation of closure and reclamation activities to reach a productive post-mining land use such as reshaping, re-sloping and chemical stabilization.

At this point, I will turn the program over to our deputy in charge of the air programs who will talk about our Nevada Mercury Control Program.

COLLEEN CRIPPS, PH.D. (Deputy Administrator, Air and Waste Programs, Division of Environmental Protection, State Department of Conservation and Natural Resources):

Similar to Nevada mining law, this program is State specific. There is no federal mandate to regulate mercury emissions from the mining industry and no federal standards that apply to this industry. This program is also fee-funded. It specifically is designed to meet Nevada's needs, and over the next few years, we are assuming this will become a model to be used nationwide.

The chemistry of mercury is complex and not very well understood. Basically, the goal of this program was to address mercury emissions and minimize them, rather than trying to figure out the chemistry. Much of the mercury being emitted goes into what is known as the global mercury pool. It migrates around the globe and can be deposited anywhere. The Environmental Protection Agency (EPA) estimates about one-third of the emissions deposited in the United States are from existing industrial sources in this country. All the rest goes into the global mercury pool.

The primary pathway of human exposure to mercury is through the ingestion of contaminated fish. Mercury is released from a number of types of industry, worldwide. It can then be redeposited either as dry deposition, or through rain or snow events, as wet deposition. It then migrates into bodies of water around the globe where it is transformed into methylmercury, which can bioaccumulate in fish.

To put mercury emissions into a global context, in 1997, the EPA estimated over 6,000 tons of mercury were released into the global pool, from all sources, with a third coming from natural emissions. One-third comes from anthropogenic emissions and another third is reemitted, man-made emissions. Also in 1997, the EPA estimated 175 tons were emitted from United States industrial sources such as power plants and mining. In 2002, while the global emissions continued to rise, there was a decrease in United States industrial emission to about 123 tons.

MS. CRIPPS:

In 2000, when the Toxic Release Inventory (TRI) numbers were first released, there were about 10.5 tons of mercury emissions annually from the mining industry in the State of Nevada. The current estimate from the mining industry is approximately two tons annually, so there are significant reductions from that industry. Why is mercury associated with the mining industry? First, it is naturally occurring and can be geologically concentrated. It is concentrated in volcanic and some sedimentary rock. In Nevada, there is a large area in the northern portion of the State which is known as the mercury belt. This is an area of geologically concentrated mercury. Mercury is often collocated with gold deposits and particularly in disseminated gold deposits where there are very low concentrations of gold, the mercury concentrations are even lower. However, during the mining process when leaching and concentration occur, mercury behaves a lot like the gold. Then the industry uses various thermal processes.

The ore is heated in order to drive off the mercury to recover the gold. These thermal processes are relatively new, so we are not talking about historic legacy mining.

When the TRI started requiring the mining industry to report their mercury emissions in 1998, we quickly recognized the mining industry was a major source of mercury. By 2000, which was when the first TRI report actually became available, we had worked with the mining industry and the EPA to develop a voluntary mercury-reduction program. That program was in place from 2000 until 2005. There were four companies and five facilities involved in that program. Those companies represented about 90 percent of the reported mercury emissions in the TRI. This award-winning program was highly successful. It resulted in significant reductions over a very short period of time. Within just a couple years, there was over 75-percent reduction in the amount of mercury being emitted from these facilities. In addition, it resulted in the development of a number of mercury-controlling technologies for the mining industry. In approximately 2005, we decided we needed to expand this program. Instead of having a voluntary program, we developed the Nevada Mercury Control Program. It is a regulatory and permitting program. Changes were made to expand the coverage to all precious-metal mining operations. There are 46 precious-metal mining operations subject to this program and over 20 of those have thermal units with the potential to emit mercury.

MS. CRIPPS:

This program also establishes specific monitoring, testing, operation and maintenance, record keeping and reporting requirements that will be established in an enforceable permit. Finally, it requires the installation of the best controls available for mercury reduction. These are also referred to as Maximum Achievable Control Technology (MACT). This regulatory program was adopted March 8, 2006, without a federal mandate. It contains aggressive timelines for issuing these enforceable permits and for the installations of the MACT for mercury.

We are deep in the throes of this program. We have currently received applications from all of the companies having existing thermal processes with the potential to emit mercury. As soon as their applications are submitted, they will become applicable and enforceable. The applications for MACT will be due in February 2008. In addition, we are reviewing test data designed to determine the kind of mercury being emitted. As I mentioned, the mercury can go into the

global mercury, or can be deposited more locally or regionally. Whether it is one or the other depends on the kind of mercury being emitted. If it is elemental mercury, it goes into the global pool and continues to cycle. Alternatively, it could be either reactive gaseous mercury or particulate mercury. Those two forms seem to be deposited more globally or regionally. Given the interest we have had from the states of Idaho and Utah on whether or not emissions from the mining industry are impacting fisheries in those states, it was important to determine the type of mercury being emitted. Those tests are being conducted by the smaller sources. The large sources have conducted all of the testing to date, which we are currently evaluating. We are also in the process of drafting the permits for those companies having existing units. Finally, we are conducting inspections of all of the facilities that are going to be part of this program. We began by inspecting those with the greatest potential to emit mercury and are working our way down to the smaller facilities.

MR. DROZDOFF:

Everyone familiar with this issue recognizes that mercury is being emitted through these thermal units by the mining industry. We worked closely over the last two years with the mining industry, environmental groups, other states and the federal government to put in place a strong program. It is designed to ensure the best controls will be applied for maximum emissions reduction and will be underscored through enforceable permits.

As Ms. Cripps stated, over 6,000 tons of mercury was emitted globally in 1997. Locally, we are down from 10.5 tons to 2 tons annually. We will get that number even lower, but you will still see issues across the State and across the West because of the global emission of mercury. We will continue to work with the federal government and neighboring states to make sure we understand these impacts and conduct necessary research in the years to come.

We also put in place mercury storage regulations for the mercury plant in Hawthorne. We have undertaken a great deal of work with regard to fish and water sampling. We spend a lot of our time on education outreach. We go to schools, work with tribal governments, etc.

CHAIR RHOADS

What do you do with the mercury when it has been extracted? Is it shipped to Hawthorne?

MR. DROZDOFF:

No. A lot of mercury is coproduced and stored in flasks at the site. It is then sold as a commodity.

CHAIR RHOADS:

Is there a market for it?

MR. DROZDOFF:

Yes, there is a market for it. We track what comes out of the air-pollution units, what is stored as a product and what is shipped off. The mercury coming to Hawthorne is called a strategic reserve, which is high-grade mercury. It will be stored at one site in Hawthorne. When a number of countries paid some of their World War II debts in trade, a lot of them did so in mercury.

CHAIR RHOADS:

How long has the mercury program been in place?

MR. DROZDOFF:

The voluntary program was put in place in 2000 and ran until 2005. The mercury-control program was just passed in March 2006, and adopted by the Legislative Commission a couple months later. It is still in its infancy and is the first of its kind. It is a solid program, but needs a little time to work.

CHAIR RHOADS:

How did you go from 10.5 tons to 2 tons?

MR. DROZDOFF:

A number of mercury-control devices were developed using new technology. That, coupled with the existing technology, allowed the mining companies to place this new technology on these thermal units.

SENATOR HECK:

If they were able to go from 10 percent of the total emissions to less than 2 percent voluntarily, what is the added benefit of now having a regulatory scheme to try to drive it lower?

MR. DROZDOFF:

The voluntary program only dealt with 4 companies at 5 facilities that, at the time, produced 90 percent of the emissions. As that number gets ratcheted

down, there are other facilities that were never included. This brings those in and allows for reduction to occur across the State. Also in 2000, the EPA was moving rapidly to put a program in place. The fine points were not well addressed in the voluntary programs, such as how it would be monitored, how to make sure everyone monitored it the same and how to submit your results to make sure you are comparing apples to apples. The regulatory program would provide that sort of baseline level of understanding for everyone, so it would not be left to chance.

MS. CRIPPS:

We heard concerns from the environmental groups that under a voluntary program, what would keep a company from deciding they did not want to operate these controls anymore and how were we going to know they were being operated appropriately. In order to address those concerns, we moved from a voluntary to a regulatory program to make sure those controls would continue to be operated.

CHAIR RHOADS:

Are there any federal regulations on mercury?

MS. CRIPPS:

The most recent is related to mercury emissions from power plants. We have been working with EPA headquarters on mercury emissions from mining and they are looking into whether or not a federal program is warranted. Most of the precious-metal mining occurs in the State of Nevada. At this point, it does not appear there will be a federal program because there is just not enough going on outside of the State to justify one.

ALAN R. COYNER (Administrator, Division of Minerals, Commission on Mineral Resources):

You all have a copy of the PowerPoint presentation I will be presenting today ([Exhibit D](#)). It shows what the Division of Minerals is and what we do as well as an update on mining and exploration activity in Nevada. Our mission is to conduct activities to further the responsible development and production of the State's mineral resources to benefit and promote the welfare of the people of Nevada. We are part of the Commission on Mineral Resources and consist of seven members from the minerals industry appointed by the Governor. One of these is an at-large member from the public, quasi-related to the mineral industry. The other six members are assigned by their area of expertise; two

from large-scale mining, one from exploration and development, one to represent the small miner, an oil and gas commissioner and a geothermal commissioner. Our annual budget is approximately \$1 million, which comes from revenue we derive from fees on the mineral industry.

We talk to many new residents of our State who do not understand the mining background of Nevada. We conduct two teachers' workshops; one in southern Nevada and one in northern Nevada. We reach about 200 school teachers every year and give them hands-on activities, which they can take back to their classroom and teach school children of Nevada about mining and minerals, its importance to our economy and what it means to the history of our State.

Our marquee program is the Abandoned Mine Lands Program, given to us by the Legislature in 1987. It is important to remember that mining and prospecting have been going on in this State for at least 150 years. The legacy of that is a lot of exploration; pits, tunnels, shafts, etc., all over the State. An educated guess is there are approximately 200,000 of them and approximately 50,000 of them might represent a hazard. Our job is to locate and do something about them. Starting on page 2 and continuing through page 4 of your handout, [Exhibit D](#), you will see what those abandoned mines typically look like. Often they look inviting for someone to go exploring. These mines are all over Nevada. We were just at an old underground gypsum mine in Las Vegas, located at the west end of Warm Springs Boulevard. We are working closely with Clark County to try to get something done there.

MR. COYNER:

Virginia City is riddled with abandoned mines, which tend to open from time to time. Page 3 of your handout, [Exhibit D](#), shows you one that recently opened near the Overland Pit, which was a large cut-and-fill operation to accommodate the new V & T Railroad Project. This opened up just feet from the construction activities. We are focused on increasing our efforts to locate these hazards. As more and more people venture onto our public lands, we could realize more and more accidents. We evaluate each abandoned mine and bring that evaluation into our database where it is described and ranked. We typically place a fence around each one and mark it as "dangerous" to warn anyone who might think it is a good idea to explore it.

This is the twentieth year of the program. Approximately 11,500 abandoned mines have been discovered and approximately 9,000 secured. We have to

make a determination of whether these are on private property, patented claims or public land. If they are on public land, they are our responsibility. If not, it is the responsibility of the person who controls the property.

To help us secure these mines, we use summer interns. We had six last summer from the University of Nevada, Reno. They go out in four-wheel drive trucks with posts and fencing. It is not only cost-effective for us, but a good experience for the students. There is also an Eagle Scout outreach program, which is a group of boys with Eagle Scout projects near Goodsprings. There have been 68 Eagle Scouts since 1992, which is an enviable record.

The worst of the abandoned mines that are close to town, whether it is Las Vegas, Reno or Tonopah, for example, are backfilled. We have backfilled 263 since 2000 with our latest effort near Tonopah, where we backfilled 52 of them. We would like to do more, but there is a lot of permitting involved. Bats are attracted to these old mines, and we have to be careful not to backfill over threatened species, which includes tortoises. Therefore, in addition to the many permits, it is cost-intensive for the studies required prior to backfilling.

We mail brochures to every fourth through eighth grade class in the State each year, trying to get the message out about the dangers of these abandoned mines.

Page 6 of your handout, [Exhibit D](#), shows a recent project, the White-Grow Gypsum Mine, in the Valley of Fire State Park. It is an abandoned gypsum mine and was acquired as part of the park acquisition. It was an open-cut mine and quite hazardous with an 80-foot drop and a lot of four-wheel drive recreation in the area. Being on State land, it represented quite a liability to us. We worked cooperatively with Allen Biaggi, the Director of the State Department of Conservation and Natural Resources, and were able to put together a Supplemental Environmental Project (SEP). An SEP is when an individual or a company has a violation and they have the option of either paying the fine to the Nevada Division of Environmental Protection or working on an SEP. In this case, we found a willing participant in Art Wilson from Moundhouse who was able to mobilize his equipment to the Valley of Fire and do the bulldozing and blasting. It resulted in an excellent final product in terms of erasing the liability at no cost to the State taxpayers.

MR. COYNER:

We also overlook oil and gas mines even though there are not a lot of those in the State. You have probably heard a lot about geothermal. The Beowawe Plant in Lander County is shown on page 7 of your handout, [Exhibit D](#). There was a drop in the number of wells permitted and drilled in 2006 compared to 2005. The reason for that is there was a dearth of availability of equipment in 2006 to do the work. There were a number of wells permitted and the permits are good for three years. They are waiting for equipment in order to be able to drill those wells. Geothermal is still in its infancy even though we have been utilizing it since the 1980s. United States Senator Harry Reid has been quoted as saying "Nevada is the Saudi Arabia of geothermal energy." We have hot water at shallow depths and technology is allowing us to use lower-temperature waters, so we are on the cusp of fully realizing our potential with regard to geothermal.

To give you an update on production and exploration activity in Nevada, I have shown a graph on page 9, [Exhibit D](#). It shows the value of production in millions of dollars versus time. As you can see, in 2005, production reached \$3.9 billion, which was a new record of added revenue to this State. Of that, approximately \$3 billion comes from gold. We are in the biggest gold boom in American history. We also produce about 10 million ounces of silver. Even though we are still considered the Silver State, Alaska is the number one producer of silver right now. We only have one main silver mine and the rest comes as a by-product.

Nevada is also back in the copper business. The old Kennecott mine in Ely is operating again, which proves there is really no such thing as an abandoned mine, but just a mine waiting for the next generation of technology or miner to come along. We are producing about 128 million pounds of copper. We are the United States' largest producer of barite and diatomaceous earth. Aggregate is important in this State, especially in Las Vegas. It is needed to build the casinos, roads, sidewalks, curbs and gutters, all requiring concrete, which requires aggregate.

There are 30 major gold mines, mainly concentrated in the north part of the State. The most productive open pit is Barrick's Betze-Post mine, which produced 1,510,000 ounces of gold in 2005. The most productive underground mine is Barrick's Meikle mine producing approximately 500,000 ounces of gold. There are two marquee mines. One is the Phoenix mine, which is a Newmont property near Battle Mountain. A lot of old sites are

being reopened for mining. The other one is near Mount Tenabo at the south end of Crescent Valley in the Cortez Hills. Last year, our mining companies projected spending approximately \$600 million worldwide, and these are just the companies actively producing in Nevada. Of that amount, they projected spending approximately \$150 million in Nevada. We have recently seen claim fees recovering, which is important to my agency because that is where we get our money. We get a small portion of the claim fee paid to the State and the county by the mining companies.

Currently, the price of all of the commodities are up; gold, silver, copper, aluminum, lead, zinc and uranium. Uranium has been less than \$20 per pound and is currently at \$72 per pound. The first illustration on page 15 of your handout, [Exhibit D](#), shows 55 pounds of gold worth \$530,000 taken from the Round Mountain mine in 2 hours. The gold bars you see in the last illustration are out of the Marigold mine in Humboldt County.

SENATOR COFFIN:

The population is expanding in southern Nevada and encroaching on aggregate mines where there is a lot of blasting. How far will it go before we have to find new mines outside the valley?

MR. COYNER:

It certainly is a concern that with the land, zoning and use changes, the ability to continue to acquire aggregate is problematic, because we are building over the area in many cases. Recently, it has been rumored the large aggregate operation at Blue Diamond is going to cease production. We know the gypsum mine at Blue Diamond has ceased, because Rhodes Development bought the property. The property value of that bluff became so high, it became more valuable as housing and homesites than mining. The same is true of the aggregate mine at Blue Diamond. That mine potentially is going into closure as well because of real-estate value. There is a lot of aggregate in the vicinity of the valley, but whether it goes to housing, desert tortoise or new airports depends on priority. The problem is, the further you reach out for aggregate, the more transportation, the more cost and the more pollution to truck it back into the valley.

RUSSELL FIELDS, NEVADA MINING ASSOCIATION:

The Nevada Mining Association's members include all of the major mining operations and the suppliers of goods and services to the industry, as well as

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some of the smaller mining companies. I have left a copy of my full remarks with the secretary ([Exhibit E](#)).

CHAIR RHOADS:

There being no further business, the Senate Committee on Natural Resources is adjourned at 4:59 p.m.

RESPECTFULLY SUBMITTED:

Ardyss Johns,
Committee Secretary

APPROVED BY:

Senator Dean A. Rhoads, Chair

DATE: _____