MINUTES OF THE MEETING
OF THE
ASSEMBLY COMMITTEE ON NATURAL RESOURCES, AGRICULTURE, AND MINING

Seventy-Fourth Session
February 12, 2007

The Committee on Natural Resources, Agriculture, and Mining was called to order by Chair Jerry D. Claborn at 1:31 p.m., on Monday, February 12, 2007, in Room 3161 of the Legislative Building, 401 South Carson Street, Carson City, Nevada. Copies of the minutes, including the Agenda (Exhibit A), the Attendance Roster (Exhibit B), and other substantive exhibits are available and on file in the Research Library of the Legislative Counsel Bureau and on the Nevada Legislature's website at www.leg.state.nv.us/74th/committees/. In addition, copies of the audio record may be purchased through the Legislative Counsel Bureau's Publications Office (email: publications@lcb.state.nv.us; telephone: 775-684-6835).

COMMITTEE MEMBERS PRESENT:

Assemblyman Jerry D. Claborn, Chair
Assemblyman Joseph Hogan, Vice Chair
Assemblyman Kelvin Atkinson
Assemblyman David Bobzien
Assemblyman John C. Carpenter
Assemblyman Pete Goicoechea
Assemblyman Tom Grady
Assemblyman Ruben Kihuen
Assemblyman John W. Marvel
Assemblyman James Ohrenschall
Assemblywoman Debbie Smith

STAFF MEMBERS PRESENT:

Jennifer Ruedy, Committee Policy Analyst
J. Randall Stephenson, Committee Counsel
Betty Francis, Committee Secretary
Matt Mowbray, Committee Assistant

OTHERS PRESENT:

Leo Drozdoff, P.E., Administrator, Nevada Division of Environmental Protection, Department of Conservation and Natural Resources
Colleen Cripps, Ph.D., Deputy Administrator, Nevada Division of Environmental Protection, Department of Conservation and Natural Resources
Alan Coyner, Administrator, Nevada Division of Minerals, Department of Business and Industry
Russ Fields, President, Nevada Mining Association
Mike Elges, Chief, Bureau of Air Pollution Control, Nevada Division of Environmental Protection, Department of Conservation and Natural Resources

Assembly Bill 31: Revises provisions governing the pooling of reclamation performance bonds. (BDR 46-565)

[The presentation on Assembly Bill 31 was postponed and the measure not heard at this time.]

Chair Claborn:
[Called meeting to order at 1:31 p.m.]

Leo M. Drozdoff, P.E., Administrator, Nevada Division of Environmental Protection, Department of Conservation & Natural Resources:

[PowerPoint presentation provided (Exhibit C)]

The mission of our agency is "to preserve and enhance the environment of the State in order to protect public health, sustain healthy ecosystems and contribute to a vibrant economy." Nevada's gold production started to take off in the 1980s. At that time, people in the industry, agency, and Legislature realized regulations were to ensure there was a responsible environmental program in place. As the program has progressed, it has been used as a model by other states and countries around the world. We permit and regulate 320 mining facilities. The agency holds or jointly holds over $800 million in sureties for reclamation. If it is private land, we hold the bond, if public land, we jointly hold the money. The money is taken up front to ensure responsible reclamation takes place. We have regulations in place to ensure that when mining is finished, the land is restored to a post-productive mining status.

With that, the balance of the presentation will address our mercury program. We developed a program from the ground up.

Assemblyman Marvel:
Where are we with the TRI (Toxic Release Inventory)?

Leo Drozdoff:
The TRI numbers come out every year. There was a change in 1998 that brought the mining industry into the TRI program. A number of issues came from that, one of them was the mercury program. We are trying to better articulate what the numbers mean. The other TRI numbers are an accounting of pollutants that are moved.

Assemblyman Marvel:
Nevada Department of Transportation (NDOT) also moves earth material.

Leo Drozdoff:
That is true. They have had to comply with TRI and they do. The numbers are big and sometimes require discussion, but six to eight years later people understand what TRI does. What we try to do with the mercury program is put some context to it.

Chair Claborn:
Thank you, Assemblyman Marvel. We have another question from Vice Chair Hogan.

Assemblyman Hogan:
You mentioned the bonding for reclamation. Can you give us your general feeling as to the adequacy of the requirement and of the amounts that are there to deal with the reclamation requirements later on? Are we fully guaranteed? What is the nature of that program?

Leo Drozdoff:
I feel very comfortable with where we are today. Several years back, our agency required bonding for closure activities in addition to physical reclamation, which broadened the program to make sure that all aspects were covered. We have also tightened the requirements for corporate guarantees for large facilities on private land. All bonds are reviewed every three years and corporate guarantees are reviewed every year. The bonding numbers are put together so third parties can actually do the work. If a mining company defaulted, we or the BLM (Bureau of Land Management) or Forest Service would be able to go on site, or could hire a third party.

Chair Claborn:
Are there any questions? [There were none.]

Colleen Cripps, Ph.D., Deputy Administrator, Nevada Division of Environmental Protection, Department of Conservation & Natural Resources:

[Referring to the PowerPoint Presentation on the Nevada Division of Environmental Protection (Exhibit C).]

I will be talking about Nevada's mercury control program for the mining industry. What we have been doing with mercury and mining is similar to Nevada's mining law in general. It is also a state-specific program. There is no federal mandate or requirements to manage mercury or mercury emitted from the mining industry. The program is fee funded and is specifically designed to meet Nevada's needs.

I want to give you some basic information on mercury in general. It is naturally occurring and geologically concentrated and can be associated with volcanic and geothermal springs. It has a complex chemistry that is not well understood and can be transported globally, regionally, and locally. How this transport occurs is dependent upon the kind of mercury emitted from the various sources and whether it is elemental mercury, reactive gaseous or particulate mercury.

Chair Claborn:
When we talk about mercury are we talking about quicksilver?

Colleen Cripps:
Yes, we are. There are also a number of man-made and ethnogenic sources of mercury, which include coal combustion, incinerators, thermal treatment of ore, geothermal heat recovery, and historic mine releases. It is important to understand that mercury gets emitted to the area and gets redeposited as both wet and dry deposition. That mercury will then enter lakes and bodies of water where it is transformed into methyl-mercury, which is reactive mercury that can bioaccumulate in fish. The primary pathway of human exposure in the United States is through eating contaminated fish.

In the year 2000, the baseline mercury emission from mining ore was 10.5 tons. Currently, the estimated mercury from the mining industry is 2 tons. We are making significant improvement in the amount of mercury emitted from that industry. On the whole, this is a small amount compared to global and U.S. industrial sources.

Mercury is naturally occurring and geologically concentrated in volcanic and some sedimentary rock. In Nevada we have a mercury belt, which is an area in Northern Nevada where there is concentrated mercury. The mercury is located

with gold; however, the gold concentrations are low and the mercury concentration is high. During the leaching and concentration process, mercury behaves like the gold.

In mining some ores, thermal processes are used to drive off the mercury so gold can be recovered. These processes are relatively new. The first roaster permitted in Nevada was in the 1990s.

Assemblyman Goicoechea:
You show two tons for mining, and yet in 2000, the US industry was responsible for 123 tons. Can you tell me if mining is responsible for only two of the 123 tons, and are they coal-fired?

Colleen Cripps:
Coal-fired power plants, yes.

Assemblyman Carpenter:
To follow up on the coal-fired plants, what about the plant they are proposing in the Ely area. Will they have mercury controls on that?

Colleen Cripps:
Yes. There will be state-of-the-art mercury controls on any new power plants in the State.

Assemblyman Carpenter:
So they are not emitting very much, right?

Colleen Cripps:
They should not be, no.

Assemblyman Carpenter:
They should be a lot cleaner than the ones we have today, right?

Colleen Cripps:
Yes, and there are also programs in place to address emissions from the power industry as well.

Assemblyman Marvel:
I read that mercury is found in every fish everywhere. Is that natural occurring, or have the fish always had mercury, and then we became concerned about it, and now all the fish are being checked? Any ideas?

Colleen Cripps:
I suspect that what you say is true, that if you look for mercury, you will find it. There is so much in the global mercury pool that you will see some level of mercury just about everywhere.

Assemblyman Marvel:
How do they capture the mercury?

Colleen Cripps:
The fish?

Assemblyman Marvel:
No, how do you capture it?

Colleen Cripps:
They use scrubber technologies.

Assemblyman Marvel:
Can it then be generated into better uses, such as industrial uses?

Colleen Cripps:
Yes, there is quite a bit generated as a co-product, which then is refined again and can be used for other processes.

Chair Claborn:
Would these be the same type of scrubbers used on a coal-generated power plant? They call it a bag house. It is used after the coal is burned to a crisp, and they bag the fine dust so it does not pollute the air. The dust is used for fertilizer. We have someone here who will answer the question for us.

Michael Elges, Chief, Bureau of Air Pollution Control, Division of Environmental Protection, Department of Conservation and Natural Resources:
I want to make sure I understand your question. It sounds to me that you are trying to get at the difference or an understanding of the relationship between what is used in the coal-fire industry.

Chair Claborn:
I was trying to associate scrubbers that would extract the quicksilver out of the emission. They do that the same way as they do with the coal-generated power plants. I was associated with one owned by Southern California Edison that they closed down in Laughlin, Nevada. I represented the membership there in the 1960s and 1970s. They had to change scrubbers all the time to catch

the emissions. They finally built a big bag house that seemed to satisfy all the people involved in regard to pollution, and it seemed to work out. They were going to convert it to gas but it was too expensive. As of today it is closed, but the scrubbers are still there.

Michael Elges:
The way I would characterize this is the concept of collecting mercury from a gas stream. It can be simple, but there are other technologies including the bag houses. When you compare the coal-fired industry and the gas streams they are trying to clean up with the thermal processes in the mining industry, there is a difference in the technology and effectiveness. It could be more effective to clean up through scrubbing the gas stream and use of carbon-based filtration systems. On the electrical-utility industry side, it is sometimes better to clean the coal before they combust it. There is technology to strip the mercury out of the coal, so it does not get into the gas stream to begin with. The program we have designed is to ensure that the best technology is put on the source and not just picking a type of technology and using it across the board.

Chair Claborn:
I agree with you. Thank you, you answered my question.

Colleen Cripps:
[Continues report.] In 1998, the toxic release inventory was modified to require the mining industry to start reporting their mercury emissions. With that first round of reporting in 2000, it was clear there was a significant amount of mercury being emitted from the mining industry. At that time, we developed with the mining industry and the U.S. EPA (Environmental Protection Agency) the Voluntary Mercury Reduction Program. The program was in place from 2000 to 2005. It consisted of four companies and five facilities operated by the companies. Those companies and facilities represented 90 percent of the reported mercury emissions through the TRI.

Our award-winning program was highly successful. It resulted in significant reduction of mercury over a short time period and the development of new control technologies. Since that time, in review of the voluntary mercury program, the Division decided to expand the program. Since then, we have adopted the Nevada Mercury Control Program, a regulatory and permitting program. It expanded the coverage of the voluntary program to all mercury reduction programs to include all precious metal mining operations.

The regulatory program was adopted in March 2006 and was developed without a federal mandate. There are no federal standards or requirements to manage the mercury emissions from the mining industry. The program contains

time limits for issuing enforceable permits and for the installation of the best achievable controls on all of the non-de minimis thermal units by July 2011.

To date, we have received applications from all companies that operate thermal units. The applications for the best achievable or maximum achievable control technology are due by February 2008. The two programs were separated to allow the prior voluntary programs to continue operating.

Even though we have not issued permits for the existing controls, the program requires that all record keeping, testing, operation, and maintenance reporting will become enforceable before the permit is issued. We are then able to enforce these requirements on the existing controls.

In addition, we require the facilities to conduct testing to determine the kind of mercury emitted. The kind of mercury emissions will affect whether the mercury is going into the global mercury pool and is being transported globally, or whether it can be deposited more locally or regionally. We are also in the process of drafting permits for the existing units that have come to us already. We are conducting inspections of these facilities to ensure they are in compliance with the requirements of the program. We have begun with the largest facilities and those that have the largest potential to emit mercury and are working to the smaller facilities.

Assemblyman Marvel:
Can you explain the difference of elemental RGM (Reactive Gaseous Mercury) and particulate?

Colleen Cripps:
Elemental mercury is the silver material you see. RGM is a form of mercury in an ionic state. It is more reactive when it gets into the atmosphere. The final is particulate mercury that is bound to small particles. When emitted from a stack or process, it behaves more like a particle than the other two forms.

Assemblyman Marvel:
Do geothermal power plants today emit mercury too?

Colleen Cripps:
Yes.

Assemblyman Marvel:
What form of sulfur is in the water?

Michael Elges:
The processes of geothermal plants are different, depending upon which one you look at. Fundamentally, the brine or hot water pulled from the process to reap the heat has mercury. The process of direct or indirect heat exchange articulates how much, if any, of the mercury is going to be emitted.

Assemblyman Marvel:
Do you find mercury in artesian wells?

Michael Elges:
Certainly, that is the case.

Assemblyman Marvel:
A lot of people use it for domestic uses. Are they exposing themselves?

Michael Elges:
What you have to be cognizant of, are the relative quantities. If you look for mercury you will find it. The quantity, exchange, and chemistry are where the complexity comes in.

Chair Claborn:
Does that answer your question, Assemblyman Marvel?

Assemblyman Marvel:
You can identify the presence of mercury?

Michael Elges:
That is correct, and the different forms.

Assemblyman Goicoechea:
Even though we have moved from the voluntary reduction program into Nevada's control program, will all the controls put in place under the voluntary program be maintained and enforced?

Colleen Cripps:
Yes.

Assemblyman Carpenter:
The people in Idaho had made a mistake in the fish and had to modify their initial findings. Do you know what happened there?

Leo Drozdoff:
There were a series of articles over a year ago that pointed to high mercury levels in water and the water column. The subsequent results were in error due to contamination.

Chair Claborn:
If fish can have mercury in them now, could they have had it 100 years ago? Or has this been man-made or was it developed because of various elements?

Colleen Cripps:
It is difficult to know how much mercury would have been in fish 100 years ago. As I indicated earlier, most of the State of Nevada is in an area that has naturally concentrated mercury, and how much we are seeing in the fish now compared to what is being emitted globally, I am not sure anyone has an answer to. We do know there is more mercury being emitted globally than there ever has been before.

Chair Claborn:
I was trying to find out if it is 100 percent man-made.

Colleen Cripps:
No, absolutely not.

Assemblyman Marvel:
Do you know what is going on in the Carson River, and are there attempts being made to recover that mercury?

Leo Drozdoff:
The Carson River is a Superfund site, and that work is largely complete. Removal of materials was not contemplated, but was considered as an alternative. It was decided removal would have created more of a mess than already existed. There is mercury sediment on the bottom of the Carson River, but we have removed all of the known contributors.

Assemblyman Marvel:
So it will lie there dormant?

Leo Drozdoff:
Yes. We would like to conclude with a couple of thoughts. We all recognize mercury is being emitted by the mining industry. Our program is going to ensure that the best technologies are going to be applied and maximum emission reductions are going to occur through enforceable permits. We stated

earlier that over 6,000 tons is being emitted worldwide and mining is down to two tons.

Chair Claborn:
Do the scientists know if mercury contributes to global warming? Would mercury have anything to do with that?

Leo Drozdoff:
I do not believe so. The primary concern is that mercury deposits, fish consume it, people consume fish, and it causes neurological issues at certain concentrations, primarily with pregnant women and children. That is the main risk factor.

Chair Claborn:
The reason I ask that question is we hear about global warming every day.

Leo Drozdoff:
We are going to continue to work with EPA in the surrounding states. We are working with Idaho and Regions IX and X to evaluate our program and do additional work as needed.

I would like to close by saying that we have a lot more going on with mercury than we talked about today. There is work going on with research. We have received an air toxic grant from EPA for $364,000. We have operated mercury deposition network sites. There are three in the State. We are, with the industry's help, funding fusion of emission research. This is not required, but the industry has contributed $250,000 for us so we can hire scientists to study the questions about fugitive emission. We have also put in place the Nevada Clean Air Mercury Rule (CAMR), which regulates emissions from power plants. We have regulations for mercury storage at Hawthorne. Senator Titus has a bill to address that this session. We also do work on public education and outreach.

Assemblyman Ohrenschall:
Was Idaho the only neighboring state that was pointing a finger at our mercury emissions or were there any others?

Leo Drozdoff:
There were people in Idaho and certain groups in Utah that had concerns. The State of Utah, in terms of its government, is okay with our program.

Assemblyman Ohrenschall:
So our program has addressed their concerns?

Leo Drozdoff:
I do not know if there were any concerns with the government agencies, but the program has been viewed positively by my peers in the State of Utah.

Assemblyman Hogan:
On page 8, the statistics, the term "U.S. Industrial Emissions" includes mining emissions, is that correct?

Leo Drozdoff:
Yes.

Assemblyman Hogan:
The two tons, is that the United States or Nevada?

Leo Drozdoff:
The two tons is a 2005 number. It is what was contributed to by Nevada mining.

Assemblyman Hogan:
So nationwide, there would be a larger number of mercury emissions from the industry?

Leo Drozdoff:
Yes, the balance of gold mining for the country is in Nevada, but, yes, it will be more.

Assemblyman Hogan:
What would you say are the four greatest environmental threats we face in Nevada?

Leo Drozdoff:
Mercury would be on top of the list. Other issues the agency is working on are arsenic in drinking water and issues associated with growth.

Assemblyman Goicoechea:
There is a bill coming forward that would allow 198 funding uses to be expanded into waste-water treatment. We will move away from the typical true water treatment facility. Is there any objection from your Department on that?

Leo Drozdoff:
We took part in S.C.R. 26. We have a good idea of where that committee went and what the bills look like. We are here to serve and do not object.

Assemblyman Goicoechea:
I was talking about Gerlach's waste-water treatment facility.

Leo Drozdoff:
In general, we are here to serve.

Assemblyman Carpenter:
You said in 1997 there we over 6,000 tons of mercury worldwide and now the current estimates from mining are 2 tons, and you also say global emissions continue to increase. It looks to me that the other nations, such as China, do not do their part. It is something that is going to be around for a long time, and it may be something we cannot do anything about.

Leo Drozdoff:
That is correct, but we are going to do our part. There is no question that mercury deposition is an issue both globally and locally, and we will handle the local part. Absolutely, the 6,000 tons and rising worldwide is a big problem.

Alan Coyner, Administrator, Division of Minerals, Department of Business and Industry:
I will review our agency with you through a PowerPoint presentation and will provide an update on production, exploration activity, and geothermal resources in Nevada. [Copy of PowerPoint presentation and CD provided (Exhibit D).] Our office oversees the reclamation bond pool. The bond pool is a small part of the $800 million in bonds Leo Drozdoff discussed earlier. We are currently bonded at $2.3 million. We had $2.5 million to put in the pool, giving us a surplus of 106 percent in regards to our liability. We are issuing notice-level bonds. We have 117 for drilling and smaller stuff. They require 100 percent bonding. We do draw premium and interest on the bonds.

Assemblyman Marvel:
How many mines have you actually cleaned up?

Alan Coyner:
I know a few of the numbers. We have to look at two things: were they primitive mines under the current umbrella of regulation and bonding, or were they historic mines that were pre-regulation. There are two different categories.

Assemblyman Marvel:
This would be fairly recent, such as mines that would go bankrupt.

Alan Coyner:
The answer to that is in the 1980s there were 30 properties that had to be looked at. Eighteen were with ALTA Gold, so we had one company go bankrupt. That collapsed several properties. Most of those were small properties. Pre-regulation, we can talk about Yerington and Anaconda, but post-regulation we have had very few, and they were very small.

In response to that, I can say that in the late 1980s when those happened, we have dramatically strengthened both the requirements for the bond pool and for bonding in general. The system we have here in Nevada withstood the test of those forfeitures and bankruptcies well into the 1990s. We have taken steps to cover the few examples in which the system did not perform adequately.

The basic theme is Nevada is a great place to explore and mine for gold, silver, and other mineral commodities. If you have not been out to any of our major mines, now would be a good opportunity. Exploration is occurring in all of Nevada's 17 counties and many of its 526 mining districts.

Chair Claborn:
When you mentioned the oil over by Jacks Valley at Railroad Valley, is it next to the Indian reservation?

Alan Coyner:
Not really, most of it is south of the reservation.

Chair Claborn:
My understanding is that the oil is heavy and hard to produce because it is so thick. So we need to find another way to heat it to get it up. There is a lot of oil there.

Alan Coyner:
That is correct. There is a fair amount of oil there, but it is difficult to recover because of the specific gravity. It is heavy oil, one of the bottom products in the chain and is of less value as well. It can produce kerosene, tar, and asphalt-type materials, but we do not have the crude oil that draws the premium because you can make gasoline, which gives it a much higher value. Nevada oil is not only hard to find but is of a lower value.

Assemblyman Hogan:
When you were talking about the reclamation crews, is there any possibility in some parts of the State near correctional institutes to use prison labor?

Alan Coyner:
I specifically looked into the issue, but there are limitations in regard to transportation, guards, cost, and the fact that they have to return at certain times. There are so many limitations on the use of those crews that it would not be practical to use them.

Assemblyman Hogan:
The industry prefers to explore in Nevada rather than in other states. What are the reasons for that preference?

Alan Coyner:
It is political and geologic. The Frazier Survey, done annually in British Columbia, ranks various jurisdictions on their potential, both geologically and politically—geologically in terms of finding the rocks, and politically in terms of permitting the mine and putting it into production. Nevada has consistently ranked high in the survey. You asked why not in other places. Look at California in particular; its legislature produced a statute that requires the backfilling of all pit mines. Because of the size of those mines, it is physically and economically impossible and might add to environmental degradation to backfill the pits. In Montana, it is a good state, but there is no interest because of the state's no-cyanide law. Cyanide cannot be used in the heat-leach operations. In Nevada, we have a good regulatory standard in the use of cyanide.

Assemblyman Hogan:
In the picture of the Betsy Post Mine, an open-pit mine, I am curious that because we do not require backfilling, what type of reclamation plan would be appropriate for a mine of that scale and what kind of bonding would guarantee it?

Alan Coyner:
That is outside my boundaries, but Leo can answer that.

Leo Drozdoff:
For reclamation out at Goldstrike, all of the earth that has been turned over, with the exception of the open pit, will be reclaimed to a post-mining land use. This means it will be reshaped and reseeded. The pit will become a pit lake. In advance of permitting, it will require pit lake studies. After the studies, monitoring is required to make sure what has been committed to is going to happen. If not, then changes would be needed.

What we require is that they do the study work to show if there is going to be a water-quality issue, and then manage from there. What we do is monitor the

water quality of the pit as it fills. That is the general approach. Bonding could be in the millions of dollars.

Chair Claborn:
Any questions? [There were none.]

Russ Fields, President, Nevada Mining Association:
Much of what I was going to say has already been said in the previous presentations. All of the major mines (in Nevada) are members of our organization. We have suppliers of goods and services to the members.

[Reads from written testimony (Exhibit E).]

Assemblyman Marvel:
How difficult is it now on permitting? Do we have the same problems now as we did in the past?

Russ Fields:
It is one of our biggest challenges. It is the timeliness, how long it takes to get through the process. The State and federal partners have worked hard to streamline the processes. It will never be fast enough, but it is better than it has been. There is the time value of money and the uncertainty of price.

Chair Claborn:
Any questions? [There were none.] Meeting is adjourned [at 3:26 p.m.]

RESPECTFULLY SUBMITTED:

_____
Sherrada Fielder
Committee Secretary

APPROVED BY:

_____
Assemblyman Jerry D. Claborn, Chair

DATE: _____

EXHIBITS

Committee Name: Committee on Natural Resources, Agriculture, and Mining

Date: February 12, 2007 Time of Meeting: 1:30 p.m.

Bill	Exhibit	Witness / Agency	Description
	A		Agenda
	B		Sign In Roster
	C	Leo Drozdoff, Nevada Division of Environmental Protection	PowerPoint Presentation on Nevada Division of Environmental Protection
	D	Alan Coyner, Nevada Division of Minerals	PowerPoint Presentation and CD of presentation
	E	Russ Fields, Nevada Mining Association	Written Testimony