

**Great Basin Mine Watch • Earthworks • the Sierra Club's Toiyabe Chapter  
Idaho Conservation League**

December 27, 2005

Leo Drozdoff, Administrator  
Nevada Division of Environmental Protection  
901 South Stewart St. Suite 4001  
Carson City, Nevada, 89701-5249

Re: Comments on the Proposed Mercury Emissions Reduction Program

These comments are submitted on behalf of Great Basin Mine Watch, Earthworks, the Sierra Club's Toiyabe Chapter and the Idaho Conservation League. These organizations and their members are concerned about the extent of mercury air emissions from mining operations in Nevada and the impacts to human health and the environment.

Despite preliminary emissions reductions, Nevada gold mines are still responsible for 25% of the mercury air emissions west of Texas, and over 90% of the mercury air emissions in Nevada.<sup>1</sup> These emissions represent a substantial, on-going risk to current and future generations and important natural resources in the region.

Protection of the environment and public health is a core mandate of NDEP, and the basis on which the proposed mercury reduction program should be developed.

“The mission of the Bureau of Air Pollution Control (BAPC) is to **achieve and maintain levels of air quality which will protect human health and safety, prevent injury to plant and animal life**, prevent damage to property, and preserve visibility and the scenic, esthetic and historic values of the State.” (emphasis added)

The proposed program does not meet this mandate for the many reasons identified below. We ask that the NDEP take the additional time needed to re-draft the proposed rules to incorporate these key provisions before initiating the formal rule making process.

This is a substantial new program, with significant public health implications for the many citizens who live in the region. It is imperative that a regulatory program be

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<sup>1</sup> U.S. Environmental Protection Agency, Toxic Release Inventory, 2003.

developed that instills public confidence and fully protects the citizens and the natural resources in the region.

Our detailed comments accompany this transmittal letter.

In summary, we believe that the proposed program is substantially flawed because NDEP has not conducted a rigorous public health risk assessment to determine what levels of mercury emissions are acceptable. As a result, there is no means of determining if the proposed program will be sufficient to protect human and environmental health from toxic mercury emissions. While all reductions in mercury emissions are welcomed, there is simply no means for NDEP to determine if the reductions that may occur from this program are sufficient or if greater steps need to be taken.

The concept of “presumptive NvMACT” is fatally flawed. Presuming that a piece of control equipment performs as MACT merely because the equipment was installed under the former VMRP is inappropriate.

Further, the timeframe created in the proposed program is too slow and allows companies to continue emitting large amounts of mercury to the air. The program’s failure to require continuous emissions monitoring at all mercury emitting sources is also a serious flaw.

Our detailed comments are attached. Please do not hesitate to contact representatives of Great Basin Mine Watch, Earthworks, the Sierra Club’s Toiyabe Chapter and the Idaho Conservation League if you have any questions about our comments. We look forward to working with you to address our concerns and integrate our recommendations into the next version of this proposed program.

Thank you for your consideration.

*S/ Elyssa Rosen*  
Great Basin Mine Watch

## **I. The Proposed Program is Not Linked to the Protection of Public Health and Environment:**

There is strong indication that mercury air emissions from Nevada gold mining operations are harming natural resources, and present a threat to public health. According to a recent report by the Idaho Conservation League, measurements taken this summer near mines in the Carlin-Elko area found mercury concentrations more than 140 times what would normally be expected in the environment.<sup>2</sup> The highest reading reported were taken near the Barrick Mine, where mercury concentrations of more than 700 nanograms per cubic meter of air were recorded, as compared to background levels of less than 5 nanograms per cubic meter. Mercury measured in the town of Carlin was measured at up to 10 times expected levels levels.

In the down-wind State of Idaho, researchers have detected levels of mercury in a southern Idaho reservoir 150 times higher than those found in lakes in the northeast United States. The Idaho Statesman recently reported that an Idaho National Laboratory scientist found that mercury levels in the air rose 30 to 70 percent higher than normal levels when winds blew from the southwest, where the mines are located.<sup>3</sup> "The mines are the only sources big enough to cause those peaks," said Michael Abbott, an INL atmospheric scientist.

These figures are cause for real concern. Yet, there's no overarching goal, and associated provisions in the program to reduce mercury emissions to levels that are demonstrated to be protective of natural resources and human health. In fact, mercury emissions could actually increase under this program.

*Recommendation:* The program should set an overall goal of protecting public health and the environment. The rules should incorporate provisions for reducing mercury emissions overall. The program should be tied to monitoring activity that demonstrates that public health and natural resources are protected.

## **II. The "Presumptive MACT" Standard Is Lax and Does Not Provide for Timely Improvements Linked to Protection of Public Health:**

1) As currently drafted, the rules only allow the NvMACT standard to be weakened, not strengthened.

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<sup>2</sup> Hayes, Justin. Idaho Conservation League, Mercury Pollution in Northeast Nevada Air: A Screening Level Survey of the Potential Impacts of Gold Processing Facilities on Air Quality, August 2005.

<sup>3</sup> Barker, Rocky. Idaho Statesman. "High Mercury Levels Found in Idaho Reservoir" August 5, 2005. *Great Basin Mine Watch, Earthworks, the Sierra Club's Toiyabe Chapter and the Idaho Conservation League Comments on NDEP's Proposed Mercury Emissions Reduction Program*

Under the proposed program, the Director has the discretion to weaken the MACT standard based on company costs, adverse impacts on other pollution rates, and energy requirements. The proposed rules do not give the Director the authority to strengthen the NvMACT standard, if needed, to protect human health and the environment. This language places inappropriate emphasis on industry profits, rather than NDEP's mandate to ensure the protection of human health.

*Recommendation:* To better ensure that human health and the environment are protected, language should be added to the rules that would allow for the Nevada MACT to be strengthened based on public health and environmental factors – similar to the federal definition of MACT. *See, e.g.,* 42 U.S.C. §§ 112(d) and 7479(3).

2) The “presumptive MACT” inappropriately allows existing VRMP companies to continue to operate “as-is” with no requirement for additional mercury emissions reductions. Presuming that something is MACT simply because it is installed is inappropriate and counter to the sort of rigorous review that a program like this needs to be taken seriously by other regulatory agencies.

Although reductions have occurred under the VMRP, Northern Nevada gold mines are still responsible for vast amounts of mercury air emissions approximately 25% of the mercury air emissions west of Texas. A number of mines have made no substantial improvements in mercury air emissions, or even increased emissions, under the VMRP. For example, Barrick Goldstrike's emissions went from 1,243 pounds in 2001 to 1,438 pounds in 2003, (and to over 2000 lbs in 2004, based on submitted VMRP information) and Newmont Carlin South went from 490 pounds to 550 pounds. Yet, NDEP's proposed program would establish rules that would allow these mines to get a “presumptive MACT,” or essentially permit the mines as-is. This is unacceptable. Further mercury emission reductions are feasible and essential.

*Recommendation:* Existing facilities should be required to undergo timely review to identify additional measures to achieve mercury emissions reductions. While not actually adequate, such a review is required in phase II applications (see Sec. 24.6). NDEP should develop a MACT review process more similar to EPA's MACT review and require that existing tier I and tier II facilities under go such a review.

3) “NvMACT analysis” called for in Sec 24.6 and Sec 25.6 does not include any consideration of a health or environmental based risk assessment though does make provisions for the consideration of company costs associated with control equipment.

*Recommendation:* The determination of NvMACT needs to incorporate a health and environmental risk assessment to determine that emissions are within acceptable health and environmental parameters.

### **III. The Proposed Program Inappropriately Excludes Mercury Air Emissions From Fugitive Sources:**

The draft rules focus on controlling mercury air emissions from thermal units (e.g., autoclave, ore roaster, etc.). The rules inappropriately exclude any consideration of fugitive emissions. Fugitive emissions are those emissions that are generated from a more diffuse source, such as the waste rock piles, tailings or leach pads. There is strong reason to believe that fugitive emissions at gold mining operations are a significant source of mercury. Indeed, it is likely that the data sets collected by Hayes demonstrate fugitive emissions more than stack emissions.

*Recommendation:* The program is simply incomplete unless it requires subject companies, at minimum, to accurately measure and report fugitive emissions from their facilities.

### **IV. The Emissions Monitoring Program Is Wholly Insufficient to Provide Accurate Information and Accountability Under this Program**

The proposed rules provide for mercury emissions sampling and testing and test of performance only once a year. The program is based on self-monitoring, and furthermore, it appears that the clause in Section 23 (7(b)) would allow the Director to reduce or entirely waive the annual sampling. This is wholly insufficient.

One sample event a year has no statistical significance. It does not provide for accurate or credible information, or provide accountability to the public. The monitoring data would be subject to bias and manipulation based on such factors as selecting for certain ore types, weather conditions and equipment conditions. Under this program, there is no way to know that pollution control devices are regularly in operation, in proper condition, and effectively reducing mercury emissions.

The use of continuous emission monitoring systems for mercury air emissions is necessary and appropriate to ensure accountability under this program. This is in keeping with the requirements of other large mercury emitters, such as the new regulations governing coal-fired power plants.

*Recommendation:* Continuous emissions monitoring should be required of each facility to ensure that mercury air emissions data is accurate and to ensure accountability to the program.

### **V. The Rules Do Not Provide for Ambient Monitoring Around the Mines or In Neighboring Communities to Ensure Public Health is Protected.**

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Initial air quality monitoring efforts undertaken by Idaho Conservation League in northern Nevada have revealed that the public is exposed to levels of mercury in the air at orders of magnitude over background levels and that ambient air quality monitoring for mercury is feasible and inexpensive. *See Mercury Pollution in Northeast Nevada Air: A Screening Level Survey of the Potential Impacts of Gold Processing Facilities on Air Quality, Idaho Conservation League, August, 2005.* Monitoring results should be made available to the public in a timely manner so that the public can be confident of their safety.

*Recommendation:* The NDEP program should require ambient air monitoring for mercury at points of public exposure to identify the risks to human health and the environment. Monitoring data should be made available on a monthly, or at a minimum, quarterly basis. The costs associated with ambient air monitoring should be provided for in the rules with an appropriate fee structure.

#### **VI. Monitoring Is Needed to Identify the Public and Environmental Health Risk Presented by Mercury Air Emissions and to Identify Whether Improvements Are Occuring**

There has been little data collected in Nevada to determine the impacts of mercury air emissions on water, sediment, fish, waterfowl and soils. Although other states have initiated monitoring programs, Nevada has developed no such program.

NDEP should develop a monitoring program in conjunction with other state agencies to identify potential public health risks, and to take appropriate measures to ensure that the public is properly notified of those risks, and can take precautionary measures.

*Recommendation:* For the mercury reduction program to be effectively designed to protect human health and the environment, it is essential that NDEP work with other state agencies to initiate an aggressive monitoring program to quantify existing mercury concentrations in water, sediment, fish and soils to alert the public of potential public health risks and to be able to identify whether improvements are occurring over time.

#### **VII. The Proposed Program Is Not Based on a Mass-Balance Approach**

Under the proposed rules, there is no ability to determine a mass balance of mercury, and thus no ability to determine if a mine facility is providing accurate information of mercury air emissions. This is a fundamental and substantial problem.

Because of the potent toxicity of mercury and the threat it poses to human health, it's essential that the mine facilities be able to account for mercury at all stages of mine operations. Full accountability for the flow of mercury at regulated units is a feasible and appropriate part of the program. Public acceptance and support for the Nevada mercury program will only improve if clear, accurate, and complete information is provided on the

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flow of mercury at these facilities. While staff from the NDEP have indicated that this is something that can be done, there are no requirements for data submission in the regulations that would mandate this information.

*Recommendation:* The rules should incorporate a mass balance approach such that all facilities are able to fully account for mercury in all product and waste streams at regulated units.

#### **VIII. The Rules For Reporting By-Product Mercury Are Unclear, and Do Not Appear to Require Annual Reporting of By-Product Mercury.**

It appears that there is no requirement for reporting by-product mercury, other than in the initial application process (Sec. 26 1(d)). The amount of byproduct mercury produced should be a critical feature of the regulation, since it is easy to measure and provides some indication of the sources of mercury at each mine.

*Recommendation:* The rules should be clarified to ensure that all facilities are required to report by-product mercury to NDEP on an annual basis as a component of the mass balance process.

#### **IX. The Process for Determining the *De Minimis* Definition is Unclear and Inappropriately Provides For the Definition to be Determined After the Establishment of Rules**

The proposed rules give the Director the authority to determine the *de minimis* definition after the rules process is complete. Furthermore, the rules leave open the possibility of changing the definition at any point, and allows for the definition to be based on individual thermal units. This is inappropriate.

The *de minimus* definition is a key provision of the mercury reduction program, determining which facilities are subject to regulation and which are not. NDEP should provide a numerical definition (i.e. ounces per year) of *de minimus* in the proposed rules so that the merits of the definition can be fully reviewed in the rules process.

*Recommendation:* A numerical definition for *de minimus* should be incorporated in the draft rules. We believe that a facility – the sum total of all of a single company’s emitting sources in close proximity to on another – should be limited to emitting no more than 16 ounces per year if it is to be considered *de minimus*.

#### **X. The Proposed Timeframe Does Not Provide For Timely Improvements in Mercury Emission Reductions**

We believe the program could and should be accelerated to realize improvements in mercury control sooner. While we can hope that companies will adopt controls on the “early reduction” track, Nevada MACT controls actually will not be required until three to four years from now – an unreasonable delay in light of the continued high mercury emission levels.

*Recommendation:* NDEP should assume a much greater degree of urgency in addressing this public health risk.

#### **XI. The Tiering System Is Incomplete**

The VMRP Tier I mines are not listed in full. These need to be specified clearly.

#### **XIII. The Rules Do Not Provide For Needed Research**

There are substantial research needs associated with mercury air emissions in Nevada, including an ability to better understand the fate and transport of mercury in Nevada, mercury content in fish and other wildlife, the relative importance of anthropogenic vs natural sources of mercury, distribution of mercury around current and historic mines and health impacts of mercury. All of these are “Nevada” issues and should be funded by sources of mercury in Nevada.

*Recommendation:* The rules should incorporate a fee structure to fund a research program. Priority research projects should be identified by a committee made up of representatives of state and federal agencies, the mining industry, the environmental community and the research community.

#### **XIV. What To Do If Application Is Not Complete?**

Several sections of these proposed rules (such as Sec 26.1 and 26.2) provide that in the event that an application is not complete Director “shall determine that the application is incomplete and return the application to the applicant.” However, the rules fail to specify any timelines for the applicant to re-submit a complete application. Thus, an applicant has an incomplete application returned by NDEP seems to fall through the cracks in this program. The rules do not outline how NDEP should proceed.

*Recommendation:* The rules need to clearly state that an applicant must re-submit a complete application within 15 days. Failure to submit a complete application should result in the immediate closure of a facility.