

NOTE: This document reflects certain updates since the original version was made public on November 17, 2005. Additions to the program are reflected in **bold underlined** text.

PROPOSED

NEVADA MERCURY AIR EMISSIONS CONTROL PROGRAM

I. INTRODUCTION

Building on the successes of the Voluntary Mercury Reduction Program (“VMRP”), the Nevada Division of Environmental Protection (“NDEP”) will be implementing the Nevada Mercury Air Emissions Control Program (“NMCP”). The goals of the NMCP are (i) enhancing the program’s monitoring, testing, recordkeeping and reporting requirements, (ii) expanding coverage of the program to all precious metal mining operations, and (iii) implementing improved and additional controls, through a regulatory program.

II. BACKGROUND

In May 2000, the EPA published the Toxic Release Inventory (“TRI”) report data for the reporting year of 1998. While the mercury emissions from Nevada precious metals mining companies were below Clean Air Act major source thresholds, NDEP and the companies nevertheless determined that their mercury emissions could and should be reduced. Within less than two years, through the joint efforts of NDEP, EPA and four mining companies, the VMRP was implemented. The VMRP resulted in significant and rapid mercury reductions from thermal processes. By all measures the VMRP met or exceeded its goals. It is the opinion of NDEP, EPA and the companies that participated in the VMRP that this success was due in large part to the voluntary—as opposed to regulatory—nature of the program. Resources were devoted to quickly implementing effective control technologies and reduction techniques for each unique facility, instead of a protracted rulemaking process.

As stated in the VMRP: “[T]he NDEP and EPA will assess the progress being made to achieve significant and permanent control of mercury air emissions under the VMRP on an annual basis between 2002 and 2005.” Based on these annual assessments, and notwithstanding the success of the VMRP, the NDEP believes that additional opportunities for mercury controls and reductions are possible. This will be accomplished through enhancements to the program, consistent with the above-stated goals of the NMCP.

III. STATUTORY AND REGULATORY AUTHORITY

The NDEP has broad authority to establish air pollution emissions control requirements. No statutory changes are necessary to enable the Division to regulate mercury. To establish control requirements for processes that emit mercury located within the precious metals mining industry, the NDEP will rely on the statutory and regulatory authority shown below:

A. Statutory Authority

1. Nevada Revised Statutes (NRS) 445B.100.2 provides in pertinent part:

It is the intent of NRS 445B.100 to 445B.640, inclusive, to:

(a) Require the use of reasonably available methods to prevent, reduce or control air pollution throughout the State of Nevada....

2. NRS 445B.235 provides:

In carrying out the purposes of NRS 445B.100 to 445B.640, inclusive, the department may, if it considers it necessary or appropriate:

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4. Develop measures for control of air pollution originating in the state.

3. Pursuant to NRS 445B.100 and 445B.235, the NDEP has determined that it is necessary and appropriate to develop measures for the control of mercury emissions from thermal units that emit mercury¹ located at metals mining operations in Nevada. While significant mercury emissions reductions have been achieved through the implementation of the VMRP, mercury emissions controls may be necessary for other thermal units within the precious metal mining sector that emit mercury. Therefore, this document will focus on development of regulatory requirements for determining program applicability; the subsequent control selection; installation, operation and maintenance, testing and sampling, and monitoring of those controls; and, recordkeeping.

B. Regulatory Structure

NDEP will amend the Nevada Administrative Code (NAC) as necessary to facilitate implementation of the NMCP, including adoption of the mercury control permit program described below. Such NAC amendments are hereafter referred to as “the Regulations” in this document.

IV. PROGRAM DESCRIPTION

NDEP will require mercury air emission controls at precious metal mining facilities through a new mercury air emissions control permitting program as an adjunct to NDEP’s current Operating Permit to Construct program. The new permit requirement will apply to precious metals mining facilities that process mercury-containing ore and use thermal treatment processes that have the potential for liberating mercury into the atmosphere.

The initial phase of the permit program will provide for establishment of Presumptive Nevada Maximum Achievable Control Technology (MACT) for existing mercury controls at

¹ This program does not address particulate matter emissions associated with non-thermal dust generating activities (e.g., crushers and surface disturbance activities). Such emissions are addressed through the use of best practical methods and fugitive dust control plans pursuant to source specific permit requirements and NAC 445B.22037.

current VMRP facilities, as well as testing, sampling, operation, maintenance, monitoring, recordkeeping and reporting as permit requirements to ensure the ongoing enforceability and effectiveness of such controls, all subject to public review (Phase 1). The establishment of existing mercury controls as Presumptive Nevada MACT is based on the prior VMRP determinations as well as on the EPA MACT Partnership Program. EPA explains that Presumptive MACT is “not an emission standard,” but instead “serves as a statement of current knowledge of MACT and a basis for a decision on how to develop the emission standard for the source category involved.” 60 Fed. Reg. 16090 (3/29/95).

After a public review process, NDEP will make a determination of an enforceable final Nevada MACT standard for each subject thermal unit that emits mercury with appropriate revisions to the facility’s mercury permit to ensure such standard is both legally and practically enforceable (Phase 2). The final terms and conditions of the mercury permit may then be incorporated into the facility’s operating permit.

All precious metals mining facilities will complete a questionnaire. All subject units at non-VMRP facilities (Tier 2) will proceed through a mercury permit process similar to the VMRP (Tier 1) process described below. In addition, any owner or operator may elect to install mercury controls prior to completion of the Nevada MACT process as an early reduction and, subject to NDEP review and approval, such owner or operator will have an extension of time to install Nevada MACT, if such Nevada MACT is determined to be more stringent than the mercury controls the owner or operator installed as part of this program. Units that do not have the potential to emit mercury through thermal processes shall be considered Tier 3 units. NDEP may also determine that a unit’s emissions of mercury are de minimis and that it is, therefore, entitled to Tier 3 status. Tier 3 units will be required to file an annual certification that demonstrates that such units continue to be entitled to Tier 3 status in accordance with the above criteria.

V. PROGRAM REQUIREMENTS

A. Three-Tiered Classification.

As described briefly above, the NMCP will consist of a three-tiered program. Each Tier will have its own specific set of requirements.

1. Tier 1 (VMRP Units)

a. Applicability. Those units currently included in the VMRP are designated Tier 1. The table in Appendix 1 lists the mercury emission units for each facility that participated in the VMRP, and the mercury controls associated with each unit. Appendix 1 also includes a flow diagram for each unit-specific process and control. While the focus of the NMCP is on mercury-specific controls such as carbon filters and mercury scrubbers, controls originally designed to control other particulate and gaseous emissions such as baghouses and SO₂ scrubbers also help control mercury emissions from the precious metal mining processes. For this reason, the Appendix 1 list includes the series of emission controls at each thermal unit, some of which are mercury specific controls and others which are more general but do assist in reducing overall mercury emissions.

Appendix 2 describes the testing, monitoring, recordkeeping and reporting requirements for each Tier 1 unit.

b. Questionnaire. The owner or operators of Tier 1 units will provide NDEP with information as set forth in the questionnaire attached as Appendix 3. Required information includes, but is not limited to, ore mercury content, mercury emission estimates for each thermal unit, any mercury controls that are currently in place, analyses of mercury emission reductions achieved by the existing controls and any plans to install or implement new controls. NDEP will mail out the questionnaire to all owners and operators of Tier 1 units by January 15, 2006. Responses will be due on or before March 15, 2006.

c. Phase 1 Permit Application and Source Testing. Owners or operators of Tier 1 units shall each submit to NDEP an application for a mercury permit within 90 days of the effective date of the Regulations. The application shall include, but is not limited to, identification of the thermal units that emit mercury, a listing of Presumptive Nevada MACT controls in accordance with Appendix 1, and a monitoring plan including all items identified in Appendix 2 for each applicable emission unit, **including co-product mercury reporting**. Specifically, the monitoring plan shall include a schedule for source testing the emissions units in accordance with an approved monitoring protocol. The owner or operators of Tier 1 units will begin source testing as soon as reasonably practicable. The first series of source tests for all Tier 1 units is expected to be completed by December 31, 2006². This initial series of source tests shall be conducted using an approved test method that allows for speciation of the mercury emissions – for example, the Ontario Hydro Method.

d. Early Reduction. Owner or operators may set forth a schedule for installing additional controls and a demonstration that such controls constitute the best controls available for mercury emissions for a specific thermal unit, in accordance with the federal Clean Air Act Section 112(d) principles set forth in Paragraph V below and a demonstration that such control or series of controls will reduce mercury emissions. If NDEP agrees that such controls constitute the best controls available, upon issuance of the mercury permit and confirmed installation of the controls, the affected unit shall be granted a 3-year deferral from the requirement to implement the Nevada MACT.

e. Permit Issuance and Monitoring Plan. NDEP shall review Tier 1 mercury permit applications for completeness within 30 days of receipt. If NDEP requests additional information, the facility shall respond within the timeframes established in the permit regulations. Consistent with prior determinations made in the VMRP and with EPA's MACT Partnership program, the currently installed mercury controls listed in Appendix 1 are deemed "Presumptive Nevada MACT". NDEP shall review the complete application and issue a mercury permit no later than 16 months from the effective date of the Regulations, requiring continued operation of the Presumptive Nevada MACT

² Because of limitations on availability of experienced source testers, the new source testing required on the 24 emission units at the Tier 1 facilities will need to be phased in during the first year of the program. It is expected that some Tier 1 facilities will be able to complete the initial source testing by June 30, 2006.

controls and compliance with the final monitoring plan. Upon submission of the mercury permit application and prior to NDEP issuance of the mercury permit, each Tier 1 unit will be operated in compliance with the monitoring plan in its application.

f. Phase 2 Permit Application and Nevada MACT Analysis. The Phase 2 monitoring plan submitted as part of the Nevada MACT application will include additional required source testing, operation and maintenance procedures, emissions control monitoring and recordkeeping, and reporting of mercury emissions **and co-product mercury** on an annual basis. The owner or operator of a Tier 1 unit will submit as part of its application a Nevada MACT analysis and a Phase 2 monitoring plan for each thermal unit within 21 months of the effective date of the Regulations. The Nevada MACT analysis will include an appropriate mercury emission standard or limitation for each emission unit, unless NDEP determines that technological or economic limitations on the application of measurement methodology to a particular emission unit would make the imposition of an emission standard infeasible. In such case, NDEP may prescribe a design, equipment, work practice, operational standard or combination thereof to satisfy the requirement of Nevada MACT.

g. Nevada MACT Determination. NDEP will review the Nevada MACT analysis for completeness within 30 days of receipt. If NDEP requests additional information, the facility will provide such additional information within the timeframes established in the permit regulations. NDEP will consider the Nevada MACT submission and the principles from Section 112(d) of the federal Clean Air Act as set forth in Paragraph V below, and will provide a proposed permit which includes Nevada MACT for each of the Tier 1 units between 21 and 38 months of the effective date of the Regulations. The proposed permits shall be made available for public review and comment. NDEP will make a final determination of Nevada MACT for each Tier 1 unit within 17 months of its receipt of the Nevada MACT analysis submittal. The owner or operator's mercury permit shall be revised to incorporate the final Nevada MACT determination for each affected emissions unit.

h. Title V Operating Permit. Upon final determination of Nevada MACT and implementation of any required changes in controls pursuant to Paragraph VI below, the mercury permit requirements may be incorporated into the facility's **Title V** operating permit in accordance with a schedule to include new applicable requirements **as State only requirements.**

2. Tier 2 (All Other Units)

a. Applicability. All other Nevada metals mining operations will provide NDEP with information as set forth in the questionnaire attached as Appendix 3. Required information includes, but is not limited to, ore mercury content, mercury emission estimates for each thermal unit, any mercury controls that are currently in place, analyses of mercury emission reductions achieved by the existing controls and any plans to install or implement new controls. NDEP will mail out the questionnaire to all owners and operators by January 15, 2006. Responses will be due on or before March 15, 2006.

b. Potential Tier 3 Status.

(i) Owners or operators that have returned the questionnaire and demonstrated that they do not use thermal processes that could liberate mercury shall be designated Tier 3. If NDEP disagrees with the facility's demonstration, it shall so notify the facility and Tier 2 requirements shall apply.

(ii) An owner or operator of a Tier 2 facility may petition NDEP (either through the application or other written submission) for Tier 3 status based on their mercury emissions and with due regard for the Section 112(d) principles set forth in Paragraph V below as to whether additional mercury controls should be required for a de minimis unit. Such owner or operators may demonstrate that they have de minimis mercury emissions due to (1) limited potential to emit mercury emissions from thermal processes, without use of add-on controls, (2) use of work practice standards to limit mercury emissions, and/or (3) other proposed permit conditions that limit mercury emissions. NDEP shall review such petition, request any additional information it needs, and make a preliminary determination within 60 days of the request. The preliminary determination will be made available for public review and comment. Within 90 days of the date of notice the NDEP will make a final determination on the request.

c. Phase 1 Permit Application. Owners or operators of Tier 2 units shall each submit to NDEP an application for a mercury permit within 180 days of the effective date of the Regulations. The application shall include, but is not limited to, identification of the thermal units that emit mercury, a listing of existing mercury controls and any planned new controls, and a monitoring plan including all items identified in Appendix 2 for the applicable emission units, **including co-product mercury reporting.** No new controls will be required at this stage, pending completion of the Nevada MACT review process.

d. Early Reduction. Owner or operators may set forth a schedule for installing additional controls and a demonstration that such controls constitute the best controls available for mercury emissions for a specific thermal unit, in accordance with the federal Clean Air Act Section 112(d) principles set forth in Paragraph V below and a demonstration that such control or series of controls will reduce mercury emissions. If NDEP agrees that such controls constitute the best controls available, upon issuance of the mercury permit and confirmed installation of the controls, the affected unit shall be granted a 3-year deferral from the requirement to implement the Nevada MACT.

e. Permit Issuance and Monitoring Plan. NDEP shall review Tier 2 mercury permit applications for completeness within 30 days of receipt. If NDEP requests additional information, the facility shall respond within the timeframes established in the NAC permit regulations. NDEP shall review the complete application and issue a mercury permit no later than 19 months from the effective date of the Regulations. The permit shall require continued operation of any existing mercury controls and compliance with the monitoring plan. The NDEP will determine appropriate testing, monitoring, recordkeeping and reporting requirements for the unit. The determination will be made

with reference to the monitoring plan provided, and with reference to the requirements set forth in Appendix 2. The NDEP will consider the level of mercury emissions and the availability of reliable parametric monitoring.

f. Phase 2 Nevada MACT Permit Application-Nevada MACT Analysis. The Phase 2 monitoring plan submitted as part of the Nevada MACT application will include additional required source testing, operation and maintenance procedures, emissions control monitoring and recordkeeping, and reporting of mercury emissions **and co-product mercury** on an annual basis. The owner or operator of a Tier 2 unit will submit as part of their application a Nevada MACT analysis and a Phase 2 monitoring plan for each thermal unit within 21 months of the effective date of the Regulations. The Nevada MACT analysis will include an appropriate mercury emission standard or limitation for each emission unit, unless NDEP determines that technological or economic limitations on the application of measurement methodology to a particular emission unit would make the imposition of an emission standard infeasible. In such case, NDEP may prescribe a design, equipment, work practice, operational standard or combination thereof to satisfy the requirement of Nevada MACT.

g. Nevada MACT Determination. Determination of a Tier 2 Nevada MACT will follow the same procedures and guidelines established above in V.A.1.g. for Tier 1 units.

h. Title V Operating Permit. Upon final determination of Nevada MACT and implementation of any required changes in controls pursuant to Paragraph VI below, the mercury permit and monitoring plan may be incorporated into the facility's Title V operating permit in accordance with a schedule to include new applicable requirements **as State only requirements.**

3. Tier 3 (Units with De Minimis or No Mercury Emissions)

The owner or operator of each Tier 3 unit shall certify to NDEP annually that it remains entitled to Tier 3 status in accordance with the above criteria, including any de minimis level determined by NDEP. In addition, those Tier 3 facilities that have been determined to have de minimis emissions in accordance with paragraph 2.b.ii. above, must revise their existing operating permit to require such standards or limits.

4. New Units and Modifications to Existing Units

The owner or operator of a proposed new thermal unit, or a proposed modification to an existing thermal unit, shall submit an application in accordance with the Phase 2 requirements described in 2.f. above.

B. Emissions Calculations.

For purposes of the questionnaire and ongoing Tier 3 certification of any NDEP-determined de minimis mercury emission levels, mercury emissions may be determined in the following ways and in the following order of preference:

1. Existing direct testing and measurement data.
2. Engineering calculations that take into account the average mercury content of the ore processed, the amount of ore processed and the potential for mercury releases from the specific processes utilized to recover metals.
3. Any other means that NDEP approves.

V. **PRINCIPLES OF NEVADA MACT DETERMINATION**

NDEP will use the following principles of “MACT,” **consistent with** Section 112(d) of the Clean Air Act. These principles include the following:

A. Nevada MACT is defined as a mercury standard based on the maximum degree of reduction in mercury emissions that are achievable taking into consideration the cost of achieving such reduction, the adverse impact on other air pollutants being emitted or the generation of waste (e.g., scrubber sludge) resulting from the control, **any non-air quality health and environmental impacts** and energy requirements. Such mercury controls will include the application of measures, processes, methods, systems or techniques including, but not limited to, measures which:

- Reduce the volume of, or eliminate emissions of, such pollutants through process changes,³ substitution of materials or other modifications,
- Enclose systems or processes to eliminate emissions,
- Collect, capture or treat such pollutants when released from a point source,
- Are design, equipment, work practice, or operational standards (including requirements for operator training or certification), or
- Are a combination of the above.

B. Nevada MACT is based on each discrete emission unit at a facility. The Nevada MACT requirements for existing units might differ between facilities based on a number of criteria including the age of a unit, the remaining operating life of the facility or unit, and differences in the configuration of emissions units.

C. For new emission units, Nevada MACT is at minimum the emission control that is achieved in practice by the best controlled similar emission unit within the metals mining industry.

D. A determination of similar emission units may take into account ore mercury concentration, size of process units and other relevant factors.

³ Such process changes include the use of chemicals in the process to remove mercury from process solutions such that the mercury no longer reports to devices that are sources of mercury air emissions.

VI. INSTALLATION SCHEDULE OF NEVADA MACT

Those units that NDEP determines require a new or revised control under the Nevada MACT, shall install such new controls no later than 24 months after final permit issuance. A schedule for installation within a shorter period will be negotiated between the NDEP and the applicant and established as a condition of the permit whenever appropriate and practical.