



BUREAU OF AIR POLLUTION CONTROL

901 South Stewart Street, Suite 4001 • Carson City, NV 89701-5249
phone: 775-687-9350 • www.ndep.nv.gov/bapc • fax: 775-687-6396

Facility ID No. A1723

Permit No. AP1041-3520

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: MT. HAMILTON LLC (HEREINAFTER REFERRED TO AS *THE PERMITTEE*)

Mailing Address: 295A AULTMAN STREET, ELY, NEVADA 89301

General Facility Location: FROM US HIGHWAY 50, TRAVEL SOUTH ON COUNTY ROAD 5 ON TO TWO ROADS THAT SERVE THE PROJECT AREA. LOCATED IN SECTIONS 19 AND 20 OF T 16N, R 57E, MDB&M

Thermal Unit List:

A. System 06 - Retort

TU	4.001	Retort, manufactured by Lochhead Haggerty, 5184-MR-1
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B. System 07 – ADR Plant

TU	4.002	Carbon Kiln, manufactured by Kemix, 5184-KN-01
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TU	4.003	Smelting Furnace, manufactured by Inductotherm, 5184-FM-01
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TU	4.004	Electro Winning Cell #1
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TU	4.005	Electro Winning Cell #2
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TU	4.006	Electro Winning Cell #3
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TU	4.007	Pregnant Tank
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TU	4.008	Barren Tank
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Issued to: Mt. Hamilton LLC

Section I. General Conditions

The Permittee must comply with, but is not limited to, all conditions of Nevada Administrative Code (NAC) 445B.3611-3689 “*Nevada Mercury Air Emissions Control Program*”, inclusive.

A. Records Retention NAC 445B.3679.2(a)

The Permittee of a Mercury Operating Permit to Construct shall retain records of all required monitoring data and support information for (5) years after the date of the sample collection, measurement, report or analysis. Supporting information includes, without limitation, all records regarding calibration and maintenance of the monitoring equipment and all original strip-chart recordings for continuous monitoring instrumentation.

B. Severability NAC 445B.3365.2(b)

Each of the conditions and requirements of the Mercury Operating Permit to Construct is severable and, if any are held invalid, the remaining conditions and requirements continue in effect.

C. Compliance/Noncompliance NAC 445B.3679.2(c)

The Permittee must comply with all conditions of the Mercury Operating Permit to Construct. Any noncompliance constitutes a violation and is grounds for:

1. An action for noncompliance;
2. The revoking and reissuing, or the terminating of the Mercury Operating Permit to Construct by the Director; or
3. The reopening or revising of the Mercury Operating Permit to Construct by the holder of the Mercury Operating Permit to Construct as directed by the Director.

D. Defense to Noncompliance NAC 445B.3679.2(d)

The need to halt or reduce activity to maintain compliance with the conditions of the Mercury Operating Permit to Construct is not a defense to noncompliance with any conditions of the Mercury Operating Permit to Construct.

E. Cause NAC 445B.3679.2(e)

The Director may revise, revoke and reissue, reopen and revise, or terminate the Mercury Operating Permit to Construct for cause.

F. Property Rights/Exclusive Privilege NAC 445B.3679.2(f)

The Mercury Operating Permit to Construct does not convey any property rights or any exclusive privilege.

G. Information Request from Director NAC 445B.3679.2(g)

The Permittee shall provide the Director, in writing and within a reasonable time, with any information that the Director requests to determine whether cause exists for revoking or terminating the Mercury Operating Permit to Construct or to determine compliance with the conditions of this Mercury Operating Permit to Construct.

H. Right to Entry NAC 445B.3679.2(h)

The Permittee shall allow the Director or any authorized representative of the Director, upon the presentation of credentials, to:

1. Enter upon the premises of *the Permittee* where:
 - a. The thermal unit that emits mercury is located;
 - b. Activity related to mercury emissions is conducted; or
 - c. Records are kept pursuant to the conditions of the Mercury Operating Permit to Construct.
2. Have access to and copy, during normal business hours, any records that are kept pursuant to the conditions of the Mercury Operating Permit to Construct;
3. Inspect, at reasonable times, any facilities, practices, operations, or equipment, including any equipment for monitoring or controlling air pollution, that are regulated or required pursuant to the Mercury Operating Permit to Construct; and
4. Sample or monitor, at reasonable times, substances or parameters to determine compliance with the conditions of the Mercury Operating Permit to Construct or applicable requirements.



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Section I. General Conditions (continued)

I. Certify True and Accurate NAC 445B.3679.2(i)

A responsible official of the stationary source shall certify that, based on information and belief formed after reasonable inquiry, the statements made in any document required to be submitted by any condition of the Mercury Operating Permit to Construct are true, accurate and complete.

J. Yearly Reporting NAC 445B.3679.3(b)(c)(d)

The Permittee will submit yearly reports including, but not limited to, throughput, production, fuel consumption, hours of operation, emissions and mercury co-product. These reports will be submitted on the form provided by the Bureau of Air Pollution Control for all emission units/systems specified on the form. The completed form must be submitted to the Bureau of Air Pollution Control no later than March 1 annually for the preceding calendar year, unless otherwise approved by the Bureau of Air Pollution Control.

K. Facilities Operation NAC 445B.227

The Permittee may not:

1. Operate a stationary source of air pollution unless the control equipment for air pollution that is required by applicable requirements or conditions of the Mercury Operating Permit to Construct are installed and operating.
2. Disconnect, alter, modify or remove any of the control equipment for air pollution or modify any procedure required by an applicable requirement or condition of the Mercury Operating Permit to Construct.

L. Excess Emissions NAC 445B.232

1. Scheduled maintenance or testing or scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive, must be approved by the Director and performed during a time designated by the Director as being favorable for atmospheric ventilation.
2. The Director must be notified in writing of the time and expected duration at least 24 hours in advance of any scheduled maintenance which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
3. The Director must be notified in writing or by telephone of the time and expected duration at least 24 hours in advance of any scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
4. The Director must be notified of any excess emissions within 24 hours after any malfunction or upset of the process equipment or equipment for controlling pollution or during startup or shutdown of such equipment. E-mail to: eenotify@ndep.nv.gov.
5. *The Permittee*, as the owner or operator of an affected facility, shall provide the Director, within 15 days after any malfunction, upset, startup, shutdown, or human error which results in excess emissions, sufficient information to enable the Director to determine the seriousness of the excess emissions. The information must include at least the following:
 - a. The identity of the stack or other point of emission, or both, where the excess emissions occurred.
 - b. The estimated magnitude of the excess emissions expressed in units of the applicable limitation on emission and the operating data and methods used in estimating the magnitude of the excess emissions.
 - c. The time and duration of the excess emissions.
 - d. The identity of the equipment causing the excess emissions.
 - e. If the excess emissions were the result of a malfunction, the steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunction.
 - f. The steps taken to limit the excess emissions.
 - g. Documentation that the equipment for controlling air pollution, process equipment, or processes were at all times maintained and operated, to a maximum extent practicable, in a manner consistent with good practice for minimizing emissions.

Section I. General Conditions (continued)



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M. Construction Requirements NAC 445B.250

The Permittee shall provide the Director written notification of:

1. The date that construction or reconstruction of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply to mass-produced facilities which are purchased in completed form.
2. The anticipated date of initial startup of an affected facility, postmarked not more than 60 days and not less than 30 days prior to such date.
3. The actual date of initial startup of an affected facility, postmarked within 15 days after such date.

N. Testing and Sampling NAC 445B.252

1. To determine compliance with NAC 445B.001 to 445B.3689, inclusive, before the approval or the continuance of an operating permit or similar class of permits, the director may either conduct or order the owner of any stationary source to conduct or have conducted such testing and sampling as the director determines necessary. Testing and sampling or either of them must be conducted and the results submitted to the director within 60 days after achieving the maximum rate of production at which the affected facility will be operated, but not later than 180 days after initial startup of the facility and at such times as may be required by the director.
2. Tests of performance must be conducted and data reduced in accordance with the methods and procedures of the test contained in each applicable subsection of this section unless the director:
 - a. Specifies or approves, in specific cases, the use of a method of reference with minor changes in methodology;
 - b. Approves the use of an equivalent method;
 - c. Approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific stationary source is in compliance; or
 - d. Waives the requirement for tests of performance because the owner or operator of a stationary source has demonstrated by other means to the director's satisfaction that the affected facility is in compliance with the standard.
3. Tests of performance must be conducted under such conditions as the director specifies to the operator of the plant based on representative performance of the affected facility. The owner or operator shall make available to the director such records as may be necessary to determine the conditions of the performance test. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a performance test unless otherwise specified in the applicable standard.
4. Permittee shall give notice to the director 30 days before the test of performance to allow the director to have an observer present. A written testing procedure for the test of performance must be submitted to the director at least 30 days before the test of performance to allow the director to review the proposed testing procedures.
5. Each test of performance must consist of at least three separate runs using the applicable method for that test. Each run must be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the runs apply. In the event of forced shutdown, failure of an irreplaceable portion of the sampling train, extreme meteorological conditions or other circumstances with less than three valid samples being obtained, compliance may be determined using the arithmetic mean of the results of the other two runs upon the director's approval.
6. All testing and sampling will be performed in accordance with recognized methods and as specified by the director.
7. The cost of all testing and sampling and the cost of all sampling holes, scaffolding, electric power and other pertinent allied facilities as may be required and specified in writing by the director must be provided and paid for by the owner of the stationary source.
8. All information and analytical results of testing and sampling must be certified as to their truth and accuracy and as to their compliance with all provisions of NAC 445B.001 to 445B.3689, inclusive, and copies of these results must be provided to the director no later than 60 days after the testing or sampling, or both.

O. SIP Article 2.5.4 Federally Enforceable SIP Requirement

Breakdown or upset, determined by the Director to be unavoidable and not the result of careless or marginal operations, shall not be considered a violation of these regulations.

Section I. General Conditions (continued)



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P. Expiration and Extension NAC 445B.3687

1. If construction will occur in one phase, a mercury operating permit to construct for a new or modified thermal unit that emits mercury expires if construction is not commenced within 18 months after the date of issuance thereof or construction of the thermal unit that emits mercury is delayed for 18 months after initiated. The Director may extend the date on which the construction may be commenced upon a showing that the extension is justified.
2. If construction will occur in more than one phase, the projected date of the commencement of construction of each phase of construction must be approved by the Director. A mercury operating permit to construct expires if the initial phase of construction is not commenced within 18 months after the projected date of the commencement of construction approved by the Director. The Director may extend only the date on which the initial phase of construction may be commenced upon a showing that the extension is justified.

Q. Nevada Mercury Control Program Implementation NAC 445B.3679

1. The NvMACT for **TU4.001 through TU4.008**, each, must be implemented not later than 24 months after the issuance date of this Mercury operating permit to construct (NAC 445B.3679.3(a)(2)(I)).
 - a. The issuance date for **TU4.001 through TU4.008** is **April XX, 2015**.
2. Construction on **Systems 1 and 2** must commence within 18 months after the issuance date of this permit. The issuance date for **Systems 1 and 2** is **April XX, 2015**. The NvMACT for **Systems 1 and 2**, each, must be implemented upon startup.
3. The *Permittee* shall provide the Director written notification of:
 - a. The date of implementation of NvMACT for **Systems 1 and 2**, each, pursuant to NAC 445B.3679.3(a)(2)(I) postmarked within 15 days after such date (NAC 445B.3679.2(g)).

R. Annual Reporting NAC 445B.3679

The Permittee shall:

1. Report mercury co-product on an annual basis (NAC 445B.3679.3(d)).
2. Report the level of mercury emissions on an annual basis which must be based on mercury emissions test data (NAC 445B.3679.3(c)).

******* End of General Conditions *******



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Section II. Specific Operating Conditions

A. Thermal Units TU4.001 Location North 4343.942 km, East 622.484 km, UTM (Zone 11, NAD 83)

A. System 06 - Retort		
TU	4.001	Retort, manufactured by Lochhead Haggerty, 5184-MR-1

1. Air Pollution Control Equipment

- a. Emissions from TU4.001 shall be ducted to a control system with 100% capture consisting of:
 - (1) **Two Mercury Condensers in Series (MC-001 and MC-002)** using chilled water
 - (2) **Condensation Vessel (CV-001)**
 - (3) **After Cooler with Mist Eliminator (AC-001)**
 - (4) **Two Sulfur Impregnated Carbon Filter Columns in Series (CF-001 and CF-002)**
- b. Descriptive Stack Parameters
 - (1) Height: 50.92 feet
 - (2) Diameter: 0.17 feet
 - (3) Temperature: 90° Fahrenheit
 - (4) Exhaust gases from TU4.001 shall have a maximum volume flow rate of approximately 37 dry standard cubic feet per minute (DSCFM).

2. Construction Requirements (NAC 445B.250)

- The *Permittee* shall provide the Director written notification of:
- a. The date that construction of TU4.001 is commenced postmarked no later than 30 days after such date. This requirement shall not apply to mass-produced facilities which are purchased in completed form.
 - b. The anticipated date of initial startup of TU4.001, postmarked not more than 60 days nor less than 30 days prior to such date.
 - c. The actual date of initial startup of TU4.001, postmarked within 15 days after such date.

3. Operating Requirements (NAC 445B.3679.3)

- a. Limitations of Operation
 - (1) The maximum allowable throughput of **precious metal laden material** for TU4.001 will not exceed 0.56 tons of **precious metal laden material** per batch. Precious metal laden material is defined by
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electro winning, the Merrill-Crowe process, flotation and gravity separation processes, and other gold concentration or precipitation processes.
 - (b) Material collected from the wash-down of any equipment or surfaces contacted with precious metals that have been concentrated through the various concentration methods employed by precious metal mines.
 - (2) Mercury emissions from TU4.001 shall not exceed 1.0×10^{-4} grains per dry standard cubic foot (gr/dscf).
 - (3) Hours
 - (a) TU4.001 may operate a total of **8,760** hours per calendar year.
- b. Work Practice Standards
 - (1) Retort (TU4.001)
 - (a) During heating, the retort will be placed under negative gauge pressure between 100 and 200 millimeters of mercury (mmHg).
 - (b) TU4.001 shall automatically shut off, per interlock, if the negative gauge pressure falls outside the 100 to 200 mmHg operating range.



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Section II. Specific Operating Conditions (continued)

A. Thermal Units TU4.001 (continued)

3. Operating Requirements (continued)

b. Work Practice Standards (continued)

(2) Mercury Condenser and Chiller (MC-001 and MC-002)

- (a) The exhaust gas temperature at the discharge of the mercury condensers shall be maintained between 50 and 130° Fahrenheit (°F)
- (b) Chiller water temperature will be maintained between 40 and 55° F.
- (c) **TU4.001** shall automatically alarm and shut off, per interlock, if water flow to **MC-001** and **MC-002** is not present.
- (d) Condensed mercury, collected from the condensers, shall be collected monthly.
- (e) Vacuum pressure, measured at the collector between the condensers, will be maintained at or above 50 mmHg.
- (f) **TU4.001** shall automatically shut off, per interlock, if vacuum pressure at the collector falls below 50 mmHg.

(3) Carbon Filter Columns (CF-001 and CF-002)

- (a) The carbon filter columns **CF-001** and **CF-002** will contain no less than **30** pounds of sulfur-impregnated carbon, each.
- (b) The differential pressure across **CF-001** and **CF-002** shall not exceed **XXX** inches water column.
- (c) Sample and replace the carbon in **CF-001** and **CF-002** according to the following schedule:
Sample the carbon at the outlet of the carbon filter **CF-002** and record the depth of the sample probe within **90** days after replacement of the carbon. The sampled carbon will be analyzed for mercury and the average percentage of mercury, by weight, shall be calculated. The loading capacity of the sulfur-impregnated carbon is **20%** by weight. A sample of carbon will be analyzed quarterly until **50%** of the carbon loading capacity is reached. Upon reaching **50%** of the carbon loading capacity, the sampling of carbon will occur monthly until **90%** of the carbon loading capacity is reached. The carbon in carbon filters **CF-001** and **CF-002** will be replaced no later than **30** days after the sample taken from **CF-002** reaching **90%** of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - (i) EPA Method 6020 – Inductively Coupled Plasma-Mass Spectrometry;
 - (ii) EPA Method 7471B – Mercury in Solid of Semi-solid Waste (Manual Cold Vapor Technique); or
 - (iii) An alternative test method as approved by the Director.
- (d) Any sulfur-impregnated carbon replaced in **CF-001** and **CF-002** shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent, or better performing carbon.
- (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in **CF-001** and **CF-002** shall be kept on site.

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3)

a. Compliance Testing

- (1) Within 180 days of the notification of initial startup of **TU4.001** as required in A.2.a through c, of this section, and annually thereafter, *the Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **TU4.001** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume.
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from **System 06**. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director).
- (3) The Permittee shall comply with the requirements in Section I.N of this operating permit for all compliance testing.

Section II. Specific Operating Conditions (continued)



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A. Thermal Units TU4.001 (continued)

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3) (continued)

b. Monitoring

The Permittee, upon issuance date of this operating permit, shall:

- (1) Monitor the daily batch weight of **precious metal laden material**, in tons, for each batch.
- (2) Monitor the daily hours for each batch, during each day of operation.
- (3) Install, operate, calibrate, and maintain a negative gauge pressure interlock which will shut off the retort heating element if retort gauge pressure falls outside the 100 to 200 mmHg operating range.
- (4) Install, operate, calibrate, and maintain a water flow rate interlock which will shut off the retort heating element if water flow to the condensers is not present.
- (5) Install, operate, calibrate, and maintain a vacuum pressure interlock which will shut off the retort heating element if vacuum pressure at the collector falls below 50 mmHg.
- (6) Monitor the negative gauge pressure for **TU4.001** continuously during operation. The hourly average pressure readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (7) Monitor the vacuum pressure at the collector continuously during operation. The hourly average pressure readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (8) Monitor the exhaust temperature at the discharge of the condensers continuously during operation. The hourly average exhaust temperature readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (9) Monitor chiller water temperature continuously during operation. The hourly average temperature readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (10) Monitor the amount of mercury, in pounds, drained from **MC-001** and **MC-002**, monthly.
- (11) Monitor the differential pressure across **CF-001** and **CF-002** continuously, during operation, in inches water column. The average hourly differential pressure readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (12) Monitor the percentage of mercury, by weight, on the carbon in carbon filter **CF-002** quarterly until reaching 50% of the loading capacity, and then monthly until reaching 90% of the loading capacity.

c. Recordkeeping

The required monitoring established in Section A.4.b above, will be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total daily batch weight **precious metal laden material**, per batch, in tons for the corresponding date.
- (3) The total daily operating hours per batch, for the corresponding date.
- (4) The negative gauge pressure for **TU4.001**, based on a one-hour period, for the corresponding date.
- (5) The vacuum pressure at the collector, based on a one-hour period, for the corresponding date.
- (6) The discharge exhaust temperature from the condensers, based on a one-hour period, for the corresponding date.
- (7) Chiller water temperature, based on a one-hour period, for the corresponding date.
- (8) The amount of mercury drained **MC-001** and **MC-002**, for the corresponding date.
- (9) The differential pressure across **CF-001** and **CF-002**, based on a one-hour period, for the corresponding date.
- (10) The percentage mercury loading by weight sampled from **CF-002**, for the corresponding date.
- (11) The sample location from **CF-002**, for the corresponding date.
- (12) The amount of sulfur impregnated carbon replaced in **CF-001** and **CF-002**, for the corresponding date.
- (13) The manufacturer and specifications of the sulfur impregnated carbon will be retained on site for inspection.

Section II. Specific Operating Conditions (continued)



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A. Thermal Units TU4.001 (continued)

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3) (continued)

d. Reporting

- (1) The date, time and description of any interlock event and corresponding corrective action.
- (2) *The Permittee* will promptly report to the Director any emissions and or throughput exceedances from **System 06**. The report to the Director will include probable cause and any action taken to correct the exceedance. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L of this operating permit.

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Section II. Specific Operating Conditions

B. Thermal Units TU4.002 through TU4.008 Location North 4343.914 km, East 622.476 km, UTM (Zone 11, NAD 83)

System 07 – ADR Plant		
TU	4.002	Carbon Kiln, manufactured by Kemix, 5184-KN-01
TU	4.003	Smelting Furnace, manufactured by Inductotherm, 5184-FM-01
TU	4.004	Electro Winning Cell #1
TU	4.005	Electro Winning Cell #2
TU	4.006	Electro Winning Cell #3
TU	4.007	Pregnant Tank
TU	4.008	Barren Tank

1. Air Pollution Control Equipment

a. Emissions from **TU4.002** through **TU4.008** shall be ducted to a control system with 100% capture consisting of:

- (1) **Venturi Scrubber (VS-001)** followed by a demister and inline heater on the exhaust of **TU4.002**
- (2) **Baghouse (DC-002)** on the exhaust of **TU4.003**
- (3) **Carbon Bed Vapor Pac (CB-001)** final control shared by **TU4.002** though **TU4.008**

b. **Descriptive Stack Parameters**

- (1) Height: 45.93 feet
- (2) Diameter: 2.5 feet
- (3) Temperature: 149° Fahrenheit
- (4) Exhaust gases from **System 07** shall have a maximum volume flow rate of approximately 10,500 dry standard cubic feet per minute (DSCFM).
- (5) **TU4.002** through **TU4.008** share a single exhaust stack.
- (6) Exhaust from a mercury retort fume hood from **System 06** is also ducted through **CB-001**, and shares a stack with **TU4.002** through **TU4.008**.

2. Construction Requirements (NAC 445B.250)

The *Permittee* shall provide the Director written notification of:

- a. The date that construction of **System 07** is commenced postmarked no later than 30 days after such date. This requirement shall not apply to mass-produced facilities which are purchased in completed form.
- b. The anticipated date of initial startup of **each thermal unit in System 07**, postmarked not more than 60 days nor less than 30 days prior to such date.
- c. The actual date of initial startup of **each thermal unit in System 07**, postmarked within 15 days after such date.

3. Operating Requirements (NAC 445B.3679.3)

a. **Limitations of Operation**

- (1) The maximum allowable throughput of **carbon** for **TU4.002** will not exceed **0.15** tons of **carbon** per any one-hour period.
- (2) The maximum allowable throughput of **retorted precious metal laden material** for **TU4.003** will not exceed **0.168** tons of **retorted precious metal laden material** per batch. **Retorted precious metal laden material** shall consist of precious metal bearing material, as defined in section II.A.3.a.(1) (a) and (b), which has been retorted.
- (3) The maximum allowable throughput of **precious metal bearing solution** for **TU4.004** through **TU4.008** will not exceed **100** gallons per minute (**gpm**).
- (4) Mercury emissions from **TU4.002** shall not exceed **1.0 x 10⁻⁴** grains per dry standard cubic foot (**gr/dscf**).
- (5) Mercury emissions from **TU4.003** shall not exceed **1.0 x 10⁻⁵** gr/dscf.
- (6) Mercury emissions from **TU4.004** through **TU4.008** shall not exceed **5.0 x 10⁻⁵** gr/dscf.
- (7) **Hours**
 - (a) **TU4.002** and **TU4.004** though **TU4.008**, each, may operate a total of **8,760** hours per calendar year.
 - (b) **TU4.003** may operate **12** hours per day
 - (c) **TU4.003** may operate **4,380** hours per calendar year.



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Section II. Specific Operating Conditions (continued)

B. Thermal Units TU4.003 through TU4.008 (continued)

3. Operating Requirements (continued)

b. Work Practice Standards

- (1) Carbon Kiln (TU4.002)
 - (a) TU4.002 will have a maximum heating temperature of 1,382°F.
 - (b) TU4.002 shall automatically alarm and shut off, per interlock, if the temperature of TU4.002 exceeds 1,382°F.
 - (c) Permittee shall perform an annual visual inspection of the kiln tube for structural damage and cracks.
- (2) Venturi Scrubber (VS-001)
 - (a) The flow rate of scrubber liquid through VS-001 shall be maintained between 1 to 3 gpm.
 - (b) The maximum exhaust gas temperature at the discharge of VS-001 shall not exceed 100°F.
 - (c) The differential pressure across VS-001 shall be maintained between 10 and 12 inches of water.
- (3) The differential pressure across DC-002 shall be maintained between XXX
- (4) Lids on Electro Winning cells, TU4.004 through TU4.006, shall be closed during operation.
- (5) Permittee shall perform an annual visual inspection of TU4.007 and TU4.008 for corrosion and leaks.
- (6) Carbon Filter (CB-001)
 - (a) The carbon filter CB-001 will contain no less than 18,000 pounds of sulfur-impregnated carbon.
 - (b) The exhaust temperature at the inlet of carbon filter CB-001 will not exceed 150° F.
 - (c) CB-001 shall automatically alarm if the inlet exhaust temperature of CB-001 exceeds 150°F.
 - (d) The differential pressure across CB-001 shall not exceed 30 inches water column.
 - (e) CB-001 shall automatically alarm if the differential pressure across of CB-001 exceeds 30 inches of water column.
 - (f) Sample and replace the carbon in CB-001 according to the following schedule:

Sample the carbon at the inlet and outlet of the carbon filter CB-001 and record the depth of the sample probe within 90 days after replacement of the carbon. The sampled carbon will be analyzed for mercury and the average percentage of mercury, by weight, shall be calculated. The loading capacity of the sulfur-impregnated carbon is 20% by weight. A sample of carbon will be analyzed quarterly until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, the sampling of carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon in the carbon filter CB-001 will be replaced no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:

 - (i) EPA Method 6020 – Inductively Coupled Plasma-Mass Spectrometry;
 - (ii) EPA Method 7471B – Mercury in Solid of Semi-solid Waste (Manual Cold Vapor Technique); or
 - (iii) An alternative test method as approved by the Director.
 - (g) Any sulfur-impregnated carbon replaced in CB-001 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent, or better performing carbon.
 - (h) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CB-001 shall be kept on site.

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3)

a. Compliance Testing

- (1) Within 180 days of the notification of initial startup of TU4.002 as required in B.2.a through c, of this section, and annually thereafter, *the Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **System 07, while only TU4.002 is in operation**, consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume.
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from TU4.002. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director).



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Mt. Hamilton LLC

Section II. Specific Operating Conditions (continued)

B. Thermal Units TU4.003 through TU4.008 (continued)

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3) (continued)

a. Compliance Testing (continued)

- (3) Within 180 days of the notification of initial startup of **TU4.003** as required in B.2.a through c, of this section, and annually thereafter, *the Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **System 07, while only TU4.003 is in operation**, consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume.
- (4) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from **TU4.003**. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director).
- (5) Within 180 days of the notification of initial startup of **TU4.004 through TU4.008** as required in B.2.a through c, of this section, and annually thereafter, *the Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **System 07, while only TU4.004 through TU4.008 is in operation**, consisting of three valid runs utilizing US EPA Method 29 of 40 CFR Part 60 Appendix A. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume.
- (6) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from **TU4.004 through TU4.008, each**. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director).
- (7) The Permittee shall comply with the requirements in Section I.N of this operating permit for all compliance testing

b. Monitoring

The Permittee, upon issuance date of this operating permit, shall:

- (1) Monitor the total daily throughput of **carbon** for **TU4.002**, in tons, for the corresponding date.
- (2) Monitor the total daily hours of operation for **TU4.002** for the corresponding date.
- (3) Monitor the daily batch weight of **retorted precious metal laden material** for **TU4.003**, in tons, for each batch.
- (4) Monitor the daily hours for **TU4.003** for each batch, during each day of operation.
- (5) Monitor the total daily throughput of **precious metal bearing solution** for **TU4.004 through TU4.008, each**, in gallons, for the corresponding date.
- (6) Monitor the total daily hours of operation for **TU4.004 through TU4.008** for the corresponding date.
- (7) Install, operate, calibrate, and maintain a temperature interlock which will shut off the carbon kiln if the carbon kiln's temperature is above 1,382°F.
- (8) Install, operate, calibrate, and maintain a temperature interlock which will shut off **CB-001** if the exhaust gas temperature entering **CB-001** exceeds 150°F.
- (9) Install, operate, calibrate, and maintain a differential pressure interlock which will shut off **CB-001** if pressure drop across the **CB-001** is greater than 30 inches of water column.
- (10) Monitor the heating temperature for **TU4.002** continuously during operation. The hourly average temperature readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (11) Monitor the flow rate of scrubber liquid through **VS-001** continuously during operation. The hourly average flow rate, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (12) Monitor the exhaust gas temperature at the discharge of **VS-001** continuously during operation. The hourly average temperature readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (13) Monitor the differential pressure across **VS-001** continuously during operation. The hourly average pressure readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (14) Monitor the differential pressure drop across **DC-002** once per melt, for the corresponding day.
- (15) Monitor the inlet exhaust temperature for the carbon filter **CB-001** continuously during operation. The hourly average exhaust temperature readings, determined from each successive 15-minute period, will be recorded for the corresponding date.



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Section II. Specific Operating Conditions (continued)

B. Thermal Units TU4.003 through TU4.008 (continued)

4. Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3679.3) (continued)

b. Monitoring (continued)

- (16) Monitor the differential pressure across **CB-001** continuously, during operation, in inches water column. The average hourly differential pressure readings, determined from each successive 15-minute period, will be recorded for the corresponding date.
- (17) Monitor the percentage of mercury, by weight, on the carbon in the carbon filter **CB-001** quarterly until reaching 50% of the loading capacity, and then monthly until reaching 90% of the loading capacity.

c. Recordkeeping

The required monitoring established in Section B.4.b above, will be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total daily throughput of **Carbon** for **TU4.002**, in tons, for the corresponding date.
- (3) The total daily hours of operation for **TU4.002** for the corresponding date.
- (4) The corresponding average hourly throughput rate for **TU4.002** in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate and the total daily hours of operation recorded in Section A.4.d(2) and Section A.4.d(3) above
- (5) The total daily batch weight of **retorted precious metal laden material** for **TU4.003**, per batch, in tons for the corresponding date.
- (6) The total daily operating hours for **TU4.003**, per batch, for the corresponding date.
- (7) The total daily throughput of **precious metal bearing solution** for **TU4.004** through **TU4.008**, in gallons, for the corresponding date.
- (8) The total daily hours of operation for **TU4.004** through **TU4.008** for the corresponding date.
- (9) The corresponding average hourly throughput rate for **TU4.004** through **TU4.008** in gallons per minute. The average throughput rate will be determined from the total daily throughput rate and the total daily hours of operation recorded in Section A.4.d(7) and Section A.4.d(8) above
- (10) The temperature of **TU4.002**, based on a one-hour period, for the corresponding date.
- (11) The flow rate of scrubber liquid through **VS-001**, based on a one-hour period, for the corresponding date.
- (12) The maximum exhaust gas temperature at the discharge of **VS-001**, based on a one-hour period, for the corresponding date.
- (13) The differential pressure across **VS-001**, based on a one-hour period, for the corresponding date.
- (14) The differential pressure across **DC-002**, per melt, for the corresponding date.
- (15) The differential pressure across **CB-001**, based on a one-hour period, for the corresponding date.
- (16) The exhaust temperature at the inlet of carbon filter **CB-001**, based on a one-hour period, for the corresponding date.
- (17) The percentage mercury loading by weight sampled from **CB-001**, for the corresponding date.
- (18) The sample location from **CB-001**, for the corresponding date.
- (18) The amount of sulfur impregnated carbon replaced in **CB-001**, for the corresponding date.
- (20) The manufacturer and specifications of the sulfur impregnated carbon will be retained on site for inspection.
- (21) The results of the annual visual inspection of the drum of **TU4.002**.
- (22) The results of the annual visual inspection of **TU4.007** and **TU4.008**.

d. Reporting

- (1) The date, time and description of any alarm event and corresponding corrective action.
- (2) The date, time and description of any interlock event and corresponding corrective action.
- (3) **The Permittee** will promptly report to the Director any emissions and or throughput exceedances from **System 07**. The report to the Director will include probable cause and any action taken to correct the exceedance. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L of this operating permit.

***** **End of Specific Operating Conditions** *****



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

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Section III. Amendments

DRAFT

This permit:

1. Is non-transferable. (NAC 445B.287.3)
2. Will be posted conspicuously at or near the stationary source. (NAC 445B.318.5)
3. Any party aggrieved by the Department’s decision to issue this permit may appeal to the State Environmental Commission (SEC) within ten days after the date of notice of the Department’s action. (NRS 445B.340)

Signature: _____

Issued by: Jeffrey Kinder, P.E.
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Phone: (775) 687-9475

Date: /DATE/