



BUREAU OF AIR POLLUTION CONTROL

901 South Stewart Street, Suite 4001 • Carson City, NV 89701-5249
phone: 775-687-9349 • www.ndep.nv.gov/bapc

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: ROUND MOUNTAIN GOLD CORPORATION – SMOKY VALLEY COMMON OPERATION (hereinafter referred to as *Permittee*)

Mailing Address: P.O. BOX 480, ROUND MOUNTAIN, NEVADA 89045

Physical Address: #1 SMOKY VALLEY MINE ROAD, ROUND MOUNTAIN, NEVADA 89045

Driving Directions: FROM TONOPAH, NEVADA GO EAST 5.4 MILES ON US-6, THEN NORTH ON NV-376 FOR 47.16 MILES, THEN EAST ON SMOKY VALLEY MINE ROAD FOR 0.9 MILES

General Facility Location: SECTIONS 1-3, 10-12, 14 and 15, T9N, R43E, MDB&M
SECTION 6, T9N, R44E, MDB&M
SECTIONS 11-14, 23-26, 34-36, T10N, R43E, MDB&M
SECTIONS 4-8, 17-20, 29-31, T10N, R44E, MDB&M
SECTIONS 25 and 26, T11N, R43E, MDB&M
SECTIONS 28-33, T11N, R44E, MDB&M
HA 137B - BIG SMOKY VALLEY/NORTHERN PART/ NYE COUNTY
NORTH 4,284,343 M, EAST 491,174 M, UTM ZONE 11, NAD 83

Emission Unit List: 13 Emission Units		
A. System 17 – Refinery		
TU	4.005	Electric Induction Furnace
B. System 18 – Carbon Regeneration		
TU	4.001	Carbon Reactivation Kiln, Manufactured by Bartlett-Snow, Serial # Unknown
C. System GH 10 – Gold Hill Carbon Kiln		
TU	4.006	Carbon Reactivation Kiln, Summit Valley Equipment and Engineering (SVE&E), Serial # USP8CR001
D. System GH 11 – Gold Hill Carbon Stripping		
TU	4.007	Pregnant Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.008	Barren Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.009	Electrowinning Cells, Manufactured by SVE&E, Serial # Unknown
E. System GH 12 – Gold Hill Retort		
TU	4.010	Retort, Manufactured by SVE&E, Serial # 2308480MR001 & 002
F. System GH 13 – Gold Hill Furnace		
TU	4.011	Smelting Furnace, Manufactured by Inductotherm, Serial # Unknown
G. System 35 – ADR Carbon Stripping Circuit		
TU	4.002	Pregnant Solution Tank, Manufactured by Unknown, Serial # Unknown
TU	4.003	Barren Solution Tank 1, Manufactured by Unknown, Serial # Unknown
TU	4.004	Barren Solution Tank 2, Manufactured by Unknown, Serial # Unknown
TU	4.012	Electrowinning Cells, Manufactured by Unknown, Serial # Unknown (formerly DM3.001)



BUREAU OF AIR QUALITY PLANNING

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Emission Units Continued		
H. System 36 - Retort		
TU	4.013	Retort, Manufactured by Unknown, Serial # Unknown



BUREAU OF AIR POLLUTION CONTROL

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Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

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) and NAC 445B.3685.2(b)

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.3679.2(b) NAC 445B.3685.2(c)

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) and NAC 445B.3685.2(d)

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) and NAC 445B.3685.2(e)

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) and NAC 445B.3685.2(f)

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) and NAC 445B.3685.2(g)

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) and NAC 445B.3685.2(h)

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) and NAC 445B.3685.2(i)

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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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

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Section I. General Conditions (continued)

- I. Certify True and Accurate. NAC 445B.3679.2(i) and NAC 445B.3685.2(j)
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) NAC 445B.3685.3(b)(c)(e)
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. The telephone number for the notification is (775) 687-9350.
 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.



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Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section I. General Conditions (continued)

M. Construction Requirements: New, or Modified Thermal Units, 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. *The 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.



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Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section I. General Conditions (continued)

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 and NAC 445B.3685

1. The NvMACT for **TU4.001 through TU4.005, 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 TU4.005** is **November 14, 2011**.
2. Construction on **Systems GH10, GH11, GH12, and GH13** must commence within 18 months after the issuance date of this permit. The issuance date for **Systems GH10, GH11, GH12, and GH13** is **November 14, 2011**. The NvMACT for **Systems GH10, GH11, GH12, and GH13, each** must be implemented upon startup.
3. Construction on **TU4.002 through TU4.004 and TU4.012** must commence within 18 months after the issuance date of this permit. The issuance date for **TU4.002 through TU4.004 and TU4.012** is **April 16, 2014**. The NvMACT for **TU4.002 through TU4.004 and TU4.012** must be implemented upon startup.
4. The *Permittee* shall provide the Director written notification of:
 - a. The date of implementation of NvMACT for **TU4.001 through TU4.005, each**, pursuant to NAC 445B.3679.3(a)(2)(I) postmarked within 15 days after such date (NAC 445B.3679.2(g)).
5. Construction on **System 36** must commence within 18 months after the issuance date of this permit. The issuance date for System 36 is **February 13, 2023**. The NvMACT for **TU4.013** must be implemented upon startup.

R. Annual Reporting, NAC 445B.3679 and NAC 445B.3685

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. Emission Unit TU4.005 location North 4,283.51 km, East 490.91 km, UTM (Zone 11)

A. System 17 – Refinery		
TU	4.005	Electric Induction Furnace (Manufactured by Inductotherm, Model: Duraline, Serial # 361306-35-11)

1. Air Pollution Equipment

- a. Exhaust gases from TU4.005 shall be ducted to a control system with 100% capture consisting of:
 - (1) **Baghouse (BH-002)** (*manufacturer by Clean Gas Systems*)
 - (2) **Carbon Deep Bed Scrubber (CA-002)** (*manufactured by Scotia International of Nevada*)
- b. Stack Parameters
 Height: 25 ft.
 Diameter: 1.3 feet
 Stack temperature: approximately 300°F
 Flow: Maximum volume flow rate of 3,500 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC 445B.3679.3)

- a. Limitations of Operation
 - (1) The maximum allowable throughput rate of **precious metal precipitate** for TU4.005, shall not exceed **0.5 ton per batch**. “Precious metal precipitate” shall consist only of the following:
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electrowinning, 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.
 - (c) Material containing precious metals collected from the baghouse.
 - (2) The mercury emission limit for **System 17** shall not exceed **1.0 x 10⁻⁵** grains per dry standard cubic foot (gr/dscf).
 - (3) Hours
 TU 4.005 may operate a total of **24** hours per day.
- b. Work Practices
 - (1) Baghouse (**BH-002**)
 - (a) The bags in **BH-002** shall be inspected quarterly.
 - (b) The differential pressure across **BH-002** shall be maintained at or above **1** inches of water.



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Section II. Specific Operating Conditions (continued)

A. Emission Unit TU4.005 (continued) location North 4,283.51 km, East 490.91 km, UTM (Zone 11)

(2) Carbon Deep Bed Scrubber (CA-002)

- (a) The maximum exhaust gas temperature at the inlet to CA-002 shall not exceed 300°F.
- (b) CA-002 shall contain no less than 11,000 pounds of sulfur-impregnated carbon.
- (c) The differential pressure across CA-002 shall not exceed 17 inches of water.
- (d) Replace all of the sulfur-impregnated carbon in CA-002 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-002 shall be sampled 90 days after the notification of the implementation of NvMACT for TU4.005. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
 - ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-002.
- (e) Any sulfur-impregnated carbon replaced in CA-002 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.
- (f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-002 shall be kept on site.

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

a. Compliance Testing

- (1) Within 180 days of initial startup of TU4.005 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of System 17 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 0.85 dry standard cubic meters (30 dscf).
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System 17. 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.



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Section II. Specific Operating Conditions (continued)

A. **Emission Unit TU4.005 (continued)** location North 4,283.51 km, East 490.91 km, UTM (Zone 11)

b. Monitoring

The *Permittee*, upon implementation of the NvMACT for **TU4.005** shall:

- (1) Prior to implementation of NvMACT for **TU4.005**, install, operate, calibrate, and maintain instrumentation to measure and record the following.
 - (a) The differential pressure of **BH-002** in inches of water.
 - (b) The exhaust gas temperature prior to **CA-002** in degrees Fahrenheit.
 - (c) The differential pressure across **CA-002** in inches of water.
- (2) Monitor the total batch weight of precious metal precipitate for **TU4.005** in tons, per batch.
- (3) Monitor the daily hours of operation per batch for **TU4.005**.
- (4) Monitor the differential pressure across **BH-002** in inches of water once per batch during operation.
- (5) Monitor the exhaust gas temperature prior to **CA-002** in degrees Fahrenheit once per batch during operation.
- (6) Monitor the differential pressure across **CA-002** in inches of water once per batch during operation.
- (7) Monitor the sulfur-impregnated carbon in **CA-002** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section A.3.b. above, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total batch weight of **precious metal precipitate** for **TU4.005**, in tons, for the corresponding date.
- (3) The daily hours of operation per batch for **TU4.005**, during each day of operation.
- (4) The results of the quarterly bag inspection in **BH-002**.
- (5) The differential pressure across **BH-002** in inches of water once per batch, during operation, for the corresponding date.
- (6) The outlet gas temperature prior to **CA-002** in degrees Fahrenheit once per batch, during operation, for the corresponding date.
- (7) The differential pressure across **CA-002** in inches of water once per batch during operation, for the corresponding date.
- (8) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-002** from the mercury analysis, for the corresponding date.
- (9) The depth of the sample location in **CA-002** from the mercury analysis, for the corresponding date.
- (10) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-002**, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



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Section II. Specific Operating Conditions

B. Emission Unit TU4.001 location North 4,283.53 km, East 490.94 km, UTM (Zone 11)

B. System 18 – Carbon Regeneration

TU	4.001	Carbon Reactivation Kiln, Manufactured by Bartlett-Snow, Serial # Unknown
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1. Air Pollution Equipment

- a. Exhaust gases from TU4.001 shall be ducted to a control system with 100% capture consisting of:
- (1) **Wet Scrubber (WS-001)** (*manufacturer by Clean Gas Systems*)
 - (2) **Carbon Deep Bed Scrubber (CA-001)** (*manufactured by Scotia International of Nevada*)

b. Stack parameters

Height: 25.17 ft.

Diameter: 0.688 ft.

Stack temperature: approximately 185°F

Flow: Maximum volume flow rate of 700 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC 445B.3679.3)

a. Limitations of operation.

- (1) The maximum allowable throughput rate of **carbon** from CIL circuit for TU4.001 shall not exceed **0.5 ton** per any one-hour period.
- (2) The mercury emission limit for **System 18** shall not exceed **1.0 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
- (3) TU 4.001 may operate simultaneously.

(4) Hours

TU 4.001 may operate a total of **24** hours per day.



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Section II. Specific Operating Conditions (continued)

B. Emission Unit TU4.001 (continued) location North 4,283.53 km, East 490.94 km, UTM (Zone 11)

b. Work practices.

(1) Carbon Kiln (TU4.001)

(a) Visually inspect the drum lining of TU4.001 for structural damage and cracks biannually.

(2) Wet Scrubber (WS-001)

(a) The water flow rate of WS-001 shall be maintained at or above 12 gallons per minute.

(b) The differential pressure across WS-001 shall be maintained between 1 and 10 inches of water.

(3) Carbon Deep Bed Scrubber (CA-001)

(a) The maximum exhaust gas temperature at the discharge of the inline heater prior to CA-001 shall not exceed 185°F.

(b) CA-001 shall contain no less than 5,000 pounds of sulfur-impregnated carbon.

(c) The differential pressure across CA-001 shall not exceed 10 inches of water.

(d) Replace all of the sulfur-impregnated carbon in CA-001 according to the following schedule:

i. The sulfur-impregnated carbon in CA-001 shall be sampled 90 days after the notification of the implementation of NvMACT for TU4.001. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:

1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;

2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or

3. An alternative test method as approved in advance by the Director.

ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-001.

(e) Any sulfur-impregnated carbon replaced in CA-001 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.

(f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-001 shall be kept on site.

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

a. Compliance Testing

(1) Within 180 days of initial startup of TU4.001 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of System 18 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 0.85 dry standard cubic meters (30 dscf).

(2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System 18. 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.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

B. Emission Unit TU4.001 (continued) location North 4,283.53 km, East 490.94 km, UTM (Zone 11)

b. Monitoring

The *Permittee*, upon implementation of NvMACT for **TU4.001** shall:

- (1) Prior to implementation of NvMACT for **TU4.001**, install, operate, calibrate, and maintain instrumentation to measure and record the following:
 - (a) The water flow rate of **WS-001** in gallons per minute.
 - (b) The differential pressure of **WS-001** in inches of water.
 - (c) The inline heater outlet gas temperature prior to **CA-001** in degrees Fahrenheit.
 - (d) The differential pressure across **CA-001** in inches of water.
- (2) Monitor the total daily hours of operation for **TU4.001**.
- (3) Monitor the total daily throughput rate of **carbon** from CIL circuit for **TU4.001** in tons.
- (4) Monitor the water flow rate for **WS-001** in gallons per minute once per day during operation.
- (5) Monitor the differential pressure across **WS-001** in inches of water once per day during operation.
- (6) Monitor the inline heater outlet gas temperature prior to **CA-001** in degrees Fahrenheit once per day during operation.
- (7) Monitor the differential pressure across **CA-001** in inches of water once per day during operation.
- (8) Monitor the sulfur-impregnated carbon in **CA-001** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section B.3.b. above, shall 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 hours of operation for **TU4.001**, for the corresponding date.
- (3) The total daily throughput rate of **carbon** from CIL circuit for **TU4.001** in tons, for the corresponding date.
- (4) The water flow rate for **WS-001** in gallons per minute once per day, during operation, for the corresponding date.
- (5) The differential pressure across **WS-001** in inches of water once per day, during operation, for the corresponding date.
- (6) The inline heater outlet gas temperature prior to **CA-001** in degrees Fahrenheit once per day, during operation, for the corresponding date.
- (7) The differential pressure across **CA-001** in inches of water once per day during operation, for the corresponding date.
- (9) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-001** from the mercury analysis, for the corresponding date.
- (10) The depth of the sample location in **CA-001** from the mercury analysis, for the corresponding date.
- (11) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-001**, for the corresponding date.
- (12) The inspection for **TU4.001** bi-annually for the corresponding date.
- (13) The corresponding average hourly throughput rate for **TU4.001** in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate (iii) and the total daily hours of operation (ii) above.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

C. Emission Unit TU4.006 location North 4,290.22 km, East 493.87 km, UTM (Zone 11)

C. System GH 10 – Gold Hill Carbon Kiln		
TU	4.006	Carbon Reactivation Kiln, Manufactured by Summit Valley Equipment and Engineering (SVE&E), Serial # USP8CR001

1. Air Pollution Equipment

- a. Exhaust gases from TU4.006 shall be ducted to a control system with 100% capture consisting of:
 - (1) **Condenser (MC-001)** (*manufacturer by ALFA LAVAL*)
 - (2) **Carbon Deep Bed Scrubber (CA-003)** (*manufactured by SVE&E*)
- b. Description of Stack parameters
 Height: 48.88 ft.
 Diameter: 0.48 ft.
 Stack temperature: approximately: 150°F
 Flow: Maximum volume flow rate of 95 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC 445B.3685.3)

- a. Limitations of operation.
 - (1) The maximum allowable throughput rate of **carbon** from CIL circuit for TU4.006 shall not exceed **0.25 ton** per any one-hour period.
 - (2) The mercury emission limit for **System GH 10** shall not exceed **1.0 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
 - (3) Hours
 TU4.006 may operate a total of **24** hours per day.
- b. Work practices.
 - (1) **Carbon Kiln (TU4.006)**
 - (a) Visually inspect the drum lining of TU4.006 for structural damage and cracks biannually.
 - (2) **Condenser (MC-001)**
 - (a) Exhaust gas temperature at the discharge of MC-001 shall be maintained at or below **100°F**.
 - (b) An alarm will be triggered when the exhaust gas temperature at the discharge of MC-001 reaches **90°F**.
 - (c) TU4.006 shall automatically shut off via interlock if the exhaust gas temperature at the discharge of MC-001 is above **125°F**.
 - (d) TU4.006 shall automatically shut off via interlock if water flow into MC-001 is not present.
 - (e) The condensed mercury from MC-001 shall be collected monthly.



BUREAU OF AIR POLLUTION CONTROL

NDEP

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

C. **Emission Unit TU4.006 (continued)** location North 4,290.22 km, East 493.87 km, UTM (Zone 11)

(3) Carbon Deep Bed Scrubber (CA-003)

- (a) The maximum exhaust gas temperature at the discharge of the inline heater prior to CA-003 shall not exceed 185°F.
- (b) CA-003 shall contain no less than 590 pounds of sulfur-impregnated carbon.
- (c) The differential pressure across CA-003 shall not exceed 15 inches of water.
- (d) Replace all of the sulfur-impregnated carbon in CA-003 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-003 shall be sampled within 90 days after the initial startup of TU4.006. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
 - ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-003.
- (e) Any sulfur-impregnated carbon replaced in CA-003 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.
- (f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-003 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3)

a. Compliance Testing

- (1) Within 180 days of initial startup of TU4.006 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of TU4.006 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 0.85 dry standard cubic meters (30 dscf).
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System GH 10. 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.

b. Monitoring

The Permittee for TU4.006 shall:

- (1) Install, operate, calibrate, and maintain instrumentation to measure and record the following:
 - (a) The water flow rate into MC-001, in gallons per minute.
 - (b) The outlet gas temperature MC-001, in degrees Fahrenheit.
 - (c) The differential pressure across CA-003, in inches of water.
 - (d) The inline heater outlet gas temperature prior to CA-003 in degrees Fahrenheit.
- (2) Prior to startup of MC-001, install, operate, calibrate and maintain an interlock that will shut off TU4.006 when water flow is not present.
- (3) Prior to startup of MC-001, install, operate, calibrate and maintain an exhaust gas temperature interlock that will shut off the TU4.006 heating element if the exhaust gas from the condenser is 125° F or greater.
- (4) Monitor the total daily hours of operation for TU4.006.
- (5) Monitor the total daily throughput rate of carbon from CIL circuit for TU4.006 in tons.



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

C. **Emission Unit TU4.006 (continued)** location North 4,290.22 km, East 493.87 km, UTM (Zone 11)

b. Monitoring (continued)

- (6) Monitor the outlet gas temperature of **MC-001** in degrees Fahrenheit, continuously during operation.
- (7) Monitor the mercury drained from **MC-001** in pounds, monthly
- (8) Monitor the inline heater outlet gas temperature prior to **CA-003** in degrees Fahrenheit, continuously during operation.
- (9) Monitor the differential pressure across **CA-003** in inches of water, continuously during operation.
- (10) Monitor the sulfur-impregnated carbon in **CA-003** for percentage of mercury by weight, quarterly until reaching **50** percent of the carbon loading capacity and then monthly until reaching **90** percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section C.3.b. above, shall 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 hours of operation for **TU4.006**, for the corresponding date.
- (3) The total daily throughput rate of **carbon** from CIL circuit for **TU4.006** in tons, for the corresponding date.
- (4) The outlet gas temperature of **MC-001** in degrees Fahrenheit, continuously during operation, based on a one hour period, for the corresponding date.
- (5) The mercury drained from **MC-001** in pounds, monthly, for the corresponding date.
- (6) The inline heater outlet gas temperature prior to **CA-003** in degrees Fahrenheit, continuously during operating, based on a one hour period, for the corresponding date.
- (7) The differential pressure across **CA-003** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- (8) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-003** from the mercury analysis, for the corresponding date.
- (9) The depth of the sample location in **CA-003** from the mercury analysis, for the corresponding date.
- (10) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-003**, for the corresponding date.
- (11) The inspection for **TU4.006** bi-annually for the corresponding date.
- (12) The corresponding average hourly throughput rate for **TU4.006** in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate (iii) and the total daily hours of operation (ii) above.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

D. Emission Units TU4.007 through TU4.009 location North 4,290.22 km, East 493.88 km, UTM (Zone 11)

D. System GH 11 – Gold Hill Carbon Stripping		
TU	4.007	Pregnant Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.008	Barren Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.009	Electrowinning Cells, Manufactured by SVE&E, Serial # Unknown

1. Air Pollution Equipment

- a. Exhaust gases from **TU4.007, TU4.008, and TU4.009** shall be ducted to a control system with 100% capture consisting of:
 - (1) **Carbon Deep Bed Scrubber (CA-004)** (*manufactured by SVE&E*)
- b. Description of Stack parameters
 Height: 36.5 ft.
 Diameter: 0.63 ft.
 Stack temperature: approximately 100°F
 Flow: Maximum volume flow rate of 2,660 dry standard cubic feet per minute (dscfm).
 Units **TU4.007, TU4.008, and TU4.009** are ducted to a common control and a common exhaust stack.

2. Operating Requirements (NAC 445B.3685.3)

- a. Limitations of operation. NAC 445B.3685.3
 - (1) The maximum allowable throughput rate of **precious metal solution** for **TU4.007, TU4.008 and TU4.009**, each, shall not exceed **80 gallons** per minute.
 - (2) The mercury emission limit for **TU4.007 – TU4.009**, combined shall not exceed **1.01 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
 - (3) **TU4.007, TU4.008, and TU4.009** may operate simultaneously.
 - (4) Hours
TU 4.007, TU4.008, and TU4.009 each may operate a total of **24** hours per day.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

D. Emission Units TU4.007 through TU4.009 (continued) location North 4,290.22 km, East 493.88 km, UTM (Zone 11)

b. Work practices.

(1) Carbon Deep Bed Scrubber (CA-004)

(a) CA-004 shall contain no less than **4,800** pounds of sulfur-impregnated carbon.

(b) The differential pressure across CA-004 shall not exceed **15 inches of water**.

(c) Replace all of the sulfur-impregnated carbon in CA-004 according to the following schedule:

i. The sulfur-impregnated carbon in CA-004 shall be sampled within 90 days after the initial startup of **TU4.007, TU4.008, and TU4.009**. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:

1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;

2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or

3. An alternative test method as approved in advance by the Director.

ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-004.

(d) Any sulfur-impregnated carbon replaced in CA-004 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent mercury removal media.

(e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-004 shall be kept on site.

(2) Pregnant Tank, Barren Tank and Electrowinning Cells (TU4.007 – TU4.009)

(a) Visually inspect tanks for structural damage and fluid leaks monthly.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3685.3)

a. Compliance Testing

(1) Within 180 days of initial startup of **TU4.007 – TU4.009** and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of **System GH 11** 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 **0.85** dry standard cubic meters (**30** dscf).

(2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from **System GH 11**. 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.

b. Monitoring

The **Permittee** shall:

(1) Install, operate, calibrate, and maintain instrumentation to measure and record the following for **TU4.007, TU4.008, and TU4.009**:

(a) The **precious metal solution** throughput rate of **TU4.007, TU4.008 and TU4.009, each**, in gallons per minute.

(b) The differential pressure across CA-004 in inches of water.

(2) Monitor the total daily hours of operation for **TU4.007**.

(3) Monitor the throughput rate of **precious metal solution** for **TU4.007** in gallons per minute, once per day, during operation.

(4) Monitor the total daily hours of operation for **TU4.008**.

(5) Monitor the throughput rate of **precious metal solution** for **TU4.008** in gallons per minute, once per day, during operation.



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Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

D. Emission Units TU4.007 through TU4.009 (continued) location North 4,290.22 km, East 493.88 km, UTM (Zone 11)

b. Monitoring (continued)

- (6) Monitor the total daily hours of operation for **TU4.009**.
- (7) Monitor the throughput rate of **precious metal solution** for **TU4.009** in gallons per minute, once per day, during operation.
- (8) Monitor the differential pressure across **CA-004** in inches of water, continuously during operation.
- (9) Monitor the sulfur-impregnated carbon in **CA-004** for percentage of mercury by weight, quarterly until reaching **50** percent of the carbon loading capacity and then monthly until reaching **90** percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section D.3.b. above, shall 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 hours of operation for **TU4.007**, for the corresponding date.
- (3) The throughput rate of **precious metal solution** for **TU4.007** in gallons per minute, once per day, during operation, for the corresponding date.
- (4) The total daily hours of operation for **TU4.008**, for the corresponding date.
- (5) The throughput rate of **precious metal solution** for **TU4.008** in gallons per minute, once per day, during operation, for the corresponding date.
- (6) The total daily hours of operation for **TU4.009**, for the corresponding date.
- (7) The throughput rate of **precious metal solution** for **TU4.009** in gallons per minute, once per day, during operation, for the corresponding date.
- (8) The differential pressure across **CA-004** in inches of water, continuously during operation, for the corresponding date, based on a one hour period.
- (9) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-004** from the mercury analysis, for the corresponding date.
- (10) The depth of the sample location in **CA-004** from the mercury analysis, for the corresponding date.
- (11) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-004**, for the corresponding date.
- (12) The inspections for **TU4.007, TU4.008, and TU4.009** monthly for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

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Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

E. Emission Unit TU4.010 location North 4,290.22 km, East 493.90 km, UTM (Zone 11)

E. System GH 12 – Gold Hill Retort		
TU	4.010	Retort, Manufactured by SVE&E, Serial # 2308480MR001 & 002

1. Air Pollution Equipment

- a. Exhaust gases from **TU4.010** shall be ducted to a control system with 100% capture consisting of:
 - (1) **Mercury Condenser with chiller (MC-002)** (*manufactured by SVE&E*)
 - (2) **Carbon Deep Bed Scrubber (CA-005)** (*manufactured by SVE&E*)
- b. Stack parameters
 Height: 14 ft.
 Diameter: 0.29 ft.
 Stack temperature: approximately 150°F
 Flow: Maximum volume flow rate of 16 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC445B.3685.3)

- a. Limitations of Operation
 - (1) The maximum allowable batch weight of **precious metal concentrate** for **TU4.010**, shall not exceed **3,000 pounds per batch**. “Precious metal concentrate” shall consist only of the following:
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electrowinning, 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) The mercury emission limit for **System GH 12** shall not exceed **1.15 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
 - (3) The precious metal concentrate shall be retorted in pans specified by the retort manufacturer and not exceed the volume capacity specified by the manufacturer, per pan.
 - (4) Hours
TU4.010 may operate a total of **24** hours per day.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394 Permit No. AP1041-2250
MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

E. Emission Unit TU4.010 (continued) location North 4,290.22 km, East 493.90 km, UTM (Zone 11)

b. Work Practice Standards

(1) Retort (TU4.010)

- (a) During heating TU4.010 shall be placed under negative gauge pressure between 200 and 500 millimeters of mercury (mm Hg).
- (b) TU4.010 shall automatically shut off via interlock if the negative gauge pressure is less than 200 mm Hg.

(2) Mercury Condenser (MC-002)

- (a) Exhaust gas temperature at the discharge of MC-002 shall be maintained at or below 125°F.
- (b) The condensed mercury from MC-002 shall be collected monthly.
- (c) TU4.010 shall automatically shut off via interlock if the exhaust gas temperature at the discharge of MC-002 is above 125°F.
- (d) TU4.010 shall automatically shut off via interlock if water flow into MC-002 is not present.

(3) Carbon Deep Bed Scrubber (CA-005)

- (a) CA-005 shall contain no less than 200 pounds of sulfur-impregnated carbon.
- (b) The differential pressure across CA-005 shall not exceed 10 inches of water.
- (c) Replace all of the sulfur-impregnated carbon in CA-005 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-005 shall be sampled within 90 days after the initial startup of TU4.010. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:
 - 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - 3. An alternative test method as approved in advance by the Director.
 - ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-005.
- (d) Any sulfur-impregnated carbon replaced in CA-005 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.
- (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-005 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3685.3)

a. Compliance Testing

- (1) Within 180 days of initial startup of TU4.010 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of System GH 12 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 0.85 dry standard cubic meters (30 dscf).
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System GH 12. 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.



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

E. **Emission Unit TU4.010 (continued)** location North 4,290.22 km, East 493.90 km, UTM (Zone 11)

b. Monitoring

The *Permittee* shall:

- (1) Install, operate, calibrate, and maintain instrumentation to continuously measure and record the following for **TU4.010**.
 - (a) The negative gauge pressure of **TU4.010**, in mmHg.
 - (b) The outlet gas temperature **MC-002**, in degrees Fahrenheit.
 - (c) The water flow rate into **MC-002**, in gallons per minute.
 - (d) The differential pressure across **CA-005**, in inches of water.
- (2) Install, operate, calibrate and maintain an interlock that will shut off **TU4.010**'s heating element if the negative gauge pressure is less than **200 mmHg**.
- (3) Install, operate, calibrate and maintain an interlock that will shut off when the water flow is not present in **MC-002**.
- (4) Install, operate, calibrate and maintain an exhaust gas temperature interlock that will shut off the **TU4.010** heating element if the exhaust gas from the condenser is **125°F** or greater in **MC-002**.
- (5) Monitor the batch weight of **precious metal concentrate** for **TU4.010**, in pounds, for each batch.
- (6) Monitor the daily hours of operation per batch for **TU4.010**, during each day of operation.
- (7) Monitor the negative vacuum gauge pressure for **TU4.010** in mmHg, continuously during operation.
- (8) Monitor the outlet gas temperature **MC-002** in degrees Fahrenheit, continuously during operation.
- (9) Monitor the mercury drained from **MC-002** in pounds, monthly.
- (10) Monitor the differential pressure across the **CA-005** in inches of water, continuously during operation.
- (11) Monitor the sulfur-impregnated carbon in **CA-005** for percentage of mercury by weight, quarterly until reaching 50% of the carbon loading capacity and then monthly until reaching 90% of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section E.3.b. above, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total batch weight of **precious metal concentrate** for **TU4.010** in tons, for the corresponding date.
- (3) The daily hours of operation per batch for **TU4.010** for the corresponding date.
- (4) The negative vacuum gauge pressure for **TU4.010** in mmHg, continuously during operating, based on a one hour period, for the corresponding date.
- (5) The outlet gas temperature from **MC-002** in degrees Fahrenheit, continuously during operation, based on a one hour period, for the corresponding date.
- (6) The mercury drained from **MC-002** in pounds, monthly, for the corresponding date.
- (7) The differential pressure across **CA-005** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- (8) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-005** from the mercury analysis, for the corresponding date.
- (9) The depth of the sample probe from the carbon sampling on **CA-005** for the corresponding date.
- (10) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-005**, for the corresponding date.
- (11) The date, time, and corrective action taken for an interlock shut-down, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

F. Emission Unit TU4.011 location North 4,290.23 km, East 493.90 km, UTM (Zone 11)

F. System GH 13 – Gold Hill Furnace		
TU	4.011	Smelting Furnace, Manufactured by Inductotherm, Serial # Unknown

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.011 shall be ducted to a control system with 100% capture consisting of:
 - (1) **Baghouse (BH-001)** (*manufactured by EAS*)
 - (2) **Carbon Deep Bed Scrubber (CA-006)** (*manufactured by SVE&E*)
- b. Stack parameters
 Height: 14 ft.
 Diameter: 1.0 ft.
 Stack temperature: approximately 150°F
 Flow: Maximum volume flow rate of 3,500 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC 445B.3685.3)

- a. Limitations of Operation
 - (1) The maximum allowable batch weight of **retorted precious concentrate** for TU4.011, shall not exceed **0.5 ton per batch**. “Retorted precious metal concentrate” shall consist only of the following:
 - (a) Precious metal concentrate, as defined in E.2.a.(1)(a)(b) of this section, that has been retorted.
 - (b) Dust collected from the baghouse and fume hood of TU4.011.
 - (c) Precious metal concentrate that originates from **System 35** that has not been retorted due to low mercury concentration.
 - (2) The mercury emission limit for TU4.011 shall not exceed **1.05 x 10⁻⁵** grains per dry standard cubic foot (gr/dscf).
 - (3) Hours
 TU4.011 may operate a total of **24** hours per day.
- b. Work Practices
 - (1) Furnace (TU4.011)
 - (a) Only **retorted precious metal concentrate** shall be fed into TU4.011.
 - (b) **BH-001** shall be operated at all times during the operation of TU4.011 including startup and shutdown.
 - (c) The pressure differential across **BH-001** shall be between **0.7 - 10** inches of water.
 - (d) Bags in **BH-001** shall be inspected quarterly for damage or leakage.



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Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

F. Emission Unit TU4.011 (continued) location North 4,290.23 km, East 493.90 km, UTM (Zone 11)

(2) Carbon Scrubber (CA-006)

- (a) CA-006 shall contain no less than **14,000 pounds** of sulfur-impregnated carbon.
- (b) The differential pressure across CA-006 shall not exceed **25 inches** of water.
- (c) Replace all of the sulfur-impregnated carbon in CA-006 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-006 shall be sampled within 90 days after the initial startup of TU4.011. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
 - ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-006.
- (d) Any sulfur-impregnated carbon replaced in CA-006 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.
- (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-006 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3379.3)

a. Compliance Testing

- (1) Within 180 days of initial startup of TU4.011 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of **System GH 13** 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 **0.85** dry standard cubic meters (**30** dscf).
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from **System GH 13**. 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.

b. Monitoring

The Permittee shall:

- (1) Install, operate, calibrate, and maintain instrumentation to continuously measure and record the following, for TU4.011.
 - (a) The differential pressure across **BH-001** in inches of water.
 - (b) The differential pressure across **CA-006** in inches of water.
- (2) Monitor the batch weight of **retorted precious metal concentrate** for TU4.011, in tons, for each batch.
- (3) Monitor the daily hours of operation per batch for TU4.011, during each day of operation.
- (4) Monitor the differential pressure across **BH-001** in inches of water, continuously during operation.
- (5) Monitor the differential pressure across the **CA-006** in inches of water, continuously during operation.
- (6) Monitor the sulfur-impregnated carbon in **CA-006** for percentage of mercury by weight, quarterly until reaching 50% of the carbon loading capacity and then monthly until reaching 90% of the carbon loading capacity.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

F. **Emission Unit TU4.011 (continued)** location North 4,290.23 km, East 493.90 km, UTM (Zone 11)

c. Recordkeeping

The required monitoring, established in Section F.3.b. above, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total batch weight of **retorted precious metal concentrate** for **TU4.011** in tons, for the corresponding date.
- (3) The daily hours of operation per batch for **TU4.011**, for the corresponding date.
- (4) The differential pressure across **BH-001** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- (5) The bag inspections for **BH-001**, quarterly, for the corresponding date.
- (6) The differential pressure across **CA-006** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- (7) The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-006** from the mercury analysis, for the corresponding date.
- (8) The depth of the sample probe from the carbon sampling on **CA-006** for the corresponding date.
- (9) The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-006**, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

G. Emission Units TU4.002 - TU4.004 and TU4.012 location North 4,283,475 m, East 490,924 m, UTM (Zone 11)

G. System 35 – ADR Carbon Stripping Circuit		
TU	4.002	Pregnant Solution Tank, Manufactured by Unknown, Serial # Unknown
TU	4.003	Barren Solution Tank 1, Manufactured by Unknown, Serial # Unknown
TU	4.004	Barren Solution Tank 2, Manufactured by Unknown, Serial # Unknown
TU	4.012	Electrowinning Cells, Manufactured by Unknown, Serial # Unknown (formerly DM 3.001)

1. Air Pollution Equipment

- a. Exhaust gases from **TU4.002, TU4.003, TU4.004 and TU4.012** shall be ducted to a control system with 100% capture consisting of:
 - (1) **Demister (DM-001)** (*manufacturer not specified*)
 - (2) **Inline Heater (IH-001)** (*manufacturer not specified*)
 - (3) **Sulfur-Impregnated Carbon Filter (CA-007)** (*manufactured not specified.*)
- b. Stack parameters
 Height: 40 ft.
 Diameter: 1.96 ft.
 Stack temperature: approximately 150°F
 Flow: Maximum volume flow rate of 2,200 dry standard cubic feet per minute (dscfm).
 Units **TU4.002, TU4.003, TU4.004 and TU4.012** are ducted to common controls and a common exhaust stack.

2. Operating Requirements (NAC 445B.3685.3)

- a. Limitations of operation
 - (1) The maximum allowable throughput rate of **precious metal solution** for **TU4.002 – TU4.004 and TU4.012**, each, shall not exceed **80 gallons** per minute.
 - (2) The mercury emission limit for **TU4.002 – TU4.004 and TU4.012**, combined shall not exceed **5.0 x 10⁻⁵ grains** per dry standard cubic foot (gr/dscf).
 - (3) **TU4.002 – TU4.004 and TU4.012** may operate simultaneously.
 - (4) Hours
TU4.002 – TU4.004 and TU4.012 each may operate a total of **24 hours** per day.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394 Permit No. AP1041-2250
MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

G. Emission Units TU4.002 - TU4.004 and TU4.012 (continued) location North 4,283,475 m, East 490,924 m, UTM (Zone 11)

b. Work practices.

- (1) Pregnant Tanks (2), Barren Tank and Electrowinning Cells (TU4.002 – TU4.004 and TU4.012)
 - (a) Visually inspect tanks for structural damage and fluid leaks monthly.
- (2) Electrowinning Cells (TU4.012)
 - (a) The lids on TU4.012 shall be closed during operation.
- (3) Demister and Inline Heater (DM-001 and IH-001)
 - (a) DM-001 and IH-001 shall be inspected quarterly and internal components replaced as necessary.
- (4) Sulfur-Impregnated Carbon Filter (CA-007)
 - (a) CA-007 shall contain no less than 4,000 pounds of sulfur-impregnated carbon.
 - (b) The differential pressure across CA-007 shall not exceed 15 inches of water.
 - (c) The maximum temperature at the inlet to CA-007 shall not exceed 185° F.
 - (d) Replace all of the sulfur-impregnated carbon in CA-007 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-007 shall be sampled within 90 days after the initial startup of TU4.002, TU4.003, TU4.004 and TU4.012. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
 - ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-007.
 - (e) Any sulfur-impregnated carbon replaced in CA-007 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.
 - (f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-007 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3)

a. Compliance Testing

- (1) Within 180 days of initial startup of TU4.002 – TU4.004 and TU4.012 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of System 35 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 0.85 dry standard cubic meters (30 dscf).
- (2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System 35. 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.



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

G. Emission Units TU4.002 - TU4.004 and TU4.012 (continued) location North 4,283,475 m, East 490,924 m, UTM (Zone 11)

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3) (continued)

b. Monitoring

The *Permittee* shall:

- (1) Install, operate, calibrate, and maintain instrumentation to measure and record the following for **TU4.002- TU4.004 and TU4.012**:
 - (a) The **precious metal solution** throughput rate of **T4.002, TU4.003, TU4.004 and TU4.012, each**, in gallons per minute.
 - (b) The differential pressure across **CA-007** in inches of water.
 - (c) The inlet temperature to **CA-007** in degrees Fahrenheit.
- (2) Monitor the total daily hours of operation for **TU4.002**.
- (3) Monitor the throughput rate of **precious metal solution** for **TU4.002** in gallons per minute, once per day, during operation.
- (4) Monitor the total daily hours of operation for **TU4.003**.
- (5) Monitor the throughput rate of **precious metal solution** for **TU4.003** in gallons per minute, once per day, during operation.
- (6) Monitor the total daily hours of operation for **TU4.004**.
- (7) Monitor the throughput rate of **precious metal solution** for **TU4.004** in gallons per minute, once per day, during operation.
- (8) Monitor the total daily hours of operation for **TU4.012**.
- (9) Monitor the throughput rate of **precious metal solution** for **TU4.012** in gallons per minute, once per day, during operation.
- (10) Monitor the differential pressure across **CA-007** in inches of water, continuously during operation.
- (11) Monitor the inlet temperature to **CA-007** in degrees Fahrenheit, continuously during operation.
- (12) Monitor the sulfur-impregnated carbon in **CA-007** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.



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Section II. Specific Operating Conditions (continued)

G. Emission Units TU4.002 - TU4.004 and TU4.012 (continued) location North 4,283,475 m, East 490,924 m, UTM (Zone 11)

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3) (continued)

c. Recordkeeping

The required monitoring, established in Section G.3.b. above, shall 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 hours of operation for TU4.002, for the corresponding date.
- (3) The throughput rate of **precious metal solution** for TU4.002 in gallons per minute, once per day, during operation, for the corresponding date.
- (4) The total daily hours of operation for TU4.003, for the corresponding date.
- (5) The throughput rate of **precious metal solution** for TU4.003 in gallons per minute, once per day, during operation, for the corresponding date.
- (6) The total daily hours of operation for TU4.004, for the corresponding date.
- (7) The throughput rate of **precious metal solution** for TU4.004 in gallons per minute, once per day, during operation, for the corresponding date.
- (8) The total daily hours of operation for TU4.012, for the corresponding date.
- (9) The throughput rate of **precious metal solution** for TU4.012 in gallons per minute, once per day, during operation, for the corresponding date.
- (10) The differential pressure across CA-007 in inches of water, continuously during operation, for the corresponding date, based on a one hour period.
- (11) The inlet temperature to CA-007 in degrees Fahrenheit, continuously during operation, for the corresponding date, based on a one hour period.
- (12) The percentage of mercury by weight of the sulfur-impregnated carbon in CA-007 from the mercury analysis, for the corresponding date.
- (13) The depth of the sample location in CA-007 from the mercury analysis, for the corresponding date.
- (14) The date, time, and weight of each sulfur-impregnated carbon replacement for CA-007, for the corresponding date.
- (15) The inspections for TU4.002, TU4.003, TU4.004 and TU4.012 monthly for the corresponding date.
- (16) The results of the quarterly inspections for DM-001 and IH-001, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

H. Emission Unit TU4.013 location North 4,283,478 m, East 490,905 m, UTM (Zone 11)

E. System 36 – Retort		
TU	4.013	Retort

1. Air Pollution Equipment

- a. Exhaust gases from TU4.013 shall be ducted to a control system with 100% capture consisting of:
 - (1) **Mercury Condenser with chiller (MC-003)** (*manufactured by unknown*)
 - (2) **Carbon Deep Bed Scrubber (CA-008)** (*manufactured by unknown*)
- b. Stack parameters
 Height: 14 ft.
 Diameter: 0.33 ft.
 Stack temperature: approximately 100°F
 Flow: Maximum volume flow rate of 23 dry standard cubic feet per minute (dscfm).

2. Operating Requirements (NAC445B.3685.3)

- a. Limitations of Operation
 - (1) The maximum allowable batch weight of **precious metal concentrate** for TU4.013, shall not exceed **2,000 pounds per batch**. “Precious metal concentrate” shall consist only of the following:
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electrowinning, 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) The mercury emission limit for **System 36** shall not exceed **1.0 x 10⁻⁴** grains per dry standard cubic foot (gr/dscf).
 - (3) The precious metal concentrate shall be retorted in pans specified by the retort manufacturer and not exceed the volume capacity specified by the manufacturer, per pan.
 - (4) Hours
 TU4.013 may operate a total of **24** hours per day.



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Section II. Specific Operating Conditions (continued)

H. Emission Unit TU4.013 location North 4,283,478 m, East 490,905 m, UTM (Zone 11)

2. Operating Requirements (NAC445B.3685.3) (continued)

b. Work Practice Standards

(1) Retort (TU4.013)

(a) During heating TU4.013 shall be placed under negative gauge pressure greater than 200 millimeters of mercury (mm Hg).

(b) TU4.013 shall automatically shut off via interlock if the negative gauge pressure is less than 200 mm Hg.

(2) Mercury Condenser (MC-003)

(a) Exhaust gas temperature at the discharge of MC-003 shall be maintained at or below 125°F.

(b) The condensed mercury from MC-003 shall be collected monthly.

(c) TU4.013 shall automatically shut off via interlock if the exhaust gas temperature at the discharge of MC-003 is above 125°F.

(d) TU4.013 shall automatically shut off via interlock if water flow into MC-003 is not present.

(3) Carbon Deep Bed Scrubber (CA-008)

(a) CA-008 shall contain no less than 100 pounds of sulfur-impregnated carbon.

(b) The differential pressure across CA-008 shall not exceed 10 inches of water.

(c) Replace all of the sulfur-impregnated carbon in CA-008 according to the following schedule:

i. The sulfur-impregnated carbon in CA-008 shall be sampled within 90 days after the initial startup of TU4.013.

The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples.

Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon 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:

1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;

2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or

3. An alternative test method as approved in advance by the Director.

ii. On an annual basis, perform a total loading analysis on the mercury removal media in CA-008.

(d) Any sulfur-impregnated carbon replaced in CA-008 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing mercury removal media.

(e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-008 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3685.3)

a. Compliance Testing

(1) Within 180 days of initial startup of TU4.013 and annually thereafter, the Permittee shall conduct and record a performance test for mercury on the exhaust stack of System 36 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 0.85 dry standard cubic meters (30 dscf).

(2) Simultaneously, during the Method 29 compliance test, conduct and record a material assay from System 36. 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.



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Section II. Specific Operating Conditions (continued)

H. Emission Unit TU4.013 location North 4,283,478 m, East 490,905 m, UTM (Zone 11)

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3685.3)

b. Monitoring

The *Permittee* shall:

- (1) Install, operate, calibrate, and maintain instrumentation to continuously measure and record the following for TU4.013.
 - (a) The negative gauge pressure of TU4.013, in mmHg.
 - (b) The outlet gas temperature MC-003, in degrees Fahrenheit.
 - (c) The water flow rate into MC-003, in gallons per minute.
 - (d) The differential pressure across CA-008, in inches of water.
- (2) Install, operate, calibrate and maintain an interlock that will shut off TU4.013's heating element if the negative gauge pressure is less than **200 mmHg**.
- (3) Install, operate, calibrate and maintain an interlock that will shut off when the water flow is not present in MC-003.
- (4) Install, operate, calibrate and maintain an exhaust gas temperature interlock that will shut off the TU4.013 heating element if the exhaust gas from the condenser is **125°F** or greater in MC-003.
- (5) Monitor the batch weight of **precious metal concentrate** for TU4.013, in pounds, for each batch.
- (6) Monitor the daily hours of operation per batch for TU4.013, during each day of operation.
- (7) Monitor the negative vacuum gauge pressure for TU4.013 in mmHg, continuously during operation.
- (8) Monitor the outlet gas temperature MC-003 in degrees Fahrenheit, continuously during operation.
- (9) Monitor the mercury drained from MC-003 in pounds, monthly.
- (10) Monitor the differential pressure across the CA-008 in inches of water, continuously during operation.
- (11) Monitor the sulfur-impregnated carbon in CA-008 for percentage of mercury by weight, quarterly until reaching 50% of the carbon loading capacity and then monthly until reaching 90% of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section H.3.b. above, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- (1) The calendar date of any required monitoring.
- (2) The total batch weight of **precious metal concentrate** for TU4.013 in tons, for the corresponding date.
- (3) The daily hours of operation per batch for TU4.013 for the corresponding date.
- (4) The negative vacuum gauge pressure for TU4.013 in mmHg, continuously during operating, based on a one hour period, for the corresponding date.
- (5) The outlet gas temperature from MC-003 in degrees Fahrenheit, continuously during operation, based on a one hour period, for the corresponding date.
- (6) The mercury drained from MC-003 in pounds, monthly, for the corresponding date.
- (7) The differential pressure across CA-008 in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- (8) The percentage of mercury by weight of the sulfur-impregnated carbon in CA-008 from the mercury analysis, for the corresponding date.
- (9) The depth of the sample probe from the carbon sampling on CA-008 for the corresponding date.
- (10) The date, time, and weight of each sulfur-impregnated carbon replacement for CA-008, for the corresponding date.
- (11) The date, time, and corrective action taken for an interlock shut-down, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. 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 permit.



BUREAU OF AIR POLLUTION CONTROL

NDEP

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smoky Valley Common Operation – Round Mountain Gold Corporation

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



BUREAU OF AIR POLLUTION CONTROL

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Section III. Amendments

April 16, 2014 – Aircase ID 7743 – MOPTC Modification – AK – Round Mountain Gold submitted a MOPTC modification for the following revisions:

- System 25 – Carbon Regeneration
o Stack parameters were updated.
o Removal of solution tanks from system and created System 35.
• System GH 09 – Gold Hill Carbon Kiln
o Work practice standards and monitoring were changed due to last year’s temperature reports. The maximum exhaust temperature was changed from 75°F to 100°F. The interlock shut off temperature was changed from 90°F to 125°F.
o For the work practice standards were changed to include an alarm that will be triggered when the exhaust gas temperature exceeds 90°F.
o Stack parameters were updated.
• System GH 10 – Gold Hill Carbon Stripping
o Throughput rate was increased from 60 gal/min to 80 gal/min no resizing of control was needed.
o Stack parameters were updated.
• System GH 11 – Gold Hill Retort
o Work practice standards and monitoring were changed due to last year’s temperature reports. The maximum exhaust temperature was changed from 75°F to 100°F. The interlock shut off temperature was changed from 90°F to 125°F.
o For the work practice standards were changed to include an alarm that will be triggered when the exhaust gas temperature exceeds 90°F.
o Stack parameters were updated.
• System GH 12 – Gold Hill Furnace
o Differential Pressure across the BH-001 was changed from 1 to 10 inches of water to 0.7 to 10 inches of water.
o Stack parameters were updated.
• System 35 – ADR Carbon Stripping Circuit
o Added TU 4.002 through TU 4.004 to System 35.
o Added TU 4.012, Electrowinning Cells to System 35.

December 4, 2016 – Aircase 9113 – MOPTC Modification – KM – Finalized TUTD Testing Protocol with final mercury emission limits for all systems

November 8, 2019 – Aircase 10202 – MOPTC Modification – KM

- System 17 – Refinery
o Replaced TU4.005 with a new Electric Induction Furnace, with a new baghouse and carbon adsorption control, and updated work practices.
• System GH 13 – Gold Hill Furnace
o Add language allowing TU4.011 to process precious metal concentrate that originates from System 35
• Carbon Sampling Language
o Added annual testing requirement of mercury removal media for overall loading
• Revised System Designations to align with Class I AQOP.

December 11, 2019 – Reopen/Revise – KM – MOPTC reopened due to incorrect stack parameters for System 17 and removing references to inline heater.

February 13, 2023 – Aircase 11411 – KM – Addition of a new retort (TU4.0.13), added New or modified thermal unit NAC references in the General Conditions.

August 16, 2023 – Aircase 11604 – KM – Revision to the carbon bed (CA-007) for System 35, added inspection and inlet exhaust monitoring to System 35.

Month Date 2024 – Aircase 11895 – KM – Revision to System 35 removing the Coldfinger gas conditioning device from the MOPTC. Records, as well as a letter from the design engineer were used to determine that the removal was justified. Corrected UTM coordinates for System 35.

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: Tanya Soleta
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Phone: (775) 687-9540

Date: _____

Table with 7 columns: AK, NH, KM, KM, km, km, km. Values: 01/14, 11/11, 4/16, 12/19, 2/23, 8/23, xx/24



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De Minimis Unit(s)

- A. Pursuant to NAC 445B.3657 the Director has determined a De Minimis emission limit of 5.0 lbs/yr for each facility. In addition, the Director may designate thermal units as De Minimis on a case-by-case basis. The *Permittee* has provided the following thermal units with the potential to emit mercury as De Minimis and/or the following thermal units have been designated as De Minimis by the Director:

Unit #	Unit Description	Mercury PTE (lb/yr)
DM3.001	Refinery Electrowinning Vent	Removed 07/20/2015
DM3.002	Refinery East Drying Oven	0.784
DM3.003	Refinery West Drying Oven	0.0157
Assay Lab North Grieve Ovens (1 Stack)		
DM3.004	Grieve Oven 1	0.1179
DM3.005	Grieve Oven 2	0.1179
	Total:	0.2358
Assay Lab South Grieve Ovens (1 Stack)		
DM3.006	Grieve Oven 1	0.1179
DM3.007	Grieve Oven 2	0.1179
	Total:	0.2358
Assay Lab Low Energy Scrubber (1 Stack)		
DM3.008	DFC Oven 1	0.0183
DM3.009	DFC Oven 2	0.0183
DM3.010	Cress Oven 1	0.0183
DM3.011	Cress Oven 2	0.0183
DM3.012	Small Grieve Oven	0.1460
	Total:	0.2190
Assay Lab High Energy Scrubber (1 Stack)		
DM3.013	DFC Oven 1	0.0077
DM3.014	DFC Oven 2	0.0077
DM3.015	DFC Oven 3	0.0077
DM3.016	DFC Oven 4	0.0077
DM3.017	DFC Oven 5	0.0077
DM3.018	DFC Oven 6	0.0077
DM3.019	DFC Oven 7	0.0077
DM3.020	DFC Oven 8	0.0077
DM3.038	DFC Over 9 (Spare)	0.0077
	Total:	0.0693

Cupellation Furnace Room		
DM3.021	Cress Electric Furnace 1	0.0000
DM3.022	Cress Electric Furnace 2	0.0000
DM3.023	Cress Electric Furnace 3	0.0000
DM3.024	Cress Electric Furnace 4	0.0000
DM3.025	Cress Electric Furnace 5	0.0000
	Total:	0.0000
Met Lab		
DM3.026	Grieve Oven 1	0.0600



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DM3.027	Grieve Oven 2	0.0600
DM3.028	Fisher Isotemp Oven	Removed 03/13/2013
DM3.042	Grieve Oven 3	0.0600
	Total:	0.1800
Wet Lab		
DM3.029	LECO Machine	0.0000064
DM3.030	Hot Plate 1	0.0000
DM3.031	Hot Plate 2	0.0000
DM3.032	Hot Plate 3	0.0000
	Total:	0.0000064
LECO Room		
DM3.033	LECO Machine	0.000025
Assay Lab		
DM3.034	Atomic Adsorption Machine 1	0.00163
DM3.035	Atomic Adsorption Machine 2	0.00163
	Total:	0.00326
Doré Room		
DM3.036	Hot Plate 1	0.0008
DM3.039	Hot Plate 2	0.0000
DM3.040	Cress Oven	0.0000
DM3.041	Atomic Adsorption Machine	0.0000
	Total:	0.0008
High Grade Room		
DM3.037	Hot Plate	0.00019
	Grand Total:	1.744

B. Annual Demonstration Requirement NAC 445B.3665(1)(b)

1. An owner or operator of a tier-3 thermal unit:

- (a) Shall submit documentation to the Director on an annual basis which certifies that the thermal unit satisfies the criteria to be a tier-3 thermal unit.



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Amendments:

12/19/08-NH: Upon NDEP/NMPC inspection, the following De Minimis Units were added:

- Five (5) Cress Electric Furnaces, DM3.021 – DM3.025
- Two (2) Grieve Ovens, DM 3.026 and DM 3.027
- Fisher Isotemp Oven, DM 3.028
- Two (2) AA Machines, DM 3.034 and DM3.035
- Two (2) LECO Machine, DM3.029 and DM3.033
- Three (3) Wet Lab Hot Plates, DM3.030 – DM3.032
- One (1) Doré Room Hot Plate, DM3.036
- One (1) High Grade Room Hot Plate, DM3.037

10/7/09-NH: Upon NDEP/NMCP inspections, the following De Minimis Units were added:

- One (1) DFC Oven, DM 3.038
- One (1) Hot Plate, DM 3.039
- One (1) Cress Oven, DM 3.040
- One (1) Atomic Adsorption Machine, DM 3.041

3/13/2013-NL: NDEP/NMCP received a letter from RMGC on March 4, 2013 listing the following replacement:

- DM3.028 was replaced with DM3.042

7/2015 – TS: Removed Refinery Electrowinning Cell Vent (DM3.001) from equipment list.

5/30/2017 – KM: Updated calculations for Refinery East and West Drying Ovens