

26 June 2012

Mr. Kenneth N. Dionne, CEO
Gannon & Scott, Inc.
33 Kenney Drive
Cranston, RI 02920

Dear Mr. Dionne:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your application for the installation of a thermal reduction system at your 45 Sharpe Drive, Cranston, Rhode Island facility.

Enclosed is a minor source permit issued pursuant to our review of your application (Approval Nos. 2171-2176).

If there are any questions concerning this permit, please contact me at 222-2808, extension 7028.

Sincerely,

Aleida M. Whitney
Air Quality Specialist
Office of Air Resources

cc: Cranston Building Official
Matt Fischer – Gannon & Scott, Inc.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

MINOR SOURCE PERMIT

GANNON & SCOTT, INC.

APPROVAL NOs. 2171-2176

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

Gannon & Scott, Inc.

For the following:

The installation of a thermal reduction system consisting of a Dean TR-3 stepped hearth.

modular starved air incinerator (Approval No. 2171), two 300 lb/hr tray/rotary modular

starved air incinerators, BF-1 & BF-2, (tbd) (Approval Nos. 2172 & 2173) and an air pollution

control system, (tbd). The APC system will include a venturi scrubber/cyclonic separator

(Approval No. 2174), a packed tower scrubber (Approval No. 2175) and a baghouse

(Approval No. 2176). The thermal reduction system will process precious metal bearing

material.

Located at: *45 Sharpe Drive, Cranston, RI*

This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *Gannon & Scott, Inc.* from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.

Douglas L. McVay, Acting Chief
Office of Air Resources

Date of issuance

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

Permit Conditions and Emission Limitations

GANNON & SCOTT, INC.

APPROVAL NOS. 2171-2176

A. Emission Limitations

1. Particulate matter

- a. Particulate matter generated from incinerators TR-3, BF-1 and BF-2 and the tray cooling hood shall be captured, contained, and routed to the air pollution control system consisting of a venturi scrubber/cyclonic separator, a packed tower scrubber and a baghouse for treatment. Particulate matter shall be reduced by 99% or greater before discharge to the atmosphere.
- b. The concentration of particulate matter discharged to the atmosphere from the final stack of the air pollution control system shall not exceed 0.0075 grains per dry standard cubic foot (0.0075 gr/dscf) corrected to 12% CO₂.

2. Listed Toxic Air Contaminants [reserved]

3. Opacity

- a. Visible emissions from the final stack of the air pollution control system shall not exceed 10% opacity (six-minute average).
- b. Visible emissions from the bypass stack shall not exceed 10% opacity (six-minute average).

B. Operating Requirements

1. Incinerators TR-3, BF-1 and BF-2 shall not be loaded unless the secondary chamber temperature is at or above 1400°F.
2. The secondary chamber temperature of TR-3, BF-1 and BF-2 shall be maintained at a minimum of 1400°F, and the secondary chamber volume of each incinerator shall be of sufficient capacity to provide a minimum residence time for combustion gases of one second at 1400°F.
3. The secondary chamber thermocouple for TR-3, BF-1 and BF-2 shall be located as close to the secondary chamber exit as possible or at a location that represents a minimum of a one second residence time at 1400°F.

4. An operator shall always be in attendance whenever TR-3, BF-1 and BF-2 are operating.
5. Operation of TR-3, BF-1 and BF-2 shall be consistent with the operating procedures included with the permit application except where conditions of this approval may indicate otherwise.
6. An incinerator operating procedures manual shall be maintained on-site at all times. All personnel who operate TR-3, BF-1 and BF-2 shall be familiar with the operating procedures.
7. The pressure drop across the venturi scrubber shall be maintained at 25 to 35 inches of water.
8. The air stream temperature at the inlet of the baghouse shall be maintained at a minimum of 225°F to avoid condensation of moisture in the air stream.
9. The packed tower scrubber packing and mist eliminator shall be washed down daily.

C. Monitoring Requirements

1. The secondary chamber temperature of TR-3, BF-1 and BF-2 shall be monitored and recorded continuously.
2. The pressure drop across the venturi scrubber shall be monitored continuously and checked a minimum of once per day and the date, time and measurement shall be recorded.
3. The packed tower scrubber pH shall be measured and checked a minimum of once per day and the date, time and measurement shall be recorded.
4. The packed tower pressure drop shall be monitored continuously and checked a minimum of once per day and the date, time and measurement shall be recorded.
5. The air stream temperature at the inlet of the baghouse shall be monitored and recorded continuously.
6. The pressure drop across the baghouse shall be monitored continuously and checked a minimum of once per day and the date, time and measurement shall be recorded.
7. The owner/operator shall, on a weekly basis, conduct visual inspections of the baghouse ductwork for leaks.
8. A Visolite test of the baghouse shall be performed once per year.

D. Testing Requirements

1. Stack Testing – Incinerator

- a. Within 180 days of the issuance of this minor source permit; performance testing shall be conducted to demonstrate compliance with the emission limitation for particulate matter and to measure emissions of antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium and zinc before and after the air pollution control system.

The requirement to conduct testing before the air pollution control system can be waived if the owner/operator either conducts emission testing of the unit(s) at 33 Kenney Drive to quantify emissions of the listed toxic air contaminants or quantifies emissions of the listed toxic air contaminants from the units at 33 Kenney Drive by other means that the Office of Air Resources determines are acceptable.

- b. A stack testing protocol shall be submitted to the Office of Air Resources at least 60 days prior to the performance of any stack tests. The owner/operator shall provide the Office of Air Resources at least 60 days prior notice of any stack test.
- c. All test procedures used for emissions testing shall be conducted in accordance with Appendix A of 40 CFR 60 or another method approved by the Office of Air Resources and U.S. Environmental Protection Agency (EPA) prior to the performance of any emissions tests.
- d. The owner/operator shall install any and all test ports or platforms necessary to conduct the required testing, provide safe access to any platforms and provide the necessary utilities for sampling and testing equipment.
- e. All testing shall be conducted under operating conditions deemed acceptable and representative for the purposes of assessing compliance with the applicable emissions limitations.
- f. A final report of the results of stack testing shall be submitted to the Office of Air Resources no later than 60 days following completion of testing.
- g. All stack testing must be observed by the Office of Air Resources or its authorized representative to be considered acceptable, unless the Office of Air Resources provides authorization to the owner/operator to conduct the testing without an observer present.

E. Recordkeeping and Reporting

1. The owner/operator shall maintain the following records concerning incinerators TR-3, BF-1 and BF-2 and waste material:
 - a. The daily operating hours of TR-3, BF-1 and BF-2.
 - b. The number of batches processed in TR-3, BF-1 and BF-2 each day including the date and time each incinerator is loaded for each batch.
 - c. The weight of each batch processed in TR-3, BF-1 and BF-2 in pounds.
 - d. A description of the waste material processed in TR-3, BF-1 and BF-2 for each batch.
 - e. The operating temperature of the secondary chamber of TR-3, BF-1 and BF-2.
2. The owner/operator shall maintain records of the daily pressure drop measurements of the venturi scrubber.
3. The owner/operator shall maintain records of the daily pH and pressure drop measurements of the packed tower scrubber.
4. The owner/operator shall maintain records of the daily maintenance of the packed tower scrubber including the date and time the scrubber saddles and mist eliminator are washed down.
5. The owner/operator shall maintain records of the daily pressure drop measurements of the baghouse.
6. The owner/operator shall maintain records of the air stream temperature at the inlet of the baghouse.
7. The owner/operator shall submit to the Office of Air Resources a written report of the results of the Visolite test and any corrective action taken or to be taken within 10 days of completion of the test.
8. The owner/operator shall notify the Office of Air Resources, in writing, of the date of actual initial start-up of incinerators TR-3, BF-1 and BF-2, no later than fifteen days after such date.
9. The owner/operator shall notify the Office of Air Resources, in writing, of the date of actual initial start-up of the air pollution control system, no later than fifteen days after such date.
10. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.

11. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to any equipment that would:

- Change the representation of the facility in the application.
- Alter the applicability of any state or federal air pollution rules or regulations.
- Result in the violation of any terms or conditions of this permit.
- Qualify as a modification under APC Regulation No. 9.

Such notification shall include:

- a. Information describing the nature of the change.
- b. Information describing the effect of the change on the emission of any air contaminant.
- c. The scheduled completion date of the planned change.

Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

12. The owner/operator shall notify the Office of Air Resources, in writing, of any noncompliance with the terms of this permit within 30 calendar days of becoming aware of such occurrence and supply the Director with the following information:

- a. The name and location of the facility;
- b. The subject source(s) that caused the noncompliance with the permit term;
- c. The time and date of first observation of the incident of noncompliance;
- d. The cause and expected duration of the incident of noncompliance;
- e. The estimated rate of emissions (expressed in lbs/hr or lbs/day) during the incident and the operating data and calculations used in estimating the emission rate;
- f. The proposed corrective actions and schedule to correct the conditions causing the incidence of noncompliance.

13. All records required as a condition of this approval must be made available to the Office of Air Resources or its representative upon request. These records must be maintained for a minimum of five years after the date of each record.

F. Other Permit Conditions

1. To the extent consistent with the requirements of this approval and applicable Federal and State laws, the facility shall be designed, constructed and operated in accordance with the representation of the facility in the permit application.
2. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigating any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.
3. At all times, including periods of startup, shutdown and malfunction, the permittee shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures and inspection of the source.
4. Within 120 days of completion of the stack testing required in Condition D.1.a, the owner/operator must submit one of the following to the Office of Air Resources:
 - a. A request to modify this minor source permit to include emission limitations and/or operating restrictions to limit the total quantity of any listed toxic air contaminant discharged to the atmosphere from the entire facility to less than the minimum quantity for that contaminant, as specified in Appendix A of Air Pollution Control Regulation No. 9, or
 - b. A schedule to complete an air quality modeling analysis to demonstrate that the emissions of any listed toxic air contaminant from the facility comply with the provisions of subsection 22.5.3 of RI Air Pollution Control Regulation (APCR) No. 22. A modeling protocol must be submitted with the schedule detailing the methodology that will be used for that analysis. Prior to conducting the analysis the modeling protocol must be approved by the Office of Air Resources.

G. Malfunctions

1. The owner/operator shall shut down the incinerator in the event of a malfunction that results in, or that could result in, emissions in excess of the permit limits. The incinerator shall remain shutdown until the malfunction has been identified and corrected.
2. Malfunction means a sudden and unavoidable breakdown of process or control equipment. In the case of a malfunction of any air pollution control system, all reasonable measures shall be taken to assure resumption of the designed control

efficiency as soon as possible. In the event that the malfunction of an air pollution control system is expected or may reasonably be expected to continue for longer than 24 hours and if the owner/operator wishes to operate the source on which it is installed at any time beyond that period, the Director shall be petitioned for a variance under Section 23-23-15 of the General Laws of Rhode Island, as amended. Such petition shall include, but is not limited to, the following:

- a. Identification of the specific air pollution control system and source on which it is installed;
 - b. The expected period of time that the air pollution control system will be malfunctioning or out of service;
 - c. The nature and quantity of air contaminants likely to be emitted during said period;
 - d. Measures that will be taken to minimize the length of said period;
 - e. The reasons that it would be impossible or impractical to cease the source operation during said period.
3. The owner/operator may seek to establish that a malfunction that would result in noncompliance with any of the terms of this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:
- a. The malfunction was not attributable to improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error;
 - b. The malfunction was not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
 - c. Repairs were performed in an expeditious fashion. Off-shift labor and overtime should be utilized, to the extent practicable, to ensure that such repairs were completed as expeditiously as practicable.
 - d. All reasonable steps were taken to minimize emissions during the period of time that the repairs were performed.
 - e. Emissions during the period of time that the repairs were performed will not:
 - (1) Cause an increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution

Control Regulation No. 22 and any Calculated Acceptable Ambient Levels; and

- (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.
- f. The reasons that it would be impossible or impractical to cease the source operation during said period.
- g. The owner/operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

This demonstration must be provided to the Office of Air Resources, in writing, within two working days of the time when the malfunction occurred and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.