



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

CERTIFIED MAIL

February 26, 2013

Skye Metals Recovery, Inc.
5513 Regency Oaks Drive N
Mobile, AL 36609

**RE: Variance from Classification as a Waste
Skye Metals Recovery, Inc.**

Dear Sir or Madam:

On February 26, 2013, the director of Ohio EPA issued to Skye Metals Recovery, Inc. (Skye) a final variance from classification as a waste. This variance allows Skye to operate and maintain the metals recycling facility located at 110 Blue Knob Road, Building 1D, Marietta, Ohio 45750 in Washington County. Certain materials that Skye will handle are not wastes under Ohio's hazardous waste laws. The Agency issued this variance because Skye recycles wastes and uses and manages these materials more like products than wastes.

On December 5, 2012, the director of Ohio EPA provided a public notice of his decision to tentatively grant the variance from classification as a waste. The public comments received during the comment period were considered by the director in making the decision to issue this variance. Enclosed are the final Variance from Classification as a Waste and the Response to Comments.

If you have any questions concerning this variance, please contact Annette De Havilland of Ohio EPA's Central Office, Division of Materials and Waste Management, at (614) 644-2621.

Sincerely,

Georgia Frakes, Management Analyst
Division of Hazardous Waste Management

Enclosures

cc: Annette De Havilland, DMWM, CO
Scott Bergreen, DMWM, SEDO

file

OHIO E.P.A.

FEB 26 2013

BEFORE THE
OHIO ENVIRONMENTAL PROTECTION AGENCY

REGISTERED DIRECTOR'S JOURNAL

In the Matter of:

Skye Metal Recovery Inc.
110 Blue Knob Road
Marietta, Ohio 45750

Applicant

Variance from Classification
as a Waste

I certify this to be a true and accurate copy of the
official documents as filed in the records of the Ohio
Environmental Protection Agency.

PREAMBLE

By: Dorey Lassiter Date: 2-26-13

It is agreed by the parties hereto as follows:

I. JURISDICTION

This Variance from Classification as a Waste (Variance) is issued to Skye Metal Recovery Inc. (Applicant) pursuant to the authority vested in the Director of the Ohio Environmental Protection Agency (Ohio EPA) under Ohio Revised Code (ORC) §§ 3734.02, 3734.14, 3745.01 and Ohio Administrative Code (OAC) rule 3745-50-23.

II. PARTIES BOUND

This Variance shall apply only to the Applicant. No change in ownership of the Applicant or of the Facility shall in any way alter the Applicant's obligations under this Variance.

III. DEFINITIONS

Unless otherwise stated, all terms used in the Variance shall have the same meaning as defined in ORC Chapter 3734. and the rules promulgated there under. Whenever the terms listed below are used in this Variance, the following definitions shall apply:

1. "Accept" means that time when F006 Filter Cake or K171/172 Spent Catalyst is unloaded from the transport vehicle and placed into Applicant's Storage Warehouse.
2. "Application" means the responses to the criteria listed in OAC rule 3745-50-24(C) and supporting documents for a Variance submitted by the Applicant on August 10, 2012 and amended August 21, 2012, which is attached hereto and incorporated herein.

3. "Facility" means the Storage Warehouse and the operations pad where the calciner and equipment associated with the calciner are located. The Facility is located at the Marietta Industrial Enterprises, Inc. (MIE) Industrial Park, adjacent to State Route 7 and the intersections of County Roads 3 and 7. Facility does not include the Support Building.
4. "F006 Filter Cake" means metal hydroxide-bearing filter cake generated from the dewatering of sludge generated from the treatment of wastewater from electroplating operations that is classified as a hazardous waste under Ohio EPA's hazardous waste rules.
5. "K171/172 Spent Catalyst" means spent hydrotreating or hydrorefining catalyst from petroleum refining operations that is classified as a hazardous waste under Ohio EPA's hazardous waste rules.
6. "Process Residuals" mean those secondary materials generated from the processing and management of Variance Material or Reclaimed Metal.
7. "Reclaimed Metal" means the metal-bearing material produced by Applicant that is produced with Variance Material by means of calcination.
8. "Storage Warehouse" means the 15,000 square foot building known as "Building 1D" at the MIE Industrial Park.
9. "Support Building" means the building at 110 Blue Knob Road, Marietta, which houses the laboratory, lunchroom, change rooms, and offices.
10. "Variance Filter Cake" means F006 Filter Cake the Applicant Accepts and processes to produce Reclaimed Metal.
11. "Variance Material" means Variance Filter Cake and Variance Spent Catalyst, collectively.
12. "Variance Spent Catalyst" means K171/172 Spent Catalyst the Applicant Accepts and processes to produce Reclaimed Metal.

IV. FINDINGS

The Director of Ohio EPA has determined the following findings:

1. Applicant is a person as defined in ORC section 3734.01(G) and OAC rule 3745-50-10(A).
2. Applicant will accept F006 Filter Cake from electroplating operations, K171/K172 Spent Catalyst from petroleum refining operations, and nonhazardous materials. Metals of value to be reclaimed from the F006 Filter Cake are nickel as the main element with some tin and copper. Metals of value to be reclaimed from the K171/172 Spent Catalyst are molybdenum as the main element and accompanied by either nickel or cobalt.
3. Applicant processes Variance Material to concentrate the metals and to remove detrimental elements of sulfur, phosphorus, and volatile hydrocarbons from the K171/172 Spent catalyst. The industrial process used by Applicant to reclaim metals is calcination.
4. Applicant has contracted with a supplier to process certain metal-bearing materials generated by petroleum refineries, non-plating industrial facilities, and non-food industry generators.
5. Application describes an initial receiver of the Reclaimed Metal processed by the Applicant. The initial receiver primarily produces varieties of tool steel, nickel and nickel alloys, heat and corrosion resistant stainless, precipitation hardening, cast steels, and reactive and refractory metals and alloys (includes cobalt base).
6. Applicant addresses the standards and criteria set forth in OAC 3745-50-24(C) for issuing a variance from classification as a waste in the following manner:

a. The degree of processing the material has undergone and the degree of further processing that is required;

Initial reclamation of F006 Filter Cake entails treatment of the rinse water from the plating line with an alkali to raise the pH from <1 to >9.5. The increase in pH causes the metals to precipitate. The precipitate is settled into a slurry with a solids content of approximately 2 percent. The slurry is then pressed into a cake with a solids content between 20 percent and 35 percent. F006 Filter Cake, once Accepted by Applicant at the Facility, is classified as Variance Filter Cake.

Further reclamation of Variance Filter Cake by Applicant entails blending loads of Variance Filter Cake to produce a desired Reclaimed Metal. The blended Variance Filter Cake is calcined at temperatures between 600°F and 800°F to form a Reclaimed Metal oxide product. Reclaimed Metal is

tested to ensure that it meets product specifications. Reclaimed Metal that does not meet specifications is reprocessed.

An example of initial reclamation of K171/K172 Spent Catalyst begins with the petroleum refining process where metals in the oil are captured by the catalyst. Metal concentrations in crude oil are concentrated in the catalyst by orders of magnitude. K171/172 Spent Catalyst is removed from the reactor and combined in a liquid slurry with a low volatility product. The K171/172 Spent Catalyst is washed with additional low volatility product to reclaim petroleum oil from the catalyst. K171/172 Spent Catalyst is then cooled using a lightweight oil and stockpiled while draining the lightweight oil until there are no free liquids (passes the paint filter test). K171/172 Spent Catalyst, once Accepted by Applicant at the Facility, is classified as Variance Spent Catalyst.

Further reclamation of Variance Spent Catalyst by Applicant entails blending loads of Variance K171/172 Spent Catalyst to produce a desired Reclaimed Metal. The blended Variance Spent Catalyst is calcined at temperatures between 800°F and 1200°F. Reclaimed Metal is tested to ensure that it meets product specifications. Reclaimed Metal that does not meet specifications is reprocessed.

The process employed by Applicant is similar to the processes employed by the mineral processing industry to prepare natural ores. Miners blend ores to improve the quality and marketability. Miners remove unwanted elements to the extent they can and assemble a saleable quantity of ore for shipment to maximize homogeneity and minimize transportation costs.

b. The value of the material after it has been reclaimed;

Applicant processes materials to homogenize to desired specifications and to concentrate the reclaimed metals.

F006 Filter Cake can be used by some smelters without further reclamation. More smelters can use the Reclaimed Metal produced by Applicant for which they will pay an elevated price.

The sales terms for the Reclaimed Metal are based on London Metal Exchange pricing at a percent discount to virgin materials.

c. The degree to which the reclaimed material is like an analogous raw material;

Typical content of mined ore for molybdenum, nickel, and cobalt is 0.5 percent to 3 percent. In 2011, molybdenum was produced domestically by ten mines. Molybdenum in the form of molybdenum metal or superalloys was recovered, but the amount was small. Although molybdenum is not recovered from scrap steel, recycling of steel alloys is significant, and some molybdenum content is reutilized. The amount of molybdenum recycled as part of new and old steel and other scrap may be as much as 30 percent of the apparent supply of molybdenum. The U.S. did not have any active nickel mines in 2010. Nickel is imported from Canada, Russia, Australia, Norway, and other countries. About 43 percent of nickel consumed was recovered from purchased scrap. Significant U.S. cobalt mine production has not been reported since 1971, and production of refined cobalt from imported nickel-copper-cobalt matte ceased in 1985. U.S. supply comprised imports, stock release and secondary materials (24 percent).

Typical content of F006 Filter Cake is 0 percent to 7.5 percent nickel, 0 percent to 7.5 percent copper, and 0 percent to 4.5 percent chromium.

Typical content of K171/172 Spent Catalyst is 10 percent to 13 percent molybdenum, 1 percent to 3 percent cobalt, and 1 percent to 3 percent nickel.

Typical content of Reclaimed Metal from Variance Filter Cake is 0 percent to 25 percent nickel, 0 percent to 25 percent copper, and 0 percent to 15 percent chromium.

Typical content of Reclaimed Metal from Variance Spent Catalyst is 16 percent to 19 percent molybdenum, 1 percent to 5 percent cobalt, and 1 percent to 5 percent nickel. If alumina was present in the K171/172 Spent Catalyst, the Reclaimed Metal content would be 55 percent to 65 percent alumina.

d. The extent to which an end market of the reclaimed material is guaranteed;

The produced Reclaimed Metal is suitable for use by stainless steel manufacturers, smelters, and catalyst manufacturers. For example, the initial receiver already uses similar reclaimed metals from other producers,

but the degree of refinement is less than what Applicant will produce. Furthermore, Applicant's Reclaimed Metals are a cheaper raw material (by 25 percent compared to mined metals) for the initial receiver, thus allowing the initial receiver to pursue new markets the initial receiver has been unable to break into primarily due to cost.

The total volume of metals to be consumed exceeds the amount of recycled metals, so the market for Reclaimed Metals is sound.

The Reclaimed Metal produced by Applicant will be an adequate and reliable source.

e. The extent to which the reclaimed material is handled to minimize loss; and

Applicant includes narrative information regarding the management of Variance Material and Reclaimed Metal at the Facility. To ensure proper handling of Variance Material and Reclaimed Metal, Applicant prepared and will implement the following plans and procedures: hazardous waste exclusion plan, hazardous material security plan, a description of material and handling procedures, pyrophoric handling plan, acceptance procedures, inspections, decontamination procedures, employee training, flood planning, and emergency spill procedures.

Variance Material and Reclaimed Metal is stored only in the Storage Warehouse. The Storage Warehouse concrete floor will be sealed with an impermeable polymer compatible with the Variance Material and Reclaimed Metal. Because the Storage Warehouse is within the 100-year flood plain of the Ohio River, the Storage Warehouse will be clad by six feet of steel around the base and steel plates will be welded across the door openings in the event of a flood to keep Variance Material and Reclaimed Metal from washing away. Variance Material will be stored in its transport container. Variance Filter Cake will also be stored in bulk in steel-lined bins.

Although liquid materials will not be Accepted by Applicant, measures will be taken to contain all liquids that have or may have come in contact with Variance Material and process them through the calciner. Except for the steel-lined bins, Variance Material will not be placed on the floor. Once Variance Material is placed in the feed hopper, the conveyance to and from the calciner is enclosed. Dust and vapors from the calciner are captured. Dust is re-processed through the calciner. Vapors from

processing Variance Spent Catalyst enter an acid recovery system. The acid recovery system generates gypsum as a secondary material. Applicant is pursuing clients for purchasing the gypsum. Reclaimed Metal is discharged directly into super sacks in a manner that does not release dust to the environment.

f. **Other relevant factors.**

Generators of K171/172 Spent Catalyst are seeking a way to reclaim the metals from their spent catalyst and then ship their material to an actual consumer or producer that will use it as a substitute raw material for their existing feed stock. Applicant's process and procedures will allow tracking of specific incoming and outgoing loads to assure the generator that the material is used as feed stock. In addition, petroleum companies are starting to 'lease' the catalyst. Therefore when the catalyst is spent, it is the responsibility of the manufacturer to arrange for disposal or reclamation/recycling.

The process generates a secondary material, gypsum, which can be beneficially used. Applicant has requested authorization to use gypsum in a manner that constitutes disposal (e.g. soil amendment, fill material) without having to obtain solid waste disposal permits and licenses.

7. Based upon the information submitted by the Applicant in the Application, the Director finds that F006 Filter Cake and K171/172 Spent Catalyst are not wastes when Accepted at the Facility for further reclamation and managed according to the conditions of this Variance.

V. GENERAL CONDITIONS

1. All activities undertaken by Applicant pursuant to this Variance shall be performed in accordance with the requirements of all applicable federal, state, and local laws, regulations, and ordinances.
2. Applicant shall construct, operate, and maintain all of the equipment and storage units associated with the reclamation process so as to minimize loss or release to the environment of Variance Material and Reclaimed Metal as generally described in the Application. Nothing in the preceding sentence, however, shall prohibit Applicant from constructing, operating, maintaining, repairing, improving, enhancing, or changing equipment or the structures of the physical plant associated with the reclamation process so long as Applicant's equipment, structures and reclamation process continue to minimize loss of material,

remains generally consistent and functionally equivalent to those described in the Application. In addition, Applicant shall comply with the following specific conditions:

- a. **Cost Estimate:** Applicant must submit a detailed written estimate, according to Attachment A of this Variance, of the cost of removing any Process Residuals, Variance Material, and Reclaimed Metal and decontaminating the units and areas used to store Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal.
- b. **Financial Assurance Mechanism:** Applicant shall, at least 30 days prior to accepting F006 Filter Cake or K171/172 Spent Catalyst, establish financial assurance in compliance with OAC rule 3745-55-43 and provide to Ohio EPA documentation of financial assurance which meets the wording requirements of OAC rule 3745-55-51, in at least the amount of the estimate, according to Section V.2.a. of this Variance, to remove Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal and decontaminate the units and areas used to store Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal. Applicant shall maintain continuous compliance with Section V.2.b. of this Variance and OAC rules 3745-55-43 and 3745-55-51 throughout the term of this Variance.

Note: For the purposes of complying with the financial assurance and cost estimate conditions of this Variance, the following terms shall be read in OAC rules 3745-55-43 and 3745-55-51 as defined below:

- i. "Closure" shall mean "removal and decontamination."
- ii. "Hazardous waste" shall mean "Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal."
- iii. "Owner/operator" shall mean "Applicant."
- iv. "Facility" shall mean "Facility."

c. **Manifest System:** Applicant shall:

- i. Sign the manifest and comply with OAC rule 3745-65-71 *Use of manifest system*, regarding the manifest. Each manifest shall be retained on-site at the Facility or Support Building for three years.

- ii. Comply with OAC rule 3745-65-76 *Unmanifested waste report*, when F006 Filter Cake or K171/172 Spent Catalyst is received at the Facility not accompanied by a hazardous waste manifest.
- d. **Acceptance Criteria:** Applicant shall only Accept at the Facility for reclamation Variance Material that contains at least 1.5 percent nickel, 1.0 percent molybdenum, or 1.5 percent cobalt.
- e. **Rejected F006 Filter Cake or K171/172 Spent Catalyst:** F006 Filter Cake or K171/172 Spent Catalyst that is rejected by Applicant shall be returned as soon as possible to the supplier, transported to a permitted hazardous waste storage, treatment, or disposal facility, or sent for legitimate recycling. The rejected F006 Filter Cake or K171/172 Spent Catalyst must be managed as hazardous waste in accordance with all applicable Ohio EPA hazardous waste laws and in accordance with Appendix 12 of the Application. Applicant may assume generator duties for the purpose of completing the manifest.
- f. **Hazardous Waste:** Process Residuals are not listed hazardous waste K171, K172 or F006. Applicant shall determine whether Process Residuals destined for disposal meet the definition of a characteristic hazardous waste, according to OAC rules 3745-51-20 to 3745-51-24, or are listed hazardous waste according to OAC rule 3745-51-03 (A)(2)(e). Process Residuals meeting the definition of a hazardous waste shall be managed according to ORC Chapter 3734 and the hazardous waste management rules promulgated thereunder.
- g. **Storage:** Applicant shall store Variance Material at the Facility only within the Storage Warehouse. The Storage Warehouse shall be constructed, operated, and maintained and inspected in accordance with OAC rules 3745-256-100 to 3745-256-102. In addition, the Storage Warehouse shall have exterior walls constructed of concrete for the bottom five and half feet and clad in quarter-inch steel. The remainder of each exterior wall shall be constructed of man-made material.
- h. **Storage:** Variance Material shall be stored in accordance with the following:
 - i. In the shipping container in which the Variance Material arrived and kept sealed except during transfer, inspection, or sampling.

- ii. In a steel-lined bin equipped with a liquid collection trough and sump pump.
- i. **Speculative Accumulation:** Applicant shall process, during the calendar year, not less than seventy-five percent by weight or volume of the amount of Variance Material present at the facility at the beginning of the calendar year and Applicant shall distribute into commerce for further reclamation, during the calendar year, not less than seventy-five percent by weight or volume of the amount of Reclaimed Metal present at the facility at the beginning of the calendar year.
- j. **Storage Capacity:** Applicant shall store at the Facility no more than the total amount of Process Residuals, Variance Material, and Reclaimed Metal designated in the cost estimate as required in Section V.2.a. of this Variance. The total amount of Process Residuals, Variance Material, and Reclaimed Metal stored at any one time at the facility shall not exceed 2000 tons.
- k. **Additional Storage Capacity:** If Applicant plans to increase the storage capacity of the amount of Process Residuals, Variance Material, or Reclaimed Metal stored at the Facility, Applicant shall submit a detailed written estimate in accordance with Attachment A of this Variance. The financial assurance mechanism as required by Section V.2.b. of this Variance shall be increased to an amount at least equal to the increased cost estimate prior to use of the increased storage capacity.
- l. **Emergency Response Plans:** Applicant shall maintain and revise as necessary the emergency response plan included in Appendix 20, the contingency plan included in Appendix 26, the pyrophoric materials handling plan included in Appendix 16, and the flood control plan included in Appendix 22 of the Application.
- m. **Emergency Response:** Applicant shall implement as necessary the emergency response plan included in Appendix 20, the contingency plan included in Appendix 26, the pyrophoric materials handling plan included in Appendix 16, and the flood control plan included in Appendix 22 of the Application.
- n. **Inspection:** Applicant shall maintain, and revise as necessary, facility inspection procedures and inspection report forms, in accordance with the requirements of Appendix 18 of the Application. The Facility, or areas thereof, shall be inspected a minimum of once each seven days.

- o. **Training:** Applicant shall maintain, revise as necessary, and implement an employee training program as described in Appendix 20 of the Application. The training components will include orientation, hazardous waste handling, emergency response, and housekeeping/safety inspection. Each employee handling incoming F006 Filter Cake or K171/172 Spent Catalyst shall be trained within the timeframes defined in OAC rules 3745-65-16(B) and (C).
- p. **Equipment Maintenance:** Applicant shall maintain in good working order the equipment used to store, handle, blend, convey and contain Variance Material. The equipment includes but is not limited to: tanks, shipping containers in use, bulk storage bins, liquid collection systems, blending equipment, the calciner and associated equipment, loading and unloading areas, sumps, piping and conveyance systems.
- q. **Reporting:** By March 1st of each year, Applicant shall prepare an annual report; the first report will be due March 1st 2014. Applicant shall submit the report to Ohio EPA, according to Section XIII of this Variance, in a paper report format of Applicant's choice or an electronic format agreed upon by the Applicant and Ohio EPA. The report shall include the following information:
 - i. Amounts of F006 Filter Cake and K171/172 Spent Catalyst Accepted from each supplier customer.
 - ii. Amounts of Variance Material and Reclaimed Metal present at the Facility on January 1 of the reported year.
 - iii. Amount of Reclaimed Metal produced and the amount distributed to each customer.
 - iv. Amounts of F006 Filter Cake and K171/172 Spent Catalyst rejected from each supplier customer.
 - v. Amounts of Reclaimed Metal rejected by Applicant's customers and the reasons why.
- r. **Renewal of Variance:** In the event that this Variance expires prior to a final action of the Director to renew or reissue this Variance, Applicant may continue to operate in accordance with the terms and conditions of the expired Variance until a new variance is issued or denied provided either of the following is applicable:

- i. Applicant submits a complete application for a renewal variance at least one hundred eighty days before the expiration date of this Variance unless permission for a later submittal date has been authorized by the Director prior to the expiration date of this Variance.
 - ii. Through no fault of the Applicant a new variance has not been issued pursuant to OAC rule 3745-50-23 on or before the expiration date of this Variance.
- s. **Notice:** Applicant shall provide a written notice to Ohio EPA, in accordance with Section XIII, within seven days after the date of the events described in Section XI, Paragraphs 1. and 2. occur.
- t. **Removal and Decontamination Plan (RDP):** Within 30 days after the date of an event described in Section XI, Applicant shall prepare and submit to Ohio EPA a Removal and Decontamination Plan (RDP) that meets the requirements in OAC rules 3745-66-11(A) and (B), 3745-66-97, and 3745-66-14, for all areas of the Facility where Variance Materials and Reclaimed Metals were managed and stored.
- u. **RDP Public Notice:** Applicant shall provide the public a notice for the opportunity to review and submit written comments on the RDP. The notice shall be published in a major local newspaper of general circulation in the area where the Facility is located. The notice shall provide that comments must be submitted within 30 days of the date of the notice to the following address:

Ohio Environmental Protection Agency
Division of Materials and Waste Management
Authorizing Actions & Engineering Unit
P.O. Box 1049
Columbus, Ohio 43216-1049
- v. **RDP Review and Approval:** The RDP is subject to Ohio EPA review and approval. Applicant shall submit the RDP to Ohio EPA according to Section XIII. If Ohio EPA does not approve the RDP and provides Applicant with a written statement of deficiencies, Applicant shall revise the RDP or submit a new RDP for approval that corrects the stated deficiencies within 30 days after receipt of such written statement. Ohio EPA may approve the RDP with modifications. If Ohio EPA modifies the RDP, the modified RDP becomes the approved RDP.

- w. **RDP Implementation:** Upon receipt of the approved RDP, Applicant shall implement the approved RDP, in accordance with the requirements of OAC rules 3745-66-11(A) and (B), 3745-66-97, and 3745-66-14, and the specifications and schedule in the approved RDP.
- x. **RDP Certification:** Within 30 days after completion of work required by the approved RDP, Applicant shall submit to Ohio EPA, for review and approval, a certification that the work was conducted in accordance with the approved RDP. The certification must be signed by Applicant and must follow the format in OAC rule 3745-50-42(D).

The signed certification must be submitted to Ohio EPA, in accordance with Section XIII. Ohio EPA retains the right to inspect the Facility and take samples, photographs and notes, access process records, logs, invoices, analytical data, etc., prior to, during, and subsequent to certification of the RDP. If after inspection and review of the Facility, Ohio EPA does not conclude that the Facility meets the conditions of the certified RDP, it shall deem the "certified" RDP invalid and cleanup of the Facility inadequate.

- y. **Invalidated RDP:** Within 30 days of notice that the "certified" RDP is invalid, Applicant shall prepare and submit a revised RDP to Ohio EPA indicating how it intends to correct the deficiencies or problems. Upon receipt of approval of the revised RDP, Applicant shall, within 45 days, implement the revised RDP and submit a signed, revised certification of cleanup to Ohio EPA. As illustrated above, Ohio EPA retains the right to inspect the Facility and Applicant's records to ascertain whether or not the Facility has satisfactorily been cleaned up.

VI. ACCESS TO INFORMATION

Applicant shall provide Ohio EPA, upon request and within 30 days unless an alternate time frame is agreed upon, in writing, by the Applicant and Ohio EPA, copies of all information relating to this Variance within its respective possession or control, or the possession or control of its respective contractors or agents, including but not limited to documents and information related to the issuance, use and implementation of this Variance.

Applicant may assert a claim that documents and other information submitted to Ohio EPA pursuant to this Variance are confidential under the provisions of OAC rule 3745-50-30. If no such claim of confidentiality accompanies the documents and other

information when submitted to Ohio EPA, the documents and other information may be made available to the public without notice to Applicant.

Nothing in this Section shall be construed as in any way limiting Ohio EPA's access, inspection and information gathering rights and authorities, including enforcement authorities related thereto, under any applicable statute or regulation.

VII. ACCESS TO SITE

Applicant shall provide Ohio EPA with access, at all reasonable times, including during normal business hours, to the Facility and to the Support Building. Access under this Variance shall be for the purpose of conducting any activity related to this Variance or Ohio EPA's regulatory responsibilities, including but not limited to, the following:

1. Monitoring the implementation or use of this Variance.
2. Conducting sampling.
3. Inspecting and copying records, contracts, and other documents and information related to the implementation or use of this Variance.
4. Verifying any data and other information submitted to Ohio EPA.

Nothing in this Section shall be construed as in any way limiting Ohio EPA's access, inspection and information gathering rights and authorities, including enforcement authorities related thereto, under any applicable statute or regulation.

VIII. OTHER APPLICABLE LAWS

All actions taken pursuant to this Variance shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. This Variance does not waive or compromise the applicability and enforcement of any other statutes or regulations applicable to Applicant.

IX. OTHER CLAIMS

Nothing in this Variance shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation, not a party to this Variance, for any liability arising from, or related to, the operation of Applicant's Facility.

X. REVOCATION

The following are causes for revoking this Variance during its term:

1. Noncompliance by the Applicant with any condition of this Variance.
2. The Applicant's failure in the Application or during the Variance issuance process to disclose fully all relevant facts, or the Applicant's misrepresentation of any relevant facts at any time.
3. A determination that the Facility is operated in a manner that endangers human health or the environment.

XI. TERMINATION

Unless otherwise terminated by the Director, this Variance shall terminate ten years after the effective date of this Variance, or when either of the following events occurs:

1. Applicant no longer owns or operates the Facility.
2. Director revokes the Variance.

XII. MODIFICATIONS

This Variance may be modified by agreement of the parties hereto. Modifications shall be in writing and shall be effective on the date entered in the journal of the Director of Ohio EPA.

XIII. NOTICE

All documents required to be submitted by Applicant pursuant to this Variance shall be addressed to:

Ohio Environmental Protection Agency
Southeast District Office
Division of Materials and Waste Management
2195 Front Street
Logan, Ohio 43138
Attn: DMWM Manager

and Ohio EPA Central Office at the following address:

Variance from Classification as a Waste
Skye Metal Recovery Inc.
Page 16 of 18

For mailings, use the post office box number:

Ohio Environmental Protection Agency
Lazarus Government Center
Division of Materials and Waste Management
P.O. Box 1049
Columbus, Ohio 43216-1049

For deliveries to the building:

Ohio Environmental Protection Agency
Lazarus Government Center
Division of Materials and Waste Management
50 West Town Street
Columbus, Ohio 43215

or to such persons and addresses as may hereafter be otherwise specified in writing by Ohio EPA.

XIV. RESERVATION OF RIGHTS

Ohio EPA and Applicant each reserve all rights, privileges and causes of action, except as specifically waived in Section XV. of these Orders.

XV. WAIVER

Without admission of any of the findings made under this Variance, Applicant agrees that this Variance is lawful and reasonable and agrees to comply with the terms and conditions of this Variance.

Applicant hereby waives the right to appeal the issuance, terms and conditions, and service of this Variance, and Applicant hereby waives any and all rights Applicant may have to seek administrative or judicial review of this Variance either in law or equity.

Notwithstanding the preceding, Ohio EPA and Applicant agree that if this Variance is appealed by any other party to the Environmental Review Appeals Commission, or any court, Applicant retains the right to intervene and participate in such appeal. In such an event, Applicant shall continue to comply with the terms and conditions of this Variance notwithstanding such appeal and intervention unless this Variance is stayed, vacated or modified.

XVI. EFFECTIVE DATE

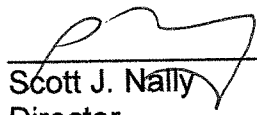
The effective date of this Variance is the date this Variance is entered into the Ohio EPA Director's journal.

XVII. SIGNATORY AUTHORITY

Each undersigned representative of a party to this Variance certifies that he or she is fully authorized to enter into this Variance and to legally bind such party to this Variance.

IT IS SO ORDERED AND AGREED:

Ohio Environmental Protection Agency



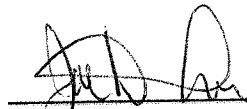
Scott J. Nally
Director

2/26/13

Date

IT IS SO AGREED:

Skye Metal Recovery Inc.



Signature

2/21/13

Date

Joe DANNEKER

Printed or Typed Name

PRESIDENT

Title

ATTACHMENT A: Financial Requirements for Applicant

Cost estimate.

- (a) Applicant must have a detailed written estimate, in current dollars, of the cost of disposing of F006 Filter Cake and K171/172 Spent Catalyst as listed or characteristic hazardous waste, and the cost of decontaminating the units and areas where Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal were stored.
- (1) The estimate must equal the cost of conducting the activities described in paragraph (a) of this section at the point when the extent and manner of Applicant's operation would make these activities the most expensive.
 - (2) The cost estimate must be based on the costs to Applicant of hiring a third party to conduct these activities. A third party is a party who is neither a parent nor a subsidiary of Applicant.
 - (3) The cost estimate may not incorporate any salvage value that may be realized with the sale of the Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal, facility structures or equipment, land, or other assets associated with the Facility.
 - (4) Applicant may not incorporate a zero cost for Process Residuals, Variance Filter Cake, Variance Spent Catalyst, and Reclaimed Metal that might have economic value.
- (b) During the active life of the Facility, Applicant must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with OAC rule 3745-55-43. For owners and operators using the financial test or corporate guarantee, the cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the director as specified in OAC rule 3745-55-43(F)(3). The adjustment may be made by recalculating the cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in paragraphs (b) (1) and (2) of this Attachment. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
- (1) The first adjustment is made by multiplying the cost estimate by the inflation factor. The result is the adjusted cost estimate.
 - (2) Subsequent adjustments are made by multiplying the latest adjusted cost estimate by the latest inflation factor.
- (c) During the active life of the Facility, Applicant must revise the cost estimate no later than 30 days after a change in Applicant's operating plan or design that would increase the costs of conducting the activities described in paragraph (a) or no later than 60 days after an unexpected event which increases the cost of conducting the activities described in paragraph (a) of this section. The revised cost estimate must be adjusted for inflation as specified in paragraph (b) of this section.
- (d) Applicant must keep the following at the Facility during the operating life of the facility: The latest cost estimate prepared in accordance with paragraphs (a) and (c) and, when this estimate has been adjusted in accordance with paragraph (b), the latest adjusted cost estimate.



Division of Materials and Waste Management Response to Comments

Project: Variance from Classification as a Waste for Skye Metal Recovery Inc.

Agency Contacts for this Project

Division Contact: Annette De Havilland, DMWM at 614/728-5373 or Annette.dehavilland@epa.state.oh.us

Ohio EPA held a 30-day public comment period ending on January 14, 2013 regarding Ohio EPA's tentative decision to grant a variance from classification as a waste for Skye Metal Recovery Inc. to be located in Marietta Ohio. This document summarizes the comments and questions received.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format.

Support for issuance

Comment 1: This project will create approximately 30 jobs over the next year. In addition, the company will be investing over \$1.2 million dollars on the facility and infrastructure. Their plan is to expand to over 120 jobs within the next 5 years. (Misty Casto, Buckeye Hills-HVRDD & Area Agency on Aging)

Response 1: No response required.

Comment 2: Their process will help the environment since it will take material that is currently being land filled and completely recycle it to much needed raw materials which will be used by their customers to create other

products. (Misty Casto, Buckeye Hills-HVRDD & Area Agency on Aging)

Response 2: No response required.

Application was heavily redacted

Comment 3: The publically available copy of the application is so extensively redacted, the public cannot determine if variance criteria were met. (World Resources Company; Gulf Chemical & Metallurgical Corporation; US EPA)

Response 3: Skye amended their request on January 25, 2013, the result is a version with fewer redactions. The revised redacted version is posted on the DMWM site <http://www.epa.ohio.gov/Default.aspx?alias=www.epa.ohio.gov/dmwm> under the stakeholder tab.

Comment 4: It is not clear whether the information redacted is appropriately withheld on the basis of "trade secret." (Gulf Chemical & Metallurgical Corporation)

Response 4: Skye has exercised their rights to protect trade secrets pursuant to OAC rules 3745-50-30 and 3745-49-03. On January 25, 2013, Skye amended their request. The request is based on the following three criteria:

- (1) Supplier information – Companies and individuals to include names, addresses, email addresses.
- (2) Customer information – Companies and individuals to include names, addresses, email addresses.
- (3) Analytical/process information – Their process for removal of phosphorus and sulfur.

Ohio EPA is in the process of making a determination on the trade secret request.

Comment 5: A public records request for information was only partially fulfilled at the time the public comment period expired. A request to extend the comment period was denied. The absence of this information coupled with the refusal to extend the comment period further compromises the ability to provide meaningful comment on the draft variance. (Gulf Chemical & Metallurgical Corporation)

Response 5: Ohio EPA believes there was sufficient time and information made available for the parties to provide meaningful comment, as evidenced by the comment received from the parties.

National policy requiring consistency among authorized states

Comment 6: **National policy (pursuant to the Vaille Memorandum) is that the blending of hazardous waste is treatment that requires a RCRA Part B permit and storage of hazardous waste during such recycling requires a RCRA Part B storage permit. Skye engages in partial reclamation that is both waste treatment and storage, therefore Skye is required to operate under a RCRA Part B permit for both activities. (World Resources Company)**

Response 6: The memorandum provided is actually a request from Rich Vaille, Chief, Waste Compliance Branch, Region IX, US EPA to other US EPA Region Chiefs for their interpretations and opinions regarding the regulation of F006 that is being recycled. The memorandum contains US EPA's Region IX's regulatory analysis of how F006 is regulated under the hazardous waste rules when recycled. The memorandum does not establish policy. Furthermore, even if it were policy, Ohio EPA cannot require and enforce more stringent regulatory standards through the use of policy or guidance.

The proposed variance for Skye does not deviate from the "national policy." The national policy for the recycling of F006 is established in the hazardous waste rules. We agree that when F006 is recycled by reclamation it is impacted by the hazardous waste rules and recycling facilities are subject to regulation under those rules.

Generally, the owner/operator of a facility that reclaims a listed hazardous waste is required to obtain a hazardous waste permit if the material is stored prior to reclamation. Ohio's hazardous waste rules also allow for the granting of variances from classification as a waste for hazardous wastes that are recycled in certain ways. Absent a variance, Skye would require a hazardous waste storage permit. However, Ohio EPA's review of the application for a variance from the classification as a waste for hazardous secondary materials that generators reclaim and is further reclaimed by Skye supports Ohio EPA's grant of a variance.

The variance that applies to the listed hazardous wastes that Skyl reclaims is a variance from the classification as a waste for material that has been reclaimed but needs to be further reclaimed before a final product is produced. The criteria for this variance are found in Ohio Administrative Code rule 3745-50-24. Ohio EPA is authorized for this rule and is responsible for interpreting, implementing, and enforcing the rule. With such a variance, Skyl may operate lawfully, without obtaining a permit for storage.

Comment 7: **F006 recycling involves multi-state operations. Deviation from US EPA's national policy will provide significant operational and cost advantages to Skyl, to the disadvantage of other F006 recyclers. (World Resources Company)**

Response 7: As noted in the response to Comment #6 above, the "national policy" for the recycling of F006 is established in the hazardous waste rules.

One purpose of the variances from classification as a waste is to tailor the operating and material management requirements for recycling facilities where the recycling of the hazardous secondary material does not resemble waste management but yet the secondary material is still subject to regulation under the hazardous waste rules. Such a variance is applicable to hazardous wastes reclaimed by Skyl since the metal content of the secondary material reclaimed and the processes used are equivalent to those found in the mineral processing industry, and do not resemble waste management. Skyl's acceptance and processing of the hazardous secondary materials are analogous to ore beneficiation which is not regulated under the hazardous waste regulations.

Note that Ohio EPA, as being responsible for interpreting, implementing, and enforcing the rule, has been consistent in applying the variance standards within Ohio. Consideration of significant operational and cost advantages or disadvantages is not a variance criterion. Ohio EPA does not consider these factors as relevant to issuance of the variance.

Comment 8: **To address inconsistent application of variance requirements, US EPA has proposed more stringent changes to the federal variance provision. Ohio EPA**

should defer issuance until the federal rulemaking has been finalized, or make the variance expire either at the time Ohio adopts the rules to implement the more stringent changes, or if the variance contradicts or is less stringent than the federal rule. (US EPA; Gulf Chemical & Metallurgical Corporation)

Response 8: Termination provisions in the variance (Section XI), states that the variance will terminate ten years after the effective date of the variance, or if the director revokes the variance. Ohio EPA believes it is inappropriate to delay action on an approvable request in order to wait on rule development. Especially as rule development can be delayed, making for a lengthy process with no known deadline for implementation. Should the updated variance rule be more stringent or contradict the issued variance, the director has the discretion to revoke the variance. Ohio EPA believes this provision provides adequate means to balance the ability of Skye to orderly manage their materials and their business, with the requirement to comply with regulations protective of human health and the environment.

Relevant criteria for issuing a variance are not satisfied

Comment 9: Incoming waste have undergone only a minimal degree of processing at the generating facility (dewatering), and that significantly more processing is needed to result in a product suitable for use by smelters. Whereas US EPA has stated that the initial reclamation step should be so substantial that the resulting material is more commodity-like than waste-like even though no end-product has been recovered. Therefore the criterion regarding degree of processing has not been met. (World Resources Company)

Response 9: The variance rules are applicable to secondary materials that have been reclaimed and are destined for further reclamation to produce the final product. Nothing in the variance rules requires that the initial reclamation step be so substantial that the resulting material is more commodity-like than waste-like. The adopted regulatory requirement is that the secondary material be reclaimed. The definition of reclaimed is located in OAC rule 3745-51-01 and states "A material is reclaimed if it is processed to recover a useable product, or if it is regenerated." Furthermore, US EPA has stated specific to dewatered F006 sludge, that they can be

eligible for a partial reclamation variance when destined for reclamation. See the following EPA letters at RCRA Online – PPC 9441.1996(05) and 9441.1995(24).

The hazardous secondary materials that Skyl accepts has been reclaimed by dewatering and contains a metal content equal to or greater than that of metal containing ore reserves that are mined. Since the reclaimed material will be reclaimed by Skyl, and then a smelter, and a final product recovered, a variance from the classification as a waste is applicable to the hazardous secondary materials accepted by Skyl.

Comment 10: **Although the metal concentrate produced by Skyl from the incoming materials may have economic value, this is not true regarding the incoming waste. Therefore the criterion regarding the value of the material after it has been reclaimed has not been met. (World Resources Company)**

Response 10: The hazardous secondary materials that Skyl accepts has been reclaimed by dewatering and contains a metal content equal to or greater than that of metal containing ore reserves that are mined. Since the reclaimed material, which has economic value, will be further reclaimed by Skyl, and then a smelter or manufacturer, and a final product recovered, a variance from the classification as a waste is applicable to the hazardous secondary materials accepted by Skyl.

Comment 11: **None of the information provides any support that the incoming wastes are like analogous raw material. While the concentrations of the recoverable metals found in the waste may exceed the concentrations of metals in some virgin ores, this conclusion is not relevant to the analysis of whether the incoming material is commodity-like. Incoming material is commodity-like only if it can be substituted for a material that is smelter ready. Therefore the criterion regarding the reclaimed material being like an analogous raw material has not been met. (World Resources Company)**

Response 11: Ohio EPA believes that if a certain metal content of ore is viewed by commerce to be a commodity and valuable enough to extract from the earth, then wastes with similar metal content are commodity-like and reclamation of the metals should be promoted. Note that ore reserves are not

smelter ready either, yet are considered commodities. Ore reserves must also be processed, some using methods such as used by Skye. Such ore beneficiation is not regulated under the hazardous waste regulations.

The hazardous secondary materials accepted by Skye contain a nickel, cobalt, and molybdenum content equal to or greater than that of ore reserves that have economic value and are mined. Therefore, the reclaimed hazardous secondary materials are commodity-like. Furthermore, the metal content of the secondary material reclaimed and the processes used are equivalent to those found in the mineral processing industry, and do not resemble waste management.

Comment 12: **That the reclaimed metal produced by Skye will be suitable to stainless steel manufacturers, smelters, and catalyst manufacturers is relevant to issuing a variance for the outgoing material, but is not relevant to the analysis of the incoming waste. Therefore the criterion regarding guaranteed end markets for the reclaimed material has not been met. (World Resources Company)**

Response 12: The variance rules are applicable to secondary materials that have been reclaimed and are destined for further reclamation to produce the final product. Nothing in the variance rules requires that the initial reclamation step be so substantial that the resulting material is guaranteed an end market (e.g. production of final products).

Skye has met this criterion by demonstrating that the incoming material is commodity-like (i.e. it contains a metal content equal to or greater than that of metal containing ore reserves that are mined); that they have a contract with a supplier to process certain metal-bearing materials generated by petroleum refineries, non-plating industrial facilities, and non-food industry generators; and that they have an initial receiver who produces a variety of metal alloys and steel products

Therefore a variance from the classification as a waste is applicable to the hazardous secondary materials accepted by Skye.

Comment 13: **The criterion regarding handling the material to minimize loss has not been met because (1) the**

information related to proposed handling practices is redacted such that a proper evaluation cannot be performed, and (2) these materials are not commodity-like and therefore must be permitted under RCRA to ensure proper safeguards are in place. (World Resources Company)

Response 13: Regarding redaction of the variance request, please refer to the response for Comment #3.

Regarding whether these materials are commodity-like, please refer to the responses to Comment #9 and Comment #11.

Comment 14: **The description provided justifies the variance on the basis that the generators of the spent catalysts are seeking ways to reclaim the metals, and that the process generates a secondary material. However, none of this provides any support for why the incoming materials should be granted a variance from classification as a solid waste. (World Resources Company)**

Response 14: The variance rules are applicable to secondary materials that have been reclaimed and are destined for further reclamation to produce the final product. The only criterion addressing the initial reclamation is to consider the degree of processing the material has undergone and the degree of further processing that is required. The adopted regulatory requirement is that the secondary material must be reclaimed. The definition of reclaimed is located in OAC rule 3745-51-01 and states "A material is reclaimed if it is processed to recover a useable product, or if it is regenerated."

The filter cake from electroplating operations is reclaimed by the generator by dewatering. The metals contained in the filter cake include nickel. The spent petroleum refining catalyst is reclaimed by the generator to recover crude oil prior to sending the catalyst for metals recovery. The metals contained in the spent catalyst include molybdenum and either cobalt or nickel.

The hazardous secondary materials accepted by Skye contain a nickel, cobalt, and molybdenum content equal to or greater than that of ore reserves that have economic value

and are mined. Therefore, the reclaimed hazardous secondary materials are commodity-like. Furthermore, the metal content of the secondary material reclaimed and the processes used are equivalent to those found in the mineral processing industry, and do not resemble waste management.

End of Response to Comments