



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

Barbara A. Lee, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806



Edmund G. Brown Jr.
Governor

November 30, 2017

Ms. Shawn Soderberg
Executive Vice President, General Counsel and Secretary
Bloom Energy
1299 Orleans Drive
Sunnyvale, California 94089

Dear Ms. Soderberg:

This letter is in response to Bloom Energy's (Bloom) request that the Department of Toxic Substances Control (DTSC) confirm the regulatory status of Bloom's spent desulfurization units when sent for recycling to a facility in Indiana. DTSC has determined, based on available information as discussed below, that Bloom's spent desulfurization units may qualify as excluded recyclable material (ERM) when recycled at the ShoreMet, L.L.C. (ShoreMet) a recycling facility in Indiana, provided specified conditions are met.

Basis for Determination

On February 24, 2017, the Indiana Department of Environmental Management (IDEM) issued an interpretation letter to ShoreMet. ShoreMet was seeking IDEM's concurrence that spent media within Bloom's desulfurization units that are recycled in its manufacturing process would be considered recycled by being used or reused in the production of a product as specified in Code of Federal Regulations, title 40, section 261.2(e)(1)(i). IDEM staff visited the facility and verified that ShoreMet's recycling activities more closely resemble use or reuse rather than reclamation. It was determined that Bloom's spent desulfurization units were excluded from hazardous waste requirements when sent to ShoreMet to be recycled in the manner described. A copy of the IDEM letter is enclosed.

On March 3, 2017, Bloom contacted DTSC requesting its concurrence with IDEM's interpretation letter. On April 21, 2017, while DTSC was researching and evaluating Bloom's request, the United States Environmental Protection Agency (US EPA) issued an interpretation letter to Mr. Ken Kastner, representing Bloom. Mr. Kastner had requested that US EPA concur with IDEM's determination that Bloom's spent desulfurization units were excluded from hazardous waste requirements when sent to ShoreMet to be recycled in the manner described. US EPA, after reviewing the available information, including the facts as presented by IDEM in its site visit report, concurred with IDEM's determination. A copy of the US EPA letter is enclosed.

Determination

DTSC has reviewed IDEM's and US EPA's interpretative letters and concurs with their interpretations, with the same limitation expressed by US EPA in its letter: DTSC has not physically inspected ShoreMet's recycling operations in Indiana, and is relying on the facts

Ms. Shawn Soderberg
November 30, 2017
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as stated by IDEM. Based on those facts, the described recycling of the spent desulfurization units may qualify the spent media within the units as excluded recyclable material (ERM) under California Health and Safety Code section 25143.2, subsection (b), provided the conditions specified in that statute are met, as well as the requirements in Health and Safety Code sections 25143.9 and 25143.10. A copy of the code sections is enclosed for your reference.

Any person in California who claims a material qualifies as an ERM is responsible for ensuring all relevant conditions are met. The Certified Unified Program Agencies (CUPAs) are local agencies in California that regulate businesses that generate hazardous wastes and are responsible for overseeing hazardous waste generator activities. Generators of spent desulfurization units that seek to manage those units as ERM should contact the CUPA with jurisdiction in their area to ensure the planned management practices at their site are in compliance with the relevant conditions. DTSC supports any efforts CUPAs may consider necessary to obtain information they may need to assess compliance at the sites where the spent desulfurization units are generated. This includes information regarding which entity at each site is responsible for meeting the ERM conditions and maintaining the required documentation.

Thank you for your request. If you have any additional questions or need further clarification regarding the content of this letter, please feel free to contact Mr. Kevin Sanchez of my staff at (916) 322-8677 or Kevin.Sanchez@dtsc.ca.gov.

Sincerely,



Rick Brausch, Chief
Policy and Program Support Division
Hazardous Waste Management Program

Enclosures

cc: Mr. Kevin Sanchez
Senior Environmental Scientist
Policy Implementation and Support Branch
Policy and Program Support Division
Hazardous Waste Management Program
1001 I Street, 11th Floor
P.O. Box 806
Sacramento, California 95812-0806

Health and Safety Code

Health and Safety Code, division 20, chapter 6.5, article 4

Section 25143.2.

(a) Recyclable materials are subject to this chapter and the regulations adopted by the department to implement this chapter that apply to hazardous wastes, unless the department issues a variance pursuant to Section 25143, or except as provided otherwise in subdivision (b), (c), or (d) or in the regulations adopted by the department pursuant to Sections 25150 and 25151.

(b) Except as otherwise provided in subdivisions (e), (f), and (g), recyclable material that is managed in accordance with Section 25143.9 and is or will be recycled by any of the following methods shall be excluded from classification as a waste:

- (1) Used or reused as an ingredient in an industrial process to make a product if the material is not being reclaimed.
- (2) Used or reused as a safe and effective substitute for commercial products if the material is not being reclaimed.
- (3) Returned to the original process from which the material was generated, without first being reclaimed, if the material is returned as a substitute for raw material feedstock, and the process uses raw materials as principal feedstocks.

(e) Notwithstanding subdivisions (b), (c), and (d), all the following recyclable materials are hazardous wastes and subject to full regulation under this chapter, even if the recycling involves use, reuse, or return to the original process as described in subdivision (b), and even if the recycling involves activities or materials described in subdivisions (c) and (d):

- (1) Materials that are a RCRA hazardous waste, as defined in Section 25120.2, used in a manner constituting disposal, or used to produce products that are applied to the land, including, but not limited to, materials used to produce a fertilizer, soil amendment, agricultural mineral, or an auxiliary soil and plant substance.
- (2) Materials that are a non-RCRA hazardous waste, as defined in Section 25117.9, and used in a manner constituting disposal or used to produce products that are applied to the land as a fertilizer, soil amendment, agricultural mineral, or an auxiliary soil and plant substance. The department may adopt regulations to exclude materials from regulation pursuant to this paragraph.
- (3) Materials burned for energy recovery, used to produce a fuel, or contained in fuels, except materials exempted under paragraph (1) of subdivision (c) or excluded under subparagraph (B), (C), or (D) of paragraph (2) of subdivision (d).
- (4) Materials accumulated speculatively.
- (5) Materials determined to be inherently waste-like pursuant to regulations adopted by the department.
- (6) Used or spent etchants, stripping solutions, and plating solutions that are transported to an offsite facility operated by a person other than the generator and either of the following applies:

(A) The etchants or solutions are no longer fit for their originally purchased or manufactured purpose.

(B) If the etchants or solutions are reused, the generator and the user cannot document that they are used for their originally purchased or manufactured purpose without prior treatment.

(7) Used oil, as defined in subdivision (a) of Section 25250.1, unless one of the following applies:

(A) The used oil is excluded under subparagraph (B) or (C) of paragraph (2) of subdivision (d), paragraph (4) of subdivision (d), subdivision (b) of Section 25250.1, or Section 25250.3, and is managed in accordance with the applicable requirements of Part 279 (commencing with Section 279.1) of Title 40 of the Code of Federal Regulations.

(B) The used oil is used or reused on the site where it was generated or is excluded under paragraph (3) of subdivision (d), is managed in accordance with the applicable requirements of Part 279 (commencing with Section 279.1) of Title 40 of the Code of Federal Regulations, and is not any of the following:

(i) Used in a manner constituting disposal or used to produce a product that is applied to land.

(ii) Burned for energy recovery or used to produce a fuel unless the used oil is excluded under subparagraph (B) or (C) of paragraph (2) of subdivision (d).

(iii) Accumulated speculatively.

(iv) Determined to be inherently waste-like pursuant to regulations adopted by the department.

(f) (1) Any person who manages a recyclable material under a claim that the material qualifies for exclusion or exemption pursuant to this section shall provide, upon request, to the department, the California Environmental Protection Agency, or any local agency or official authorized to bring an action as provided in Section 25180, all of the following information:

(A) The name, street and mailing address, and telephone number of the owner or operator of any facility that manages the material.

(B) Any other information related to the management by that person of the material requested by the department, the California Environmental Protection Agency, or the authorized local agency or official.

(2) Any person claiming an exclusion or an exemption pursuant to this section shall maintain adequate records to demonstrate to the satisfaction of the requesting agency or official that there is a known market or disposition for the material, and that the requirements of any exemption or exclusion pursuant to this section are met.

(3) For purposes of determining that the conditions for exclusion from classification as a waste pursuant to this section are met, any person, facility, site, or vehicle engaged in the management of a material under a claim that the material is excluded from classification as a waste pursuant to this section is subject to Section 25185.

(g) For purposes of Chapter 6.8 (commencing with Section 25300), recyclable materials excluded from classification as a waste pursuant to this section are not excluded from the definition of hazardous substances in subdivision (g) of Section 25316.

Section 25143.9.

A recyclable material shall not be excluded from classification as a waste pursuant to subdivision (b) or (d) of Section 25143.2, unless all of the following requirements are met:

- (a) If the material is held in a container or tank, the container or tank is labeled, marked, and placarded in accordance with the department's hazardous waste labeling, marking, and placarding requirements which are applicable to generators, except that the container or tank shall be labeled or marked clearly with the words "Excluded Recyclable Material" instead of the words "Hazardous Waste," and manifest document numbers are not applicable. If the material is used oil, the containers, aboveground tanks, and fill pipes used to transfer oil into underground storage tanks shall also be labeled or clearly marked with the words "Used Oil".
- (b) The owner or operator of the business location where the material is located has a business plan that meets the requirements of Section 25504, including, but not limited to, emergency response plans and procedures, as described in subdivision (b) of Section 25504, which specifically address the material or that meet the department's emergency response and contingency requirements which are applicable to generators of hazardous waste.
- (c) The material shall be stored and handled in accordance with all local ordinances and codes, including, but not limited to, fire codes, governing the storage and handling of the hazardous material. If a local jurisdiction does not have an ordinance or code regulating the storage of the material, including, but not limited to, an ordinance or code requiring secondary containment for hazardous material storage areas, the material shall be stored in tanks, waste piles, or containers meeting the department's interim status regulations establishing design standards applicable to tanks, waste piles, or containers storing hazardous waste.
- (d) If the material is being exported to a foreign country, the person exporting the material shall meet the requirements of Section 25162.1.

Section 25143.10.

(a) Except as provided in subdivisions (e) and (f), any person who recycles more than 100 kilograms per month of recyclable material under a claim that the material qualifies for exclusion or exemption pursuant to Section 25143.2 shall, on or before July 1, 1992, and every two years thereafter, provide to the local officer or agency authorized to enforce this section pursuant to subdivision (a) of Section 25180, all of the following information, using the format established pursuant to subdivision (d), in writing:

- (1) The name, site address, mailing address, and telephone number of the owner or operator of any facility that recycles the material.
- (2) The name and address of the generator of the recyclable material.
- (3) Documentation that the requirements of any exemptions or exclusions pursuant to Section 25143.2 are met, including, but not limited to, all of the following:
 - (A) Where a person who recycles the material is not the same person who generated the recyclable material, documentation that there is a known market for disposition of the recyclable material and any products manufactured from the recyclable material.
 - (B) Where the basis for the exclusion is that the recyclable material is used or reused to make a product or as a safe and effective substitute for a commercial

product, a general description of the material and products, identification of the constituents or group of constituents, and their approximate concentrations, that would render the material or product hazardous under the regulations adopted pursuant to Sections 25140 and 25141, if it were a waste, and the means by which the material is beneficially used.

(b) Except as provided in Section 25404.5, the governing body of a city or county may adopt an ordinance or resolution pursuant to Section 101325 to pay for the actual expenses of the activities carried out by local officers or agencies pursuant to subdivision (a).

(c) If a person who recycles material under a claim that the material qualifies for exclusion or exemption pursuant to Section 25143.2 is not the same person who generated the recyclable material, the person who recycles the material shall, on or before July 1, 1992, and every two years thereafter, provide a copy of the information required to be submitted pursuant to subdivision (a) to the generator of the recyclable material.

(d) The person providing the information required by subdivision (a) shall use a format developed by the California Conference of Directors of Environmental Health in consultation with the department. The department shall distribute the format to local officers and agencies authorized to enforce this section pursuant to subdivision (a) of Section 25180.

(e) A recyclable material generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated nonwaste treatment manufacturing unit is not subject to the requirements of this section, until the recyclable material exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the material remains in the unit for more than 90 days after the unit ceases to be operated for manufacturing, storage, or transportation of the product or raw material.

(f) A local officer or agency authorized to enforce this section pursuant to subdivision (a) of Section 25180 may exempt from subdivision (a) any person who operates antifreeze recycling units or solvent distillation units, where the recycled material is returned to productive use at the site of generation, or may require less information than that required under subdivision (a) from the person.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 21 2017

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

NOW THE
OFFICE OF LAND AND
EMERGENCY MANAGEMENT

Ken Kastner
Hogan Lovells US LLP
Columbia Square
555 Thirteen Street, NW
Washington D.C. 20004

Dear Mr. Kastner,

Thank you for your letter dated March 21, 2017, on behalf of Bloom Energy, requesting U.S. EPA's opinion on an interpretation made by the Indiana Department of Environmental Management (IDEM) stating the use of spent copper oxide catalyst media in the production of assorted copper compounds at the ShoreMet facility in Valparaiso, Indiana, is excluded from hazardous waste regulation under the exclusion found at 40 CFR 261.2(e)(1)(i).

The exclusion at 40 CFR 261.2(e)(1)(i) states that a material is not a solid waste when it is "used or reused in an industrial process to make a product, provided the materials are not reclaimed." Under 40 CFR 261.1(c)(5)(i), a material is "used or reused" if it is employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material would not satisfy this condition if distinct components of the material are recovered as separate end products.

As described by IDEM inspectors and based on their observations of the process¹, ShoreMet would introduce the spent copper oxide catalyst as a substitute for scrap copper in a chemical digestion process in order to produce a copper solution. There would be no reclamation of the spent copper oxide catalyst prior to being introduced into the digester and the digestion process would be the same regardless of the source of copper. The copper solution would then be used to manufacture a variety of copper compounds, including copper amine, copper oxide, basic copper carbonate, and copper chloride dehydrate. Waste generated from this process would be subject to a hazardous waste determination under 40 CFR 262.11.

A determination as to whether a particular process constitutes "use or reuse" of a material under the regulations is dependent on a number of case-specific considerations. EPA has historically deferred this

¹ Indiana Department of Environmental Management, Letter to Mr. Danny Mislenkov, ShoreMet, LCC., "Re: Proposed Project Utilizing RCRA 'Ingredient' Exclusion," February 24, 2017.

type of determination to states authorized to administer and enforce the RCRA program under section 3006 (or to EPA regions where the state is not authorized). We note that under RCRA § 3009, authorized states may also impose requirements that are more stringent than the federal program. Thus the authorized state, in this case Indiana, is in the best position to evaluate the site-specific circumstances at the ShoreMet facility that enter into this kind of decision and is the most appropriate authority to administer the state program. While EPA has not independently confirmed the site-specific information, based on the information provided by the state site visit report, we believe that IDEM's interpretation of how the exclusion at 40 CFR 261.2(e)(1)(i) applies to the ShoreMet facility recycling operations is consistent with the language of the provision.

If you have any questions, please contact Tracy Atagi of my staff at 703-308-8672 or atagi.tracy@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Barnes Johnson". The signature is written in a cursive, flowing style.

Barnes Johnson, Director

Office of Resource Conservation and Recovery



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

February 24, 2017

Mr. Danny Mislenkov
ShoreMet, L.L.C.
3601 Enterprise Avenue
Valparaiso, Indiana 46383

Re: Proposed Project Utilizing RCRA
“Ingredient” Exclusion
ShoreMet, L.L.C.
EPA ID No.: INR000103721
Valparaiso, Porter County

Dear Mr. Mislenkov:

This letter is in response to your January 31, 2017, request for a concurrence for ShoreMet, L.L.C. (ShoreMet) accepting and utilizing spent copper oxide catalyst media as an ingredient in the production of a product.

ShoreMet currently uses copper metal (scrap metal) as a source of copper for the production of assorted copper compounds. Copper metal is digested (chemically dissolved) into solution and is utilized in the manufacture of copper compounds including; copper amine carbonate, copper oxide, basic copper carbonate, and copper chloride dehydrate.

The facility is intending to use the exclusion in 40 CFR 261.2(e)(1)(i).

40 CFR 261.2(e) Materials that are not solid waste when recycled. (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed

Staff have reviewed the information provided by the facility and conducted a site visit on February 17, 2017. The following information was obtained:

- ShoreMet would like to use a copper oxide catalyst media in lieu of copper scrap metal in the production of copper compounds.
- The copper oxide catalyst media is used to filter/de-sulfurize the natural gas being used as fuel in solid fuel cells. Sulfur compounds will damage fuel cells.
- The spent catalyst media can also accumulate benzene from the natural gas stream. The benzene will not interfere with the operation of the fuel cell, but can also be retained in the copper oxide catalyst media. The concentrations of benzene in the spent filter media can reach levels where the spent catalyst media is a D018 characteristic hazardous waste.



A State that Works

- The spent catalyst media is alumina coated with copper oxide. It would arrive at the site in a sealed canister. ShoreMet would open the containers, empty the copper oxide catalyst media from the containers, and use the material as an ingredient in production of digested copper.
- Regardless of the source (scrap copper metal or spent copper oxide catalyst media) the digestion processes are the same.
- No reclamation is done to the spent copper oxide prior to it being used as a source material for copper. The copper oxide is not washed or treading prior to being mixed with a chemical to digest the copper into solution.
- At the completion of the digestion process, digested copper solutions are separated (screened/filtered) from the leftover solids. This screening/filtering is conducted on digested copper solutions regardless of the copper source.
- The copper solution is then filtered through carbon removing any organic contaminants. This filtering is conducted on the copper solutions regardless of the copper source.
- The filtered copper solution is then used to manufacture a number of various copper compounds.
- Wastes generated during the filtration and carbon polishing are newly generated wastes and are subject to waste characterization requirements of 40 CFR 262.11.

As described by the facility and as observed by staff during the site visit, utilizing the spent copper oxide catalyst media as an ingredient in the production of copper compounds without prior reclamation appears to meet the requirements of 40 CFR 261.2(e)(1)(i). If the processes change, the exclusion would need to be reevaluated.

If you have any questions, please call John Naddy at 317-233-0404.

Sincerely,



Bruce Kizer, Branch Chief
Compliance and Response Branch
Office of Land Quality

Attachment

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

MEMORANDUM

Date: February 20, 2017

To: ShoreMet LLC
3601 Enterprise Avenue
Valparaiso, Porter County
INR000103721

Thru: Bruce Kizer, Chief
Compliance and Response Branch

From: John Naddy
Compliance and Response Branch

Subject: Trip Report for February 17, 2017 Site Visit

One February 17, 2017, I traveled to the ShoreMet LLC (ShoreMet) facility at 3601 Enterprise Avenue, Valparaiso, Porter County, Indiana. The site was open and operating at the time of the inspection. The site now encompasses both 3501 Enterprise Avenue and 3601 Enterprise Avenue.

I met with Mr. Danny Mislenkov to discuss a proposed use of a spent material as an ingredient per 40 CFR 261.2(e)(i).

40 CFR 261.2(e) Materials that are not solid waste when recycled. (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed

I reviewed the process and walked through the plant looking at the ongoing processes.

ShoreMet is a commercial facility that produces a number of copper solutions and compounds for industrial use. ShoreMet currently uses copper metal from a number of differing sources as the copper source for the production of their products. Copper metal is digested and then using a number of different processes, the digested copper solution is used to produce products such as copper amine carbonate, copper oxide, basic copper carbonate, and copper chloride dihydrate.

Mr. Mislenkov had contacted the Department to determine if the agency would concur with their planned use of a spent catalyst media as an ingredient in their process to make a commercial product.

The catalyst media in question is an alumina substrate that is coated with copper oxide. The catalyst media is used to de-sulfurize natural gas used in electric fuel cells. The catalyst media is replaced when it becomes saturated.

During use in the fuel cell, the spent catalyst media will also accumulate benzene from the natural gas. Some of the spent catalyst can contain enough benzene to be a D018 characteristic hazardous waste.

Mr. Mislenkov is proposing to use the copper oxide coated catalyst media as a replacement source of copper used in the initial chemical digestion process. While potentially exhibiting a hazardous waste characteristic for benzene, the benzene impurity should not impact the production process and will not be contained in the final copper compound products.

Mr. Mislenkov stated that the process using the chemically digested copper oxide catalyst media as a source of copper for the initial copper digestion is no different than the processes currently used using other sources of copper metal. In both processes, following the initial chemical copper digestion, the liquid and solids are separated.

The resulting liquids are also further purified via carbon filtration and either sold as is or processed further to create one of the aforementioned copper compounds.

Currently, digested copper solutions are filtered to remove impurities and then filtered to further remove any organic contaminants. It appears that the same activities will be taking place when the spent catalyst media is used.

Staff discussed the 'toxics along for the ride' (benzene) and how not only should it not end up in the final product, but that the wastes generated from the filtration and carbon polishing are newly generated wastes subject to waste characterization requirements.

Conclusion:

It appears that the use of the spent copper oxide catalyst media is not being reclaimed prior to being used as an ingredients in an industrial process and as an alternative source of copper for the production of copper compounds meets the exemption in 40 CFR 261.2(e)(1)(i).



January 31, 2017

Via EMAIL and Regular US MAIL

Mr. John Naddy
Office of Land Quality
Indiana Department of Environmental Management
100 North Senate Avenue, IGCN1101
Indianapolis, IN 46204

Re: Proposed Project utilizing RCRA "Ingredient" Exclusion

Dear John:

As you recall, we had preliminary telephone conversations about using a copper containing catalyst media as an ingredient to produce one or more copper products that Shoremet manufactures at its Valparaiso, IN, facility. This letter outlines the process and the reasons we think the "ingredient" exclusion from the definition of "solid waste" under applicable law and regulations is appropriately applied to this process. We would appreciate it if you would review this document; we will certainly make ourselves available for a meeting if questions exist or more detailed discussions are required. We look forward hearing from you and eventually receiving written concurrence of this "ingredient exclusion" proposal.

Shoremet has a customer that would like to recycle used/spent catalyst media through our manufacturing process. The customer manufactures fuel cells that generate clean electricity by converting natural gas to electricity using a solid oxide technology. The fuel cell unit has a sealed canister through which the natural gas is fed to purify and clean the natural gas to specifications necessary for the fuel cell to operate efficiently. This process is a proprietary technology of our customer. At this time, estimated annual volume of catalyst media is between 60 and 120 tons. This stream of material over the long run presents a significant opportunity to not only grow its revenues, but its work force.

The catalyst media consists of a copper oxide applied to an alumina substrate. Through use, the media de-sulfurizes the natural gas. In time, the media becomes saturated with sulfur compounds that necessitate its replacement. The customer advises that used media also contains benzene which, if the media were to be disposed, would carry a D018 waste code for toxicity. The customer, however, is committed to finding a recycling solution for the used media given the sustainable nature of the fuel cell product and the valuable copper oxide contained in the media.

Shoremet and its customer believe the "ingredient" exclusion under RCRA applies to the process outlined in this letter. The key reasons supporting this conclusion follow along with an attached process flow diagram to better illustrate the flow of materials through the process:



1. Among other products, Shoremet manufactures Copper Amine Carbonate ("CAC"), Copper Oxide ("CuO"), Basic Copper Carbonate ("BCC"), and Copper Chloride Dihydrate ("CCD").
2. These products can be produced by mixing the catalyst material as is with the RCRA excluded or exempt copper feedstock materials Shoremet already uses.
3. Shoremet uses two chemical digestion processes to make its products from this feedstock, Amine Complex Digestion and Hydrochloric ("HCl") Digestion.
4. Critical to the regulatory analysis below, copper from the feedstock is NOT reclaimed or recovered at any point in the process, but rather undergoes a chemical reaction through the digestion processes. To the extent not proprietary, key chemical reactions are described on the process flow diagram attached.¹
5. Shoremet has also developed test run data from product produced from catalyst media supplied by the customer. The data show that product specifications are acceptable and that there are no "toxics" along for the ride.
6. With respect to the benzene detected in catalyst media sampled by the customer, Shoremet's process has a final ultra-pure filtration step using activated carbon to filter out impurities from all of the near-final copper compounds it produces. That process will filter out the benzene and any other impurities in this spent catalyst feedstock and all other feedstocks. Of course, Shoremet properly disposes its used filter media from this purification step.
7. Shoremet believes the "ingredient" exclusion applies to the catalyst media which Shoremet will process because:
 - a. 40 CFR 261.2(e)(1) excludes from the definition of "solid waste" materials that are recycled when "[u]sed or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed...;"
 - b. IDEM incorporates this federal rule into its hazardous waste rules at 329 IAC 3.1-6-1. Sec. 1 (b);
 - c. Indiana's rules also provide that a secondary material is not a "solid waste" when it is legitimately utilized as defined under 329 IAC 3.1-4-25.1 in an industrial process without reclamation. See 329 IAC 3.1-6-5(a)(1); and

¹ Should IDEM ask for proprietary information Shoremet can provide it under an appropriate Confidential Business Information interpretation from IDEM.



- d. Shoremet's manufacturing process uses the spent catalyst as a valuable ingredient in its production of various copper compound products, and that process does not include "reclamation" as defined in 329 IAC 3.1-4-21.1.

As suggested above, we will certainly make ourselves available for a meeting if questions exist or more detailed discussions are required. We look forward hearing from you and eventually receiving written concurrence of this "ingredient exclusion" proposal.

Shoremet and its customer would like to begin processing this material as soon as possible. Thank you in advance for considering this issue and for your past advice.

Sincerely

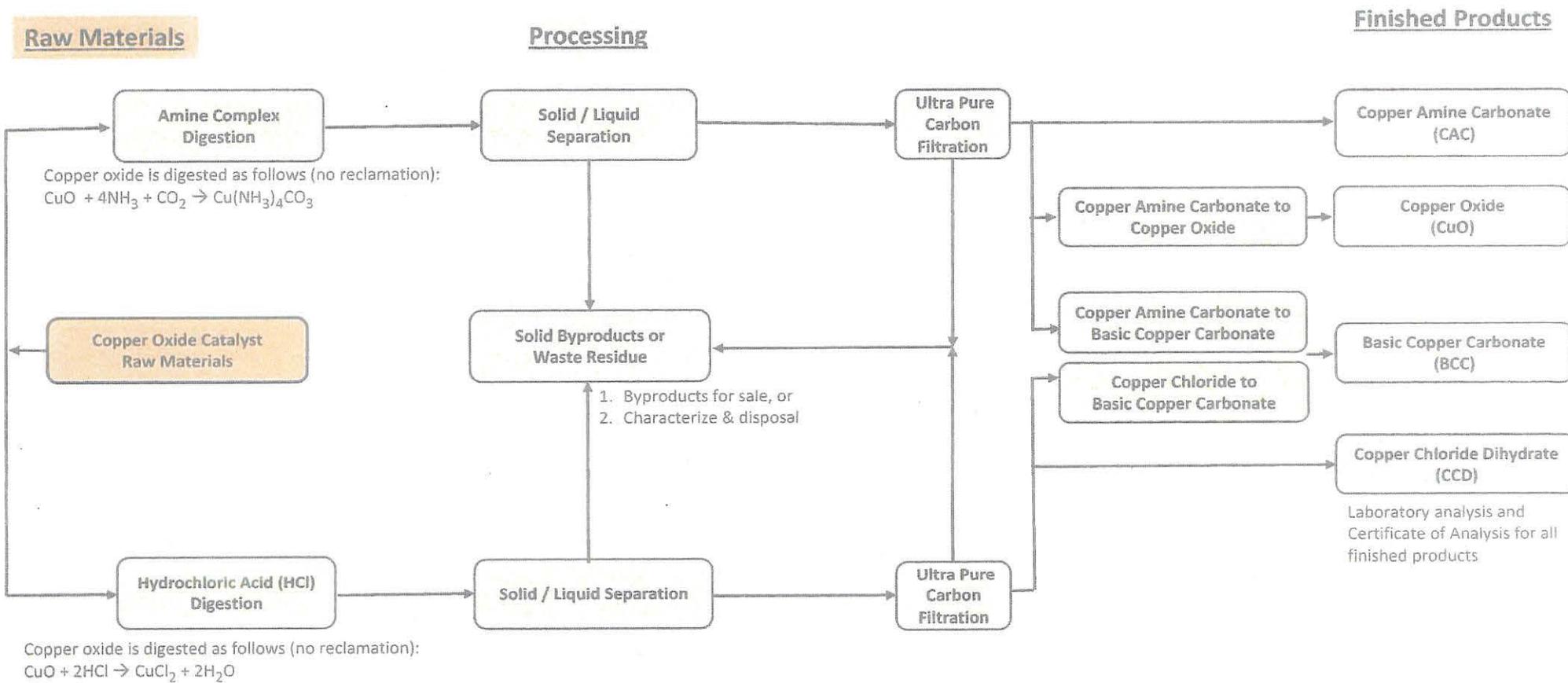
A handwritten signature in black ink, appearing to read "Danny Mislencov".

Danny Mislencov
President

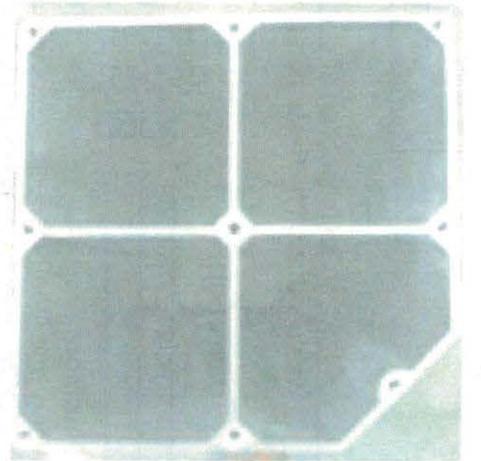
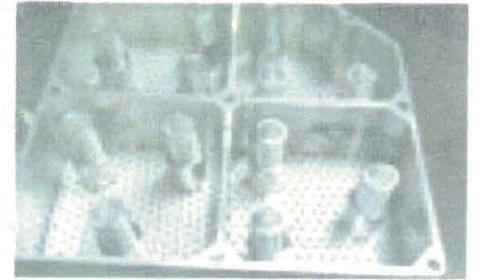
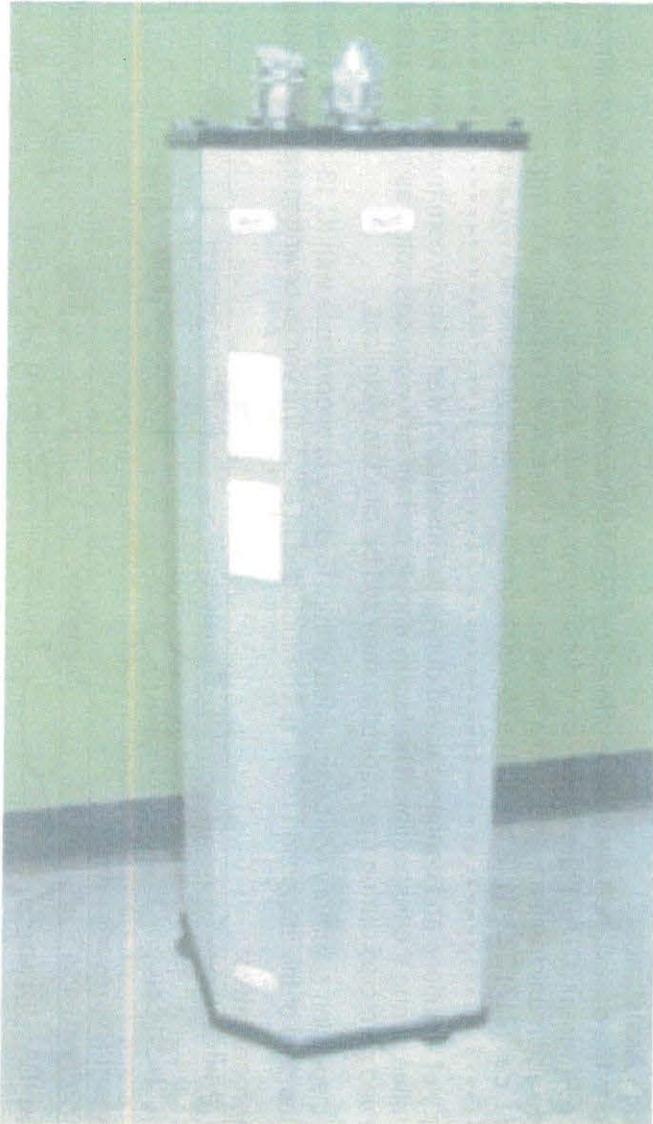
Attachment

cc: David E. Nash, Esq.

ShoreMet LLC, Indiana Copper Oxide Digestion Flow Diagram



Canister Images





This is to notify you that on Feb 17, 2017 an inspection of Shoremat LLC was conducted by the undersigned representative of the Indiana Department of Environmental Management (IDEM), Office of _____.

Type of Inspection (may include more than one):

- _____
- _____
- _____
- Complaint
- Multi-Media Screening Evaluation
- Other Site Visit - Informational

Preliminary Inspection/Screening Findings:

These findings are considered preliminary and identify specific compliance issues discovered during the above-noted inspection that the designated agent of IDEM believes may be a violation of a statute(s), rule(s) or permit(s) issued by IDEM.

Single Media Inspection:

- No violations were discovered with respect to the particular items observed during the inspection.
- Violations were discovered but corrected during the inspection.
- Violations were discovered and require a submittal from you and/or follow-up inspection by IDEM.
- Violations were discovered and may subject you to an appropriate enforcement response.
- Additional information/review is required to evaluate overall compliance.
- Other / Comments (attachment may be included) Not an inspection

Multi-Media Screening (Please note that a multi-media screening is not a comprehensive evaluation of the compliance status of the facility).

- Multi-media screening not conducted.
 - No violations were discovered with respect to the limited multi-media screening conducted by IDEM.
 - Potential violations were discovered but corrected during the inspection.
 - Potential violations were discovered and may be further investigated.
- John Naddy*
2-17-17

Pollution Prevention:

Pollution prevention is the preferred means of environmental protection in Indiana. The goal of pollution prevention is to promote changes in business and commercial operation, especially manufacturing processes, so that Indiana businesses increase productivity, generate less environmental wastes, reduce their regulatory responsibilities and become more profitable. Your participation in Indiana's pollution prevention program is entirely voluntary. If you have any pollution prevention questions, you may contact our Office of Pollution Prevention and Technical Assistance (OPPTA) at (317) 232-8172 or (800) 988-7901, or visit OPPTA's Web site at www.idem.IN.gov/oppta/p2/. Would your company like to be contacted by IDEM's Office of Pollution Prevention and Technical Assistance? Yes No

Compliance Assistance:

In addition to the compliance assistance offered by IDEM's individual programs, IDEM's Compliance and Technical Assistance Program (CTAP) offers free, confidential compliance assistance to regulated entities, including small businesses and municipalities, throughout Indiana. In the future, if you would like to request free, confidential compliance assistance, call (317) 232-8172 or (800) 988-7901, or visit CTAP's Web site at www.idem.IN.gov/ctap.

A summary of violations and concerns noted during the inspection was verbally communicated to the undersigned representative during the inspection. The facility should correct any violations noted as soon as possible. Violations identified and corrected during the inspection may still be cited as violations.

A written inspection summary will be provided within 45 days. In accordance with IC 13-14-5-4, matters not evident to IDEM at the time of the inspection might not be included in either the verbal or written inspection summary.

IDEM Representative:

Printed Name	Signature	Phone Number	Date	Time
John Naddy	<i>John Naddy</i>	317 333-0404	2-17-17	In: 9:00 AM Out: 10:33 AM

Owner/Agent Representative:

Printed Name	Signature	Title	Phone Number	Date
DANNY MISLEWKOJ	<i>Danny Mislewkoj</i>	President	(219) 617-5011	2-17-17