

**HAZARDOUS WASTE SECTION - COMPLIANCE BRANCH
FILE TRANSMITTAL & DATA ENTRY FORM**

Your Name: Jenny Patterson

Facility ID Number: NCD000613273

Facility Name: PRAXAIR SURFACE TECHNOLOGIES INC

Document Group: General (G) **Document Type:** G - Correspondence (C)

Description for File (for CARA): Letter about waste determination on six waste streams generated at facility.
Require additional information before the HWS can send a concurrence letter.

Date of Document: 10/30/2015

Author(s) of Document: Julie Woosley

Inspector ID #: NC

Suborganization:

Comments for RCRAInfo:For CARA entry only

County (if not on report): Mecklenburg County

For Violations:

Enforcement Date:

Docket Number:

Enforcement Type:

How many violations were there?

For IANOV or CO: The facility is

Outcome Measures for CSE for IANOV or CO:

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

Violation #1:

Date Determined:

Scheduled Return to Compliance:

Actual Return to Compliance:

Regulation Description:

Comment:

For CSE, Corrections to Violations were:

Violation #2:

Date Determined:

Scheduled Return to Compliance:

Actual Return to Compliance:

Regulation Description:

Comment:

For CSE, Corrections to Violations were:

North Carolina Department of Environmental Quality

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

October 30, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Maria Tetteris
Praxair, Inc.
435 Donner Avenue
Suite 430
Monessen, PA 15062

Subject: Response to Hazardous Waste Determination Request
Praxair Surface Technologies, Inc.
EPA ID #NCD000613273
Mecklenburg County

Dear Ms. Tetteris:

This letter is written in response to the August 6, 2015 email request sent to the North Carolina Hazardous Waste Section (Section). Praxair Surface Technologies, Inc. is requesting the Section's concurrence with the hazardous waste determination made on seven specific waste streams generated at the Praxair Surface Technologies, Inc. facility located at 8501 Old Statesville Road, Charlotte, NC. The waste streams are named after the process generating them: Dust Collectors, Filters, Vacuum, Used Blast Media, Brush Finish Water, Grinding Sludge, and Mop Water. Additional supporting documentation was submitted by the facility with the August 6, 2015 email including a summary of the waste/recycling stream process diagrams, invoices for materials that are sold to PM Recovery to be blended into alloy mixtures supplied to the steel manufacturing industry, and sample results for each waste stream.

Praxair Surface Technologies, Inc. (Praxair) is sending the noted waste streams to PM Recovery, Inc. (located at 106 Calvert Street, Harrison, New York) to be blended into alloy mixtures supplied to the steel manufacturing industry. Per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed beforehand. In order to ensure the use of these materials is legitimate, Praxair must follow the Continued Use Guidelines (enclosed) to prove the legitimacy of the use of the material. Documentation of claims that materials are not a solid waste must be maintained by Praxair for each of the noted waste streams per 40 CFR 261.2(f).

At this time, the Hazardous Waste Section does not have enough information to concur that the materials are legitimately being used by PM Recovery and therefore are not a solid waste.

In order to obtain a written concurrence from the Hazardous Waste Section that these waste streams are not a solid waste, the following information must be provided:

- 1) Representative sampling indicating the material is non-hazardous. Alternatively, a detailed process explanation indicating why the one sample provided from the July 10, 2015 sampling is representative may be submitted.
- 2) Information for each waste streams that cannot be proven to be non-hazardous (See #1), indicating that each of the nine conditions to ensure legitimate re-use, as listed in the Continued Use Guidelines, are met.
- 3) Alternatively, the facility may petition to receive the trivalent chrome exclusion under 40 CFR 261.4(b)(6)(i). Praxair does not have any of the specific wastes that are listed in 40 CFR 261.4(b)(6)(ii) that qualify for the exclusion but a facility may petition to receive the exclusion based on meeting the below three conditions. The facility must submit a request to receive the exclusion along with sample results and other supporting documentation to indicate the conditions are met. For wastes which fail the test for Toxicity Characteristic Leaching Procedure because of chromium but do not fail for any other constituent, the waste may be excluded from being a hazardous waste if:
 - i. The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium; and
 - ii. The waste is generated from an industrial process which uses trivalent chromium exclusively and the process does not generate hexavalent chromium; and
 - iii. The waste is typically and frequently managed in non-oxidizing environments.

The following are specifics about each waste stream as provided by Praxair and PM Recovery with a conclusion determined by the Hazardous Waste Section.

- **Dust Collectors**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Any thermal spray coating that does not adhere to the customer's part or is overspray, is collected in the wall ventilation system in the coating booth. The ventilation system is connected to a baghouse collection and filtration system. Filters in the collection system are "pulsed" with air to clear the filter and the powders are collected in drums below the filters.

Sample Results: The powder dust from the baghouse collection and filtration system was analyzed by Toxicity Characteristic Leaching Procedure (TCLP) for metals. Three of the Dust Collector samples (identified as: 01B Dust Collector Solid, 03B Dust Collector Solid, and 04A Dust Collector Solid) exceeded the Resource Conservation and Recovery Act (RCRA) regulatory concentration limit for chromium which is 5 mg/L. Two of the Dust Collector

samples (identified as: 05A Dust Collector Solid and 06B Dust Collector Solid) did not exceed any RCRA metal regulatory concentration limits.

Current Disposition: This material is currently sold to PM Recovery, Inc. (located at 106 Calvert Street, Harrison, New York) for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as an ingredient in alloy steel without prior reclamation. Per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused.

Alternatively, since the primary purpose of the dust collectors is air pollution control, the powders collected in the dust collection system are considered a “sludge”. Per North Carolina General Statutes (N.C.G.S.) 130A-290(a)(34), a sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, institutional or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility, or any other waste having similar characteristics and effect. According to 40 CFR 261.2(c)(3), a characteristic sludge that is reclaimed is not a solid waste even though the sludge exhibits a characteristic of hazardous waste. If this material were reclaimed (i.e. processed to recover a usable product) it would not be a solid waste. However, this material is currently used as an ingredient in making alloy steel and not reclaimed to recover a useable product.

If this material is disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) or reclaimed (processed to recover a usable product), the material must be managed by all applicable hazardous waste regulations.

Since the sample results for this material indicate it is characteristic for chromium, the facility may petition to receive the trivalent chromium exclusion described in 40 CFR 261.4(b)(6)(i).

- **Filters**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Any thermal spray coating that does not adhere to the customer’s part or is overspray, is collected in the wall ventilation system in the coating booth. The ventilation system is connected to a baghouse collection and filtration system. When the filter pressure is elevated, the filters are considered full and are exchanged for new filters.

Sample Results: The filter was analyzed by TCLP for metals and exceeded the RCRA regulatory concentration limit for chromium which is 5 mg/L.

Current Disposition: This material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as an ingredient in alloy steel without prior reclamation. Per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused.

Alternatively, since the primary purpose of the dust collectors is air pollution control, the filter and powders collected in the dust collection system are considered a "sludge". Per North Carolina General Statutes (N.C.G.S.) 130A-290(a)(34), a sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, institutional or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility, or any other waste having similar characteristics and effect. According to 40 CFR 261.2(c)(3), a characteristic sludge that is reclaimed is not a solid waste even though the sludge exhibits a characteristic of hazardous waste. If this material were reclaimed (i.e. processed to recover a usable product) it would not be a solid waste. However, this material is currently used as an ingredient in making alloy steel and not reclaimed to recover a useable product.

If this material is disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) or reclaimed (processed to recover a usable product), the material must be managed by all applicable hazardous waste regulations.

Since the sample results for this material indicate it is characteristic for chromium, the facility may petition to receive the trivalent chromium exclusion described in 40 CFR 261.4(b)(6)(i).

- **Vacuum**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Some of the thermal spray coating does not adhere to the customer's part or is overspray. The thermal spray coating that is not collected in the wall ventilation system in the coating booth, is collected by the vacuum.

Sample Results: The powder dust collected from the vacuum was analyzed by TCLP for metals. The sample taken from the vacuum (identified as: ICS Vacuum Solid) exceeded the RCRA regulatory concentration limit for chromium which is 5 mg/L.

Current Disposition: This material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as is as an ingredient in alloy steel without prior reclamation. Per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the

Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused.

Alternatively, the primary purpose of the vacuum is not as an air pollution control device. Since the vacuum is not affiliated with the dust collection system (i.e. not associated with assisting the facility to meet air quality requirements), the powders collected in the vacuum do not meet the definition of a sludge per NCGS 130A-290(a)(34). The dust collected in the vacuum would be considered a spent material if it was not being used as an ingredient in the manufacturing of alloy steel.

If this material is disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) the material would be considered a spent material and must be managed by all applicable hazardous waste regulations. Even if this material were reclaimed to recover a useable ingredient, it must be managed as a hazardous waste prior to reclamation since it is considered a spent material.

Since the sample results for this material indicate it is characteristic for chromium, the facility may petition to receive the trivalent chromium exclusion described in 40 CFR 261.4(b)(6)(i).

- **Used Grit Blast Media**

Process generating waste stream: Aluminum oxide grit blast media is purchased from a supplier. The grit blast media is loaded into a grit blast machine and customers parts are grit blasted to prepare the surface of the part (increase roughness) in preparation for coating. After use of the grit blast media on the part, it is recycled back through the system. Any particles of the grit that are too fine for effective use are screened out and contained in a drum near the grit blast unit.

Sample Results: The used grit blast media was analyzed by TCLP for metals. The sample taken from the used grit blast media (identified as: Used Grit Blast Media Solid) did not exceed RCRA regulatory TCLP concentration limits.

Current Disposition: This material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as an ingredient in alloy steel without prior reclamation. Additionally, the analysis of this material showed this material to not be a characteristic hazardous waste. However, one sample of the material most likely would not be considered a representative sample. If the facility wants to claim this material non-hazardous, it is recommended further analysis be conducted and/or documentation be maintained showing the grit blast and composition of the parts placed in the unit are uniform and the number of samples taken would be representative.

Even if the material had tested above any of the RCRA TCLP concentrations or was characteristic, per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be

shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused. If this material were a hazardous waste and disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) the material would be considered a spent material and must be managed by all applicable hazardous waste regulations. Even if this material were reclaimed to recover a useable ingredient, it must be managed as a hazardous waste prior to reclamation since it is considered a spent material.

- **Brush Finish Water**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Parts are coated with the thermal spray coating process and then placed in the brush finish machine to reduce the roughness of the finish. The brush finish machine is fed by a closed loop water system creating a slurry when the coating is brushed off. Eventually, the slurry of water and removed coating becomes so dirty it can no longer be used and is changed out for fresh water.

Sample Results: The brush finish water was analyzed by TCLP for metals. The sample taken from the used brush finish water (identified as: Brush Finish Water Water) did not exceed RCRA regulatory TCLP concentration limits.

Current Disposition: This material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as is as an ingredient in alloy steel without prior reclamation. Additionally, the analysis of this material showed this material to not be a characteristic hazardous waste. However, one sample of the material most likely would not be considered a representative sample. If the facility wants to claim this material non-hazardous, it is recommended further analysis be conducted and/or documentation be maintained showing the grit blast and composition of the parts placed in the unit are uniform and the number of samples taken would be representative.

Even if the material had tested as a characteristic hazardous waste, per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused. The grinding component in the brush finish water meets the definition of a “by-product”. Per 40 CFR 261.1(c)(3) a by-product is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. According to 40 CFR 261.2(c)(3), a characteristic by-product that is reclaimed is not a solid waste even though the by-product exhibits a characteristic of hazardous waste. If this grinding material were reclaimed (i.e. processed to recover a usable product) it would not be a solid waste. However, this material

is currently used as an ingredient in making alloy steel and not reclaimed to recover a useable product.

If this brush finish water (grindings and water) material were a hazardous waste and disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled), the material would be considered a spent material and must be managed by all applicable hazardous waste regulations. Even if this material were reclaimed to recover a useable ingredient, it must be managed as a hazardous waste prior to reclamation since it is considered a spent material.

- **Grinding Sludge**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Parts are coated with the thermal spray coating process and then placed in the grinding machine to be ground to achieve dimension and roughness per customer's specifications. The grinding machine uses water and coolant in the process of finishing the parts. The mixture of water, coolant and particles ground from the coating create the grinding sludge that is removed as part of periodic equipment maintenance.

Sample Results: The grinding sludge was analyzed by TCLP for metals. The sample taken from the grinding sludge (identified as: Grinding Sludge Solid) did not exceed RCRA regulatory TCLP concentration limits.

Current Disposition: This material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as is as an ingredient in alloy steel without prior reclamation. Additionally, the analysis of this material showed this material to not be a characteristic hazardous waste. However, one sample of the material most likely would not be considered a representative sample. If the facility wants to claim this material non-hazardous, it is recommended further analysis be conducted and/or documentation be maintained showing the grit blast and composition of the parts placed in the unit are uniform and the number of samples taken would be representative.

Even if the material had tested above any of the RCRA TCLP concentrations or was characteristic, per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused. The grinding component in the grinding sludge meets the definition of a "by-product". Per 40 CFR 261.1(c)(3) a by-product is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. According to 40 CFR 261.2(c)(3), a characteristic by-product that is reclaimed is not a solid waste even though the by-product exhibits a characteristic of hazardous waste. If this grinding

material were reclaimed (i.e. processed to recover a usable product) it would not be a solid waste. However, this material is currently used as an ingredient in making alloy steel and not reclaimed to recover a useable product.

If this grinding sludge (grindings, water and coolant) material were a hazardous waste and disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) the material would be considered a spent material and must be managed by all applicable hazardous waste regulations. Even if this material were reclaimed to recover a useable ingredient, it must be managed as a hazardous waste prior to reclamation since it is considered a spent material.

- **Mop Water**

Process generating waste stream: Powders used in the coating process (purchased from PST Powders Plant or HC Stark) are placed into dispensers for distribution in the thermal spray coating process. Some of the thermal spray coating does not adhere to the customer's part or is overspray. The thermal spray coating that is not collected in the wall ventilation system in the coating booth is collected by the vacuum. Any dust that remains in the coating booth after vacuuming is mopped up. The mop water is collected in drums. Other areas of the plant are also mopped, so mop water may also contain grit particles or any other dusts produced in the plant as well as degreasing agents.

Sample Results: The mop water was analyzed by TCLP for metals. The sample taken from the mop water (identified as: Mop Water Water) did not exceed RCRA regulatory TCLP concentration limits.

Current Disposition: According to Praxair Surface Technologies, Inc., this material is currently sold to PM Recovery, Inc. for use in alloy steel and as an additive in making steel.

Conclusion: This material is being used as is as an ingredient in alloy steel without prior reclamation. Additionally, the analysis of this material showed this material to not be a characteristic hazardous waste. However, one sample of the material most likely would not be considered a representative sample. If the facility wants to claim this material non-hazardous, it is recommended further analysis be conducted and/or documentation be maintained showing the grit blast and composition of the parts placed in the unit are uniform and the number of samples taken would be representative.

Even if the material had tested above any of the RCRA TCLP concentrations or was characteristic, this material is being used as is as an ingredient in alloy steel without prior

reclamation. Per 40 CFR 261.2(e)(1)(i), materials are not a solid waste when they can be shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed. The facility must follow the Continued Use Guidelines (enclosed with this letter) to prove the material is legitimately being reused.

If this material were disposed of instead of being legitimately used as an ingredient in making alloy steel (recycled) the material would be considered a spent material and must be managed by all applicable hazardous waste regulations. Even if this material were reclaimed to recover a useable ingredient, it must be managed as a hazardous waste prior to reclamation since it is considered a spent material.

This letter is a summary of the information provided to the Hazardous Waste Section and establishes that additional information is required in order for the Section to provide a waste determination concurrence.

Please submit any additional information to receive a documented concurrence of the waste determination to Jenny Patterson by email: jenny.patterson@ncdenr.gov. A written response is appreciated and requested by January 4, 2016. If you have any questions, please contact Jenny Patterson at 336-767-0031.

Sincerely,



Julie S. Woosley, Chief
Hazardous Waste Section
Division of Waste Management

ec: Pam Gihring, Praxair (Pam_Gihring@Praxair.com)
Heather Goldman
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Jenny Patterson
Central Files

Continued Use Guidelines

Some materials that would be a waste to a facility could be determined to have beneficial use to another company. If the material can be reused, as is, in a process, the below guidelines should be followed to ensure that the material is being reused legitimately. First some terms must be defined:

1. Continued Re-Use Product (CRP): A material that would be a hazardous waste unless it is identified for further use by a facility under an approved Continued Use Program.
2. Continued Use Program (CUP): A program utilized by an off-site facility to re-use a previously used material.
3. CUP Facility: A facility utilizing the CRP on its site.
4. End Products: Various materials at the CUP facility with the potential to sell as a product in the market for profit.
5. Original Generator: The entity/facility which first uses the product.

To ensure legitimate re-use:

- 1) The CUP Facility must use quantities or volumes of the CRP that are comparable to the volumes of analogous commercial products that would be used for the same purpose. The CRP must not be used in excess of the amounts necessary to the process. If the volume of the CRP is being used in amounts greater than an analogous commercial product, then the re-use may not be legitimate.
- 2) Material used as an ingredient must be an effective substitute for a product that the CUP Facility would use. A CRP is not an effective substitute if it has to be reclaimed, processed, mixed, diluted, separated, concentrated, physically or chemically treated before re-use. See 40 CFR 261.2(e)(1)(ii), adopted by reference at 15A NCAC 13A .0106.
- 3) The CRP must be managed in a manner consistent with the use of commercial products while being stored or accumulated on-site at the original generator site. The CRP must NOT be stored or otherwise managed in a way that does not guard against significant economic loss.
- 4) The CRP must have an economic value compared to analogous virgin commercial product. The unit price and shipping charges for the CRP should be comparable to a like commercial product. If the revenue of the Continued Use Program operation is mainly from charging generators for managing their CRP rather than from sales of the end product (e.g. cleaned metal scrap) then the CUP is not legitimate recycling.
- 5) There must be a legitimate use and market for the end product. The Continued Use Program facility should be able to demonstrate that CRP is not a solid waste, or that it is conditionally exempt from regulation, and that there is a known market for the CRP by providing appropriate documentation (i.e. such as contracts showing that the final product can be sold and has an economic value in the market). In addition, owners or operators of facilities claiming that they actually are recycling CRP should be able to show that they have the

necessary equipment to do so as noted in 40 CFR 261.2 (f), adopted by reference at 15A NCAC 13A .0106.

- 6) There must be NO hazardous impurities/contaminants in the qualifying CRP, which do not provide beneficial contribution to the CRP's intended purpose. Laboratory testing and analysis of the CRP is recommended to prove that there are no "toxics along for the ride" with the CRP. The analytical data for the CRP should be compared to the like virgin material. The CRP should not contain any impurities that are hazardous in nature, or which are of no use in the process. (See 9441.1989(19) US EPA Memorandum dated April 26, 1989 about Sham Recycling and Toxics Along the Ride).
- 7) The CRP must not be speculatively accumulated. A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, if it can be shown that the material is potentially recyclable and has a feasible means of being recycled. During the calendar year (commencing on January 1) -- the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. See 40 CFR 261.1(c)(8), adopted by reference at 15A NCAC 13A .0106. It is recommended that the generator maintain on site records to document that the CRP is not being accumulated speculatively.
- 8) The CRP cannot be used to produce products that are applied to the land or used in a manner constituting disposal.
- 9) The CRP cannot be burned for energy recovery, used to produce fuel, or contained in fuels.