M E M O R A N D U M

DATE: October 17, 2011

TO: Richard D. Garrity, Ph.D.

FROM: Lora Webb **THRU**: Diana M. Lee, P.E.
Sterlin K. Woodard, P.E.

SUBJECT: Final Construction Permit – Chromalloy Castings Tampa Corporation
Permit No. 0571408-003-AC

Attached is Final Construction Permit No. 0571408-003-AC for Chromalloy Castings Tampa Corporation**,** a metal casting product manufacturing facility located at 3401 Queen Palm Dr., Tampa, FL. This permit is being issued to authorize construction of a core making process. Currently, the facility operations involve making metal casting products by injecting casting molds with wax, dipping the wax into a tank containing a VOC based solvent to clean the mold, covering the wax mold with sand or stucco to create a ceramic covering over the wax mold, melting the wax out of the casting mold, and pouring molten metal into the ceramic casting molds. However, in some of the parts, there is an additional ceramic piece(s) in the interior of the part called a core. The core is used to create a void or hollow space inside of the part when the molten metal is poured into the ceramic mold.

The facility published the Public Notice in the St. Petersburg Times on October 2, 2011. No comments were received from the public or from the facility.

Based on our review, we recommend that the above referenced permit be issued as drafted.

LAW: 0571408-003-AC

FINAL DETERMINATION

FOR

Chromalloy Castings, Tampa Corporation

Hillsborough County

Construction Permit

Application Number

0571408-003-AC

Environmental Protection Commission of

Hillsborough County

Tampa, FL

October 17, 2011

FINAL DETERMINATION

The Environmental Protection Commission of Hillsborough County mailed a public notice package on September 27, 2011 that included an Intent to Issue Air Construction Permit No. 0571408-003-AC to Chromalloy Castings Tampa Corporation**.** The facility is located at 3401 Queen Palm Dr. Tampa, Hillsborough County, Fl 33619. The air construction permit authorizes construction of a core making process.

The Public Notice of Intent to Issue was published in The St. Petersburg Times on October 2, 2011.

COMMENTS/CHANGES

No comments were received from the applicant or the public.

CONCLUSION

The final action of the Environmental Protection Commission of Hillsborough County is to issue the permit as drafted.

ENVIRONMENTAL PROTECTION COMMISSION OF
HILLSBOROUGH COUNTY, as Delegated by

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF PERMIT

Stephen Misuraca
Environmental, Health, and Safety Manager
Chromalloy Castings Tampa Corporation
3401 Queen Palm Dr.
Tampa, Fl 33619

Re: Hillsborough County - AP

Dear Mr. Misuraca:

Enclosed is Permit Number 0571408-003-AC to authorize construction of a core making process. The process will involve the use of two new natural gas fired wax burn-off ovens with afterburners and five new enclosed cutting, blasting, grinding and sanding booths, issued pursuant to Section 403.087, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the EPC in the Legal Department at 3629 Queen Palm Drive, Tampa, Florida 33619; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the clerk of the EPC.

Executed in Tampa, Florida.

Sincerely,

Richard D. Garrity, Ph.D.
Executive Director

RDG/LAW/law

cc: Florida Department of Environmental Protection (via email)
Omana Antony Taylor, P.E. – ETG, Inc. (via email)

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT ISSUANCE and all copies were mailed before the close of business on _____ to the listed persons.

FILING AND ACKNOWLEDGEMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statues, with the clerk, receipt of which is hereby acknowledged.

_____ _____
Clerk Date

PERMITTEE:
Chromalloy Castings Tampa Corporation
3401 Queen Palm Dr.
Tampa, FL 33619

PERMIT/CERTIFICATION
Permit No: 0571408-003-AC
County: Hillsborough
Expiration Date: November 1, 2012
Project: Core Making Process

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rules 62-204, 62-210, 62-212, 62-296, 62-297, and 62-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the EPC and made a part of hereof and specifically described as follows:

This permit is being issued to authorize construction of a core making process. The facility operations currently involve making metal casting products by injecting casting molds with wax, dipping the wax into a tank containing a VOC based solvent to clean the mold, covering the wax mold with sand or stucco to create a ceramic covering over the wax mold, melting the wax out of the casting mold, and pouring molten metal into the ceramic casting molds. In some of the parts, there is an additional ceramic piece(s) in the interior of the part called a core. The core is used to create a void or hollow space inside of the part when the molten metal is poured into the ceramic mold. The ceramic core, which will be partially covered with metal when the metal is poured into the ceramic mold, will be grit blasted, cut, or sanded out to so that the finished metal part has a void or hollow spot within the part.

The ceramic cores can be made using either of two distinct process. The first process is called the Injection Molded Core Process. In this process, wax and ceramic will be mixed together and injected into a core casting mold which will be enclosed in a box called a sagger. The sagger will be placed in one of two, natural gas fired, 3.0 MMBtu/hr wax burn-off ovens to burn off the wax. Each wax burn-off oven will be controlled by one 0.8 MMBtu/hr afterburner. The ceramic core will then be removed from the sagger, inspected, and grit blasted, sanded, or cut as needed within two enclosed booths. Each booth will be controlled by one 1,400 DSCFM baghouse which will vent inside of a partially enclosed area. These booths are exempt from permitting per Rule 62-210.300(3)(b)1., F.A.C. The core will then be dipped in a water and polyvinyl alcohol mixture, which helps to increase the tensile strength of the ceramic core. The finished core will then be placed inside of the ceramic casting mold and the mold will continue through the metal casting product process described below.

The second process used to make the cores is called the Alternate Core Process. This process begins by mixing an alcohol based binder and ceramic to make a slurry. The slurry will be pumped to a hopper and pressed into a die in the shape of the core. The alcohol based binder is added to the ceramic to ensure that the ceramic material is soft enough to be pressed into the die. The core will then be ignited with a torch to burn off the alcohol. The ceramic core will then be placed in one of the two wax burn-off ovens described above to burn off any residual wax. The ceramic core will then be dipped in a liquid mixture of silica and sodium (colloidal silica) to improve the strength of the core. The core will then once again be placed in one of the two wax burn-off ovens to burn off any moisture that may remain in the core.

After the wax burn-off ovens, the core will be placed in one of three enclosed booths to be cut or grinded as needed. One booth will be controlled by a 7,000 DSCFM baghouse and the other two booths will each be controlled by one 1,400 DSCFM baghouse. The core will then be dipped in the water and polyvinyl alcohol mixture**.** The finished core will then be placed inside of the ceramic casting mold and the mold will continue through the metal casting product process.

Below is a list of the make and model number of the wax burn-off ovens at the facility and a description of the regulated emission units.

Type of Furnace	**Manufacturer**	**Model No.**
Burn-Off Oven	Pacific Kiln	FFDWS-9487236D8
Burn-Off Oven	Pacific Kiln	FFDWS-6487236D8
Burn-Off Oven	Pacific Kiln	PBF-CB-727252NG
Burn-Off Oven	Pacific Kiln	PBF-CB-727252NG
Burn-Off Oven	TBD	TBD
Burn-Off Oven	TBD	TBD

Emission Unit Nos. and Descriptions:

EU ID No.	Description	Total Quantity	Control device
002	Wax Burn-Off Ovens	6	Two 1.0 MMBtu/hr afterburners; One 0.75 MMBtu/hr afterburner; and Two 0.8 MMBtu/hr afterburners
004	Cutting, Blasting, Grinding and Sanding Operations	3	One 7,000 DSCFM baghouse and two 1,400 DSCFM baghouses.
008	Core Making		None
009	Natural Gas Combustion in the Pre-heat Ovens and Wax Burn-Off Ovens		None

Location: 3401 Queen Palm Dr., Tampa, Fl 33619

UTM: 17- 349.00E and 3100.00N NEDS No: 1408

Replaces Permit No.: NA

References Permit No.: NA

1. A part of this permit is the attached General Conditions. [Rule 62-4.160, F.A.C.]

2. All applicable rules of the Environmental Protection Commission of Hillsborough County including design discharge limitations specified in the application shall be adhered to. The permit holder may also need to comply with county, municipal, federal, or other state regulations prior to construction. [Rule 62-4.070(7), F.A.C.]

3. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapters 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C., or any other requirements under federal, state, or local law. [Rule 62-210.300, F.A.C.]

4. The permittee shall not cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]

5. As requested by the permittee, in order to limit the potential to emit and establish the facility as a synthetic minor for PM, VOC, and Hazardous Air Pollutants (HAP), the following emission limitations shall apply per any 12 consecutive month period: [Rules 62-4.070(3) and 62-210.200, F.A.C. and Construction Permit Application Received August 23, 2011]

A) The allowable particulate matter emissions from each baghouse associated with EU No. 004 shall not exceed 0.03 grains/DSCF.
B) The facility wide PM emissions shall not exceed 21.8 tons/year.
C) The VOC emissions from the Core Making Process (EU No. 008) shall not exceed 19.5 tons/year.
D) The facility wide VOC emissions shall not exceed 30.2 tons/year.
E) The HAP, as defined in Rule 62-210.200, F.A.C., emissions shall be less than 10 tons for any individual HAP and less than 25 tons for any combination of HAPs.

6. The following restrictions and limitations shall apply in order to ensure compliance with Specific Condition No. 5: [Rules 62-296.320(4)(b)1. and 62-296.712(2), F.A.C. and Ch. 1-3.52.1. and 2. of the Rules of the EPCHC]

A) Visible emissions from each pre-heat oven (EU No. 009) shall not exceed 20% opacity.
B) Visible emissions from EU Nos. 002 and 004 or any other activity at the facility shall not exceed 5% opacity.

7. The hours of operation of the facility are not limited. [Rule 62-4.070(3), F.A.C.]

8. The following restrictions and limitations shall apply per any twelve consecutive month period in order to ensure compliance with Specific Condition No. 5: [Rule 62-4.070(3), F.A.C. and Construction Permit Application Received August 23, 2011]

A) The maximum combined natural gas usage of the pre-heat furnaces and the wax burn-off ovens (EU No. 009) shall not exceed 238 million cubic feet.
B) The ovens and the furnaces shall burn natural gas only or be electric powered.

9. The following restrictions and limitations shall apply for any 12 consecutive month period in order

to ensure compliance with Specific Condition Nos. 5, 6, and 8: [Rule 62-4.070(3), F.A.C. and Construction Permit Application Received August 23, 2011]

A) Wax burn-off ovens with afterburners (Emission Unit No. 002)
   a. All casting molds shall be placed in an autoclave to remove the wax prior to being placed in the burn-off ovens to remove any residual wax.
   b. The following throughput and limitations shall apply to the wax burn-off ovens used for the casting molds:
      i. The throughput of each Pacific Kiln oven shall not exceed 1,600 lb/hour of molds.
      ii. The number of molds placed in each oven per load shall not exceed 18 molds.
      iii. The wax content of each mold shall not exceed 3% of the mold weight.
      iv. The minimum destruction efficiency of each afterburner shall be 99%.
   c. The following practices shall be followed during the operation of each wax burn-off oven used for the casting molds:
      i. Preheat the afterburner chamber until it reaches a minimum temperature of 1,425°F prior to the initial charge upon startup.
      ii. Maintain the afterburner temperature at a minimum of 1,425°F during operation, including during the charging operation.
      iii. Observe the stack, furnace doors/openings, and seals for visible emissions at least once per shift. Make note of any problems and correct promptly.
      iv. Record the temperature of each afterburner at least once per shift.
      v. Turn on the afterburner during ash removal or cleaning of the burn-off chamber.
   d. The following practices shall be followed during the operation of each wax burn-off oven used in the core making process:
      i. The maximum combined throughput of wax in the two ovens shall not exceed 1,600 lb/year.
      ii. The minimum destruction efficiency of each afterburner shall be 99%.
      iii. The afterburner temperature shall be maintained at a minimum of the temperature the afterburner was set at during the latest successful compliance demonstration.

B) Cutting, Blasting, Grinding and Sanding Operations (Emission Unit No. 004)
   a. The cutting, blasting, grinding and sanding operation shall be performed within fully enclosed cabinets.
   b. Each cutting, blasting, grinding and sanding cabinet shall be ducted and vented to a baghouse.
   c. The baghouses shall be kept in good repair.

C) Core Making (Emission Unit No. 008)
   a. The material usage, VOC content, and density of the materials used in the Core Making process shall not result in the operation emitting more than 19.5 tons of VOC emissions per twelve consecutive month period.

10. Test the two new 3.0 MMBtu/hr Wax Burn-Off Ovens (EU No. 002) and each of the three cabinets associated with the Cutting, Blasting, Grinding and Sanding Operations (EU No. 004) for visible emissions at the point of highest opacity within 60 days of startup of each piece of equipment and annually thereafter. Submit two copies of the test data to the Air Management Division of the Environmental Protection Commission of Hillsborough County within 45 days of such testing. The EPA

Method 9 test for the emission units shall be a minimum of thirty (30) minutes in duration. Testing procedures shall be consistent with the requirements of Rule 62-297, F.A.C. [Rule 62-297.310(4)(a)2. and (7)(a)4.a., F.A.C. and Ch. 1-3.52 of the Rules of the EPCHC]

11. Compliance with the emission limitations of Specific Condition Nos. 6 and 10 shall be determined using EPA Method 9 contained in 40 CFR 60, Appendix A and adopted by reference in Rule 62-297, F.A.C. The minimum requirements for stack sampling facilities, source sampling and reporting, shall be in accordance with Rule 62-297, F.A.C. and 40 CFR 60, Appendix A. [Rule 62-297.401, F.A.C.]

12. Testing of emissions shall be conducted with the source operating at capacity. Capacity is defined as 90-100% of the production rates for each one of the regulated emission sources. If it is impracticable to test at capacity, then the source may be tested at less than capacity; in this case subsequent source operation is limited to 110% of the test load until a new test is conducted. Once the unit is so limited, then operation at higher capacities is allowed for no more than fifteen days for purposes of additional compliance testing to regain the rated capacity in the permit, with prior notification to the EPC. Failure to submit the input rates and actual operating conditions, including the afterburner temperatures (°F) may invalidate the test. [Rules 62-4.070(3) and 62-297.310(2)(b), F.A.C.]

13. The permittee shall notify the Air Compliance Section of the Environmental Protection Commission of Hillsborough County at least 15 days prior to the date on which each formal compliance test is to begin of the date, time, and place of each such test, and the contact person who will be responsible for coordinating and having such test conducted. [Rule 62-297.310(7)(a)9., F.A.C.]

14. In order to demonstrate compliance with Specific Condition Nos. 5, 7, 8, and 9, the permittee shall maintain a monthly recordkeeping system. The records shall be maintained onsite for three years and shall be made available to any local, state, or federal air pollution agency upon request. The records shall include, but not limited to, the following: [Rules 62-4.070(3) and 62-4.160(14), F.A.C.]

A) Month/Year
B) Combined weight of wax processed through the wax burn-off ovens used in the core making process
C) Combined natural gas usage of the wax burn-off ovens and the pre-heat ovens
D) Amount, density, and VOC content of each material used in the core making process
E) Monthly VOC emissions from the core making process
F) Rolling twelve month totals of B), C), D), and E), above
G) Record the observations specified in 9.A) c.iii and iv

15. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter in accordance with the provision in Rule 62-296.320, F.A.C. These provisions are applicable to any source, including, but not limited to, vehicular movement, transportation of materials, construction, alterations, demolition or wrecking, or industrial related activities such as loading, unloading, storing and handling. Reasonable precautions shall include, but not limited to, the following: [Rule 62-296.320(4)(c), F.A.C.]

A) Removal of particulate matter from paved areas, buildings, and work areas under the control of the owner/operator.
B) Ensure that waste collected by the baghouse(s) is effectively contained and disposed of

properly.

C) Clean accidental spills promptly.
D) Exercise good housekeeping at all times.
E) Carefully place ash or residue from the burn-off oven chamber in a leak tight container and dispose of properly. Moisten ash/residue, if necessary.

16. When the Environmental Protection Commission of Hillsborough County (EPC) after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in Rules 62-204, 62-210, 62-212, 62-296, or 62-297, F.A.C., or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of pollutant emissions from the source and to provide a report on the results of said tests to the EPC. [Rules 62-297.310(7)(b) and 62-4.070(3), F.A.C.]

17. The permittee shall not store, handle, process, or use in any process the volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems as follows and as deemed necessary and ordered by the Environmental Protection Commission of Hillsborough County: [Rule 62-296.320(1), F.A.C.]

A) Maintain tightly fitting cover, lids, etc. on all containers when they are not being handled, tapped, etc.
B) Where possible and practical, procure/fabricate a tightly fitting cover for any open trough, basin, etc. of VOC so that it can be covered when not in use.
C) Immediately attend to all spills/waste as appropriate.

18. The permittee shall provide timely notification to the Environmental Protection Commission of Hillsborough County prior to implementing any changes that may result in a modification to this permit pursuant to Rule 62-210.200(199), F.A.C., Modification. The changes do not include normal maintenance, but may include, and are not limited to, the following, and may also require prior authorization before implementation: [Rules 62-210.300 and 62-4.070(3), F.A.C.]

A) Alteration or replacement of any equipment or major component of such equipment.
B) Installation or addition of any equipment which is a source of air pollution.

19. If the permittee wishes to transfer this permit to another owner, an "Application for Transfer of Permit" (DEP Form 62-210.900(7)) shall be submitted, in duplicate, to the Environmental Protection Commission of Hillsborough County within 30 days after the sale or legal transfer of the permitted facility. [Rule 62-4.120, F.A.C.]

20. Submit to the Environmental Protection Commission of Hillsborough County each calendar year on or before April 1, completed DEP Form 62-210.900(5), "Annual Operating Report for Air Pollutant Emitting Facility", for the preceding calendar year. [Rule 62-210.370(3)(c)., F.A.C.]

21. In order to provide reasonable assurance that the baghouses associated with the Cutting, Blasting, Grinding and Sanding Operations, the afterburners associated with the wax burn-off ovens, and the scrubber associated with the Finished Parts Inspection Process (EU No. 005) will operate and be maintained to perform adequately the function for which it is intended, an Operation and Maintenance

Plan (O & M plan) shall be submitted with the air operation permit application. The O & M Plan shall include daily, weekly, and monthly maintenance checks for each of the afterburners, baghouses, and the scrubber. [Rules 62-296.700(6) and 62-4.070(3), F.A.C.]

22. A minimum of two copies of an air operating permit application shall be submitted to the Environmental Protection Commission of Hillsborough County within 60 days of completion of the compliance tests or at least 90 days prior to the expiration date of this permit, whichever occurs first. [Rules 62-4.050(2) and 62-4.090, F.A.C.]

ENVIRONMENTAL PROTECTION COMMISSION
OF HILLSBOROUGH COUNTY

_____

Richard D. Garrity, Ph.D.
Executive Director