OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 East Aurora Rd.
Twinsburg, Ohio 44087

TELE: (330) 963-1200 FAX: (330) 487-0769
www.epa.state.oh.us

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

June 27, 2007

RE: 3DP00024*DP
PCC AIRFOILS
INDUSTRIAL USER INSPECTION
MINERVA
STARK COUNTY

Mr. Scotty Richmond
PCC Airfoils, LLC
3860 Union Ave. SE
Minerva, OH 44657

Dear Mr. Richmond:

On December 15, 2006, representatives of this office conducted an Industrial User Inspection of the above facility. Ohio EPA was represented by Donna Kniss and Julia Zhang. You represented the company. You provided additional information in a telephone conversation on June 27, 2007. PCC Airfoils discharges wastewater to the Village of Minerva wastewater treatment plant and has been issued Indirect Discharge (IDP) permit 3DP00024*DP. The purpose of the inspection was to evaluate compliance with the existing IDP.

PCC Airfoils currently employs approximately 650 people in a 7 day/week, 3 shift/day schedule. PCC Airfoils conducts foundry operations; the base metals are mainly nickel, cobalt, and chromium, with other metals used infrequently. The primary metal used is nickel. The castings are acid etched to show that the grain of the metal is solid. There are other metal finishing operations, which include dye penetrant testing.

Wastewater from production areas, including floor drains, is routed to the pretreatment system. Water is collected in the rinse water equalization tank, and then batch processed once per shift. The treatment included acid addition for chromium reduction; however, this step is no longer required, and acid is added only when the pH of the waste water is too high for subsequent processing. The wastewater is pH adjusted; polymer is added, and the resulting solids settled in an inclined plate clarifier. The supernatant from the clarifier is monitored for pH and flow prior to discharge to the sanitary sewer. The supernatant is also checked for nickel concentration with a portable test kit prior to discharge. Sludge from the clarifier is routed through sludge thickening tanks, and the solids removed in a plate and frame filter press. The filtrate is routed back to the head of the treatment process. There are additional tanks for collection of specific wastewater streams and for batch treatment.

There are two employees trained in the pretreatment system operation on each shift, and they check system operation every 1-2 hours. There are also audible and visual alarms for upset conditions in the pretreatment system. The pretreatment system tanks were well marked with the tank identifier number and source tank numbers. After review of the pretreatment system manual, this office recommended that a section on dealing with pretreatment system upsets be added to the manual, and you agreed with this recommendation.

The dye penetrant wastewater is batch treated in a separate system. Polymer and clay slurry are added, and the solids settled. The treated water discharges to the sanitary sewer in a different location. The silver recovery unit also discharges downstream of the pretreatment system.

Samples of combined sanitary and process wastewater are collected at a manhole downstream of all discharge locations. Ream and Haager personnel collect the sample on an unannounced basis, and conduct the analyses. The composite sampler is set up in a "doghouse" over the manhole, which is located on PCC Airfoils property, but outside the secured area. During the inspection, we discussed whether securing the sample location while collecting the composite sample was appropriate. You indicated that PCC Airfoils set up the sampling protocol to ensure the independence of the sample collection, to avoid the appearance of selective sampling. After discussion, this office believes that some procedure to ensure the sample was not tampered with is necessary. It is not mandatory that the sample "doghouse" be secured; using evidence tape or seals to demonstrate the sampler was not tampered with should be sufficient.

A review of the discharge monitoring data from June 2003 to December 2006 showed numerous nickel and silver violations; a table of the violations is attached. You stated that PCC Airfoils collected samples at the pretreatment system and at the sample location and determined that there was another nickel source. Investigations revealed the presence of a floor drain under equipment where nickel castings were periodically processed. The floor drain was sealed, and every sample taken since has been below permit limits. The silver violations were apparently caused by switching the media in the silver recovery unit from iron to steel wool. This was supposed to improve the recovery system performance, but actually reduced removal rates. The media was switched back to iron, and the media replacement frequency increased. There were no IDP discharge limit violations in the second half of 2006.

This office has reviewed PCC Airfoils classification under the national categorical pretreatment standards to determine if the industry is appropriately classified under 40 CFR 433, Metal Finishing. PCC Airfoils is not subject to 40 CFR 464, Metal Molding and Casting, because PCC Airfoils does not cast any of the metals regulated by that standard. Additionally, PCC Airfoils is not subject to 40 CFR 471 Subpart C, Nickel-Cobalt Forming Subcategory, because the castings do not subsequently undergo forming operations. Therefore, classification under 40 CFR 433 is correct.

If you have any questions or comments, please contact me at (330) 963-1285. I can also be reached via e-mail at donna.kniss@epa.state.oh.us.

Sincerely,

Donna J. Kniss

Donna J. Kniss
Environmental Engineer
Division of Surface Water

DJK/mt

cc: Don Ludke, Village of Minerva
Julia Zhang, DSW CO

File: Pretreatment Industrial User/Permit-Compliance

Indirect Discharge Permit Limit Violations
June 2003 to December 2006

| Parameter | Limit Type | Limit | Reported Value | Violation Date |
|---|---|---|---|---|
| Silver, Total (Ag) | 30D Conc | 80 | 96. | 8/1/2003 |
| Silver, Total (Ag) | 1D Conc | 140 | 178. | 8/12/2003 |
| Copper, Total (Cu) | 1D Conc | 270 | 362. | 11/18/2003 |
| Zinc, Total (Zn) | 30D Conc | 360 | 467.5 | 1/1/2004 |
| Zinc, Total (Zn) | 1D Conc | 360 | 859. | 1/6/2004 |
| Copper, Total (Cu) | 1D Conc | 270 | 396. | 2/10/2004 |
| Cadmium, Total (Cd) | 30D Conc | 10 | 19. | 3/1/2004 |
| Zinc, Total (Zn) | 30D Conc | 360 | 611.5 | 3/1/2004 |
| Cadmium, Total (Cd) | 1D Conc | 10 | 17. | 3/9/2004 |
| Zinc, Total (Zn) | 1D Conc | 360 | 927. | 3/9/2004 |
| Cadmium, Total (Cd) | 1D Conc | 10 | 21. | 3/23/2004 |
| Cadmium, Total (Cd) | 30D Conc | 10 | 12.6666 | 4/1/2004 |
| Zinc, Total (Zn) | 30D Conc | 360 | 520. | 4/1/2004 |
| Nickel, Total (Ni) | 1D Conc | 250 | 340. | 4/6/2004 |
| Zinc, Total (Zn) | 1D Conc | 360 | 1380. | 4/6/2004 |
| Cadmium, Total (Cd) | 1D Conc | 10 | 22. | 4/13/2004 |
| Cadmium, Total (Cd) | 1D Conc | 10 | 16. | 4/20/2004 |
| Zinc, Total (Zn) | 30D Conc | 360 | 657. | 7/1/2004 |
| Zinc, Total (Zn) | 1D Conc | 360 | 1270. | 7/13/2004 |
| Nickel, Total (Ni) | 30D Conc | 250 | 407.5 | 10/1/2004 |
| Silver, Total (Ag) | 30D Conc | 80 | 119.5 | 10/1/2004 |
| Nickel, Total (Ni) | 1D Conc | 250 | 761. | 10/12/2004 |
| Cadmium, Total (Cd) | 30D Conc | 10 | 20.5 | 11/1/2004 |
| Cadmium, Total (Cd) | 1D Conc | 10 | 41. | 11/9/2004 |
| Nickel, Total (Ni) | 30D Conc | 250 | 254. | 5/1/2005 |
| Silver, Total (Ag) | 30D Conc | 80 | 82. | 5/1/2005 |
| Nickel, Total (Ni) | 1D Conc | 250 | 290. | 5/3/2005 |
| Silver, Total (Ag) | 30D Conc | 80 | 207.5 | 12/1/2005 |
| Silver, Total (Ag) | 1D Conc | 140 | 207. | 12/6/2005 |
| Nickel, Total (Ni) | 1D Conc | 250 | 287. | 12/27/2005 |
| Silver, Total (Ag) | 1D Conc | 140 | 208. | 12/27/2005 |
| Silver, Total (Ag) | 30D Conc | 80 | 189. | 2/1/2006 |
| Silver, Total (Ag) | 1D Conc | 140 | 178. | 2/7/2006 |
| Silver, Total (Ag) | 1D Conc | 140 | 200. | 2/14/2006 |
| Silver, Total (Ag) | 30D Conc | 80 | 115.5 | 3/1/2006 |
| Nickel, Total (Ni) | 1D Conc | 250 | 277. | 3/7/2006 |
| Silver, Total (Ag) | 1D Conc | 140 | 191. | 3/7/2006 |
| Silver, Total (Ag) | 30D Conc | 80 | 85. | 4/1/2006 |
| Silver, Total (Ag) | 1D Conc | 140 | 144. | 4/4/2006 |
| Silver, Total (Ag) | 30D Conc | 80 | 103. | 5/1/2006 |
| Nickel, Total (Ni) | 1D Conc | 250 | 252. | 5/23/2006 |
| Silver, Total (Ag) | 1D Conc | 140 | 183. | 5/23/2006 |