



City of Cleveland
Frank G. Jackson, Mayor

Department of Public Health
Division of Air Quality
75 Erieview Plaza, Second Floor
Cleveland, Ohio 44114-1839
216/664-2297 • Fax: 216/420-8047
www.clevelandhealth.org

**SERVING OHIO EPA AS AGENCY 13
FOR CUYAHOGA COUNTY**

**CERTIFIED MAIL 7011 3500 0000 1759 7372
RETURN RECEIPT REQUESTED**

11/14/12

Gerald C. Ott
President
Aircraft Plating Corporation
1106 Clark Ave.
Cleveland, OH 44109-1824

NON-HPV

FACILITY ID: 13-18-00-4152

**RESOLUTION OF VIOLATIONS
NOTICE OF VIOLATION FOLLOW-UP LETTER**

Dear Mr. Ott:

On 9/26/12, the Cleveland Division of Air Quality (CDAQ) issued a Notice of Violation (NOV) requiring Aircraft Plating Corporation (APC) to submit a Permit to Install/Operate (PTIO) application for the Stainless Steel Passivation Tank.

Additionally, in an effort to bring your operation into current compliance status, CDAQ requested that APC provide a written request for the withdrawal of emissions unit (EU) B002: 1.26 mmBtu/hr natural gas fired boiler, including the appropriate effective date (dismantled/removed date). CDAQ also solicited information/calculations for EUs P001: Nickel and Chrome Plating Tanks, P003: Cleaning, Brass and Copper Plating Operation, P004: Cleaning Bath, Silver Strike, Silver Electroplating and P005: Electrolysis Bath for Stainless Steel that established continued compliance with the requirements for registration status, and/or submit PTIO applications for the respective EUs.

CDAQ is in receipt of a corrective action plan dated 11/1/12 that included the requested EU withdrawal information and calculations that established the remaining EUs were DeMinimis.

The corrective action plan was received in a timely manner and appropriate steps were taken to bring the source into compliance. CDAQ has determined that no further enforcement action is warranted at this time, but reserves its right to take such action in the future if necessary.



CDAQ issues this letter with Ohio EPA's concurrence and does not excuse any violations of local, state and federal laws or regulations regarding air pollution control. Violations of air pollution control laws may be pursued in local court or referred to Ohio EPA or U.S. EPA for further enforcement action. Should you have any questions, please call Dave DeChant at 216-664-3213. All correspondence with CDAQ must include the Ohio EPA facility identification number for Aircraft Plating Corporation: 13-18-00-4152.

Sincerely,

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

Valencia White
Chief of Enforcement, CDAQ

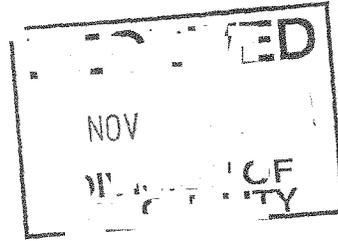
VW/dd UK

cc: Adrienne LaFavre, OCAPP
John Paulian, Ohio EPA Central Office
Brian Dickens, U.S. EPA Region V
L:\Data\Facilities\1318004152\2012-9-11 ROV+NEAR.docx

AIRCRAFT PLATING CORPORATION



1106 Clark Avenue
Cleveland, Ohio 44109-1824
Phone: 216-781-5845
Fax: 216-781-1409
E-mail: sales@aircraftplating.com



November 1, 2012

Cleveland Division of Air Quality
Attention: Mr. Dave DeChant
75 Erievue Plaza, 2nd Floor
Cleveland, OH 44114-1839

Sent Via Certified Mail with Return Receipt

Dear Mr. DeChant;

I am writing in response to your Notice of Violation dated September 26, 2012. I believe there are two actions you require: ask for revocation of permits for any emission units which are no longer at our plant and calculation of the emissions from the other emission units and the passivation tank.

Revocation of permits

Aircraft Plating Corp. with Facility ID 13 18 00 4152 is requesting revocation of the permits for B002 and P001.

- a. B002 is on Registration Status. This boiler has been dismantled and removed from 1106 Clark Avenue in Cleveland, Ohio. I started working at Aircraft Plating Corp. in 1985. This boiler was no longer in our building. I have also asked our longest working employee, and he does not remember the boiler either. You asked us to ask for this unit's permit to be revoked.
- b. P001 is on Registration Status. This unit consisted of a chrome plating tank and a nickel plating tank as well as a series of shared tanks. The entire tank system has been removed and neither process, chrome nor nickel are being plated. We discontinued chrome plating in 1994 and nickel plating in 2005.

Determination of emissions from units P003, P004, P005 and the Passivation Tank.

Dr. La Favre of Ohio EPA's Office of Compliance Assistance and Pollution Prevention has determined that these units are all *de minimis* sources of air pollutants. I believe Aircraft Plating Corp. is therefore, allowed to keep the units of Registration Status. Please see Attachment One which is included with this letter for the calculations. Please let me know if these determinations meet your approval.

I believe Aircraft Plating Corp. has supplied the information and the revocation request required in the Notice of Violation. Please let me know if there is anything else you need.

Sincerely,

AIRCRAFT PLATING CORPORATION

A handwritten signature in black ink that reads "Gerald C. Ott". The signature is written in a cursive style with a large initial "G" and "O".

Gerald C. Ott
President

GCO:csg

Enclosure

ATTACHMENT ONE
EMISSION UNITS

Aircraft Plating Corporation
1106 Clark Ave., Cleveland, OH 44109-1824

Table One - EMISSION UNIT STATUS VERIFICATION

Emission Unit ID	Description	Present Status	Present Permitting Status in Ohio EPA data base	Recommended Permitting Status
B001	Sellers 3.5 Boiler 3.5 MM BTU/hr (gas)	Still in operation	Registration	CDAQ determined unit meets exemption under OAC 3745-31-03(A)(1)(a)
B002	Stand-by boiler 1.26 MM BTU/hr (gas)	Removed	Registration	Aircraft Plating Corp. is requesting revocation. ✓
P001	Chrome and nickel tanks	Removed	Registration	Aircraft Plating Corp. is requesting revocation ✓
P002	Buffing operation with Cyclone	Now has an internal dust collection system	Registration	CDAQ determined unit meets exemption under OAC 3745-31-03(A)(1)(y)
P003	Brass/Copper plating tanks	Still in operation	Registration	Recommend tanks stay on Registration Status as they are <i>de minimis</i>
P004	Silver plating tanks	Still in operation	Registration	Recommend tanks stay on Registration Status as they are <i>de minimis</i>
P005	Electrolysis bath for stainless	Still in operation	Registration	Recommend tanks stay on Registration Status as it is <i>de minimis</i>
	Passivation tank for stainless	Still in operation	None	Tank is a <i>de minimis</i> , does not require a permit.

Table Two – CALCULATED EMISSIONS FROM UNITS NOT MEETING EXEMPTIONS

Emission Unit ID	Description	Tank Dimensions	Emissions	Permitting Status
P003 ^a	One copper plating tanks	231" x 74" (45" deep); 118 ft ² surface area	0.067 lb/day	<i>De minimis</i>
	Two zinc plating tanks	336" x 64" (45" deep); 149 ft ² surface area 94" x 32" (36" deep), 20.89 ft ² surface area	0.16 lb/day 0.023 lb/day	<i>De minimis</i> <i>De minimis</i>
	Brass plating tank (Wetting agent in all)	120" x 50" (38" deep); 31.67 ft ² surface area	0.0077 Zn lb/day 0.0029 cyanide/day	<i>De minimis</i>
P004	Two silver plating tanks	22" x 22" (19" deep); 3.336 ft ² surface area	< 0.049 lb/day Ag < 0.007 lb/day cyanide	<i>De minimis</i>
P005	Electrolysis bath for stainless 70% phosphoric acid 21% nitric acid	48" x 36" (36" deep); 12 ft ² surface area	0.2691 lb/hr or 2.42 per 9 hour day	<i>De minimis</i>
	Passivation tank for stainless in Citric Acid; no agitation, ambient temperature; just cleaning	156" x 40" (21" deep); 43.3 ft ² surface area	0.45 lb/hr or 4.05 lb per 9 hour day	<i>De minimis</i>

^aP003 consists of four plating tanks.

Calculations

Emission Unit P003

COPPER TANKS

Brake shoes are plated with copper. They are an irregular kidney shape, 5.5" at the longest and 2.5" wide. Both sides are plated. They are flat. Total surface area for one piece is 27.5 in² or 0.0177 m². 3840 pieces are plated in 30 min. or 104,000 pieces in a 9 hour day. Total surface area plated in one day is (0.0177 m²) (104,000/day) = 1841 m². The tanks run at 3500 amps/hr per day.

Emission factor^b = 66 lb/million Amp-hr
(66 lb/1,000,000) (3500 amp/hr) (9 hr/day) = **2.079 lb/day** or 432 lb/yr (9 hr days, 4 day weeks)

^b Taken from *Technical Support Document for Air Discharge Permit APD 02-2442R2 for Pacific Northwest Plating, Inc., November 27, 2011*. Emission factor based on AP42.

ZINC TANKS

Pieces are similar to a box, with maximum measurements of 4" x 3" x 2". There is no top. The inside and outside are plated. Total surface of one piece is 94 in² or 0.0606 m². 12,800 pieces are done in one day, or 775.68 m² are plated in the large tank. The small tank accommodates

Emission Factor^c = (0.003 kg Zn/m²)

Large Tank - Emissions of Zn = (0.003 kg Zn/m²) (775.68m²) = **2.3 kg/day or 5.07 lb/day**

Small Tank – Emissions of Zn = (0.003 kg Zn/m²) (110.81m²) = **0.33 kg/day or 0.72 lb/day**

These factors are for uncontrolled emissions. The baths have a wetting agent therefore the emissions are less.

^cTable 6 *National Pollutant Inventory Emission Estimation Technique Manual for Electroplating and Anodising*.

BRASS TANK

Pieces plated are a 1.5" round medal. A full load consists of 480 pieces. One load is plated a day. The surface area of each medal is 1.77 in². Both sides are plated. Total surface area plated in one bath is 11.8 ft².

Emission Factor^d from Brass bath = (0.0032 kg Zn/m²)

Emission Factor^d from Brass bath = (0.0012 kg cyanide/m²)

Emissions of Zn from Brass bath = (0.0032 kg Zn/m²) (1.096 m²) = **0.0035 kg/day or 0.0077 lb/day**

Emissions of cyanide from Brass bath = (0.0012 kg cyanide/m²) (1.096 m²) = **0.0013 kg/day or 0.0029 lb/day**

These factors are for uncontrolled emissions. The baths have a wetting agent therefore the emissions are less.

^dTable 6 *National Pollutant Inventory Emission Estimation Technique Manual for Electroplating and Anodising*.

All four tanks use wetting agent. Control efficiency of fume suppressants based on AP42 emission factors for chrome plating with and without fume suppressant is 96.2%. Assuming this same efficiency, emissions from these tanks are:

Emissions from copper tanks = **0.067 lb/day**

Emissions from large zinc tank = **0.16 lb/day**

Emissions from small zinc tank = **0.023 lb/day**

Emissions from brass tank already *de minimis*

Emission Unit P004 (Silver Tanks)

Largest piece plated is 10" x 8" x 3", only the outside is plated. It takes one minute and the maximum coated in a day is 3 pieces. Total surface area plated in one day is (164 in²) (3/day) = 492 in² or 0.32 m²

Emission Factor^e = (0.07 kg Ag/m²)

Emissions of Ag = (0.07 kg Ag/m²) (0.32 m²) = **0.0224 kg/day or 0.049 lb/day**

Emission Factor^e = (0.01 kg cyanide/m²)

Emissions of cyanide = (0.01 kg cyanide/m²) (0.32 m²) = **0.0032 kg/day or 0.007 lb/day**

^eTable 6 *National Pollutant Inventory Emission Estimation Technique Manual for Electroplating and Anodising*.

Emission Unit P005 (Electrolysis bath for stainless)

The equation below can be used to calculate emissions from acid tank.

$$W \text{ (lb/hr)} = [M \text{ (lb/lb-mole)} \times A \text{ (ft}^2\text{)} \times P \text{ (psia @ } T1\text{)} \times K \text{ (ft/sec)} \times 3600 \text{ (sec/hr)}] / [R \text{ (psia ft}^3\text{/oR lb-mole)} \times T1 \text{ (oR)}]$$

Where: W = emission rate

M = molecular weight of compound

A = area of tank

P = vapor pressure of compound in solution

K = gas-mass transfer coefficient = $0.011479 \times U^{0.78} / M^{(1/3)}$

U = wind speed in miles per hour (assume 1 mile/hr)

R = gas constant = 10.73

T1 = absolute temperature of solution (oR = oF + 460) Will use 75° F as ambient.

Nitric acid emissions from P005 (lb/hr)

$$[(63.013 \text{ lb/lb-mole}) \times (12.0 \text{ ft}^2) \times (0.00174 \text{ (psia @ } T1\text{)}) \times (0.00288 \text{ (ft/sec)}) \times 3600 \text{ (sec/hr)}] / [10.73 \text{ (psia ft}^3\text{/}^\circ\text{R lb-mole)} \times 535^\circ \text{ R}] = \underline{\underline{0.0024 \text{ lb/hr}}}$$

Where:

$$P = 0.09 \times (1 \text{ ATM}/760 \text{ mmHg}) \times (14.7 \text{ psia}/1\text{ATM}) = 0.00174$$

using value for 35% at 30C, lowest number in *Perry's Chemical Engineers' Handbook* for nitric acid

$$K = 0.011479 \times 1^{0.78} / 63.013^{1/3} = 0.00288$$

Phosphoric acid emissions from P005 (lb/hr)

$$[(97.9951 \text{ lb/lb-mole}) \times (12 \text{ ft}^2) \times 0.1450 \text{ (psia)} \times 0.002494 \text{ (ft/sec)} \times 3600 \text{ (sec/hr)} / 10.73 \text{ (psia ft}^3\text{/oR lb-mole)} \times (535^\circ \text{ R})] = \underline{\underline{0.2667 \text{ lb/hr}}}$$

Where:

$$P = 7.5 \times (1 \text{ ATM}/760 \text{ mmHg}) \times (14.7 \text{ psia}/1\text{ATM}) = 0.1450$$

using value for 70% at 25° C in *Perry's Chemical Engineers' Handbook* for nitric acid

$$K = 0.011479 \times 1^{0.78} / 97.9951^{1/3} = 0.002494$$

0.0024 lb/hr + 0.2667 lb/hr = **0.2691 lb/hr** for both acids or **2.42 lb for a day**

^f This equation was obtained from *Emission Calculation Fact Sheet FACT SHEET #9840 (Rev. 11/05)* from Michigan Department of Environmental Quality

Passivation Tank

The equation below can be used to calculate emissions from acid tanks. This equation was obtained from *Emission Calculation Fact Sheet FACT SHEET #9840 (Rev. 11/05)* from Michigan Department of Environmental Quality

$$W \text{ (lb/hr)} = [M \text{ (lb/lb-mole)} \times A \text{ (ft}^2\text{)} \times P \text{ (psia @ T1)} \times K \text{ (ft/sec)} \times 3600 \text{ (sec/hr)}] / [R \text{ (psia ft}^3\text{/oR lb-mole)} \times T1 \text{ (oR)}]$$

Where: W = emission rate

M = molecular weight of compound

A = area of tank

P = vapor pressure of compound in solution

K = gas-mass transfer coefficient = $0.011479 \times U^{0.78} / M^{(1/3)}$

U = wind speed in miles per hour (assume 1 mile/hr)

R = gas constant = 10.73

T1 = absolute temperature of solution (oR = oF + 460)

Will use 75° F as ambient

Citric acid emissions from the passivation tank (lb/hr)

$[(192.13 \text{ lb/lb-mole}) \times (43.3 \text{ ft}^2) \times (0.216 \text{ (psia @ T1)}) \times (0.002 \text{ (ft/sec)}) \times 3600 \text{ (sec/hr)}] / [10.73 \text{ (psia ft}^3\text{/}^\circ\text{R lb-mole)} \times 535^\circ \text{ R}] = 2.25 \text{ lb/hr}$ for 50% solution or for 10% solution estimate **0.45 lb/hr or 4.05 lb/day.**

Where:

$P = 11.16 \times (1 \text{ ATM}/760 \text{ mmHg}) \times (14.7 \text{ psia}/1\text{ATM}) = 0.216$

using value for 50% at 25° C from MSDS from HydroChem

$K = 0.011479 \times 1^{0.78} / 192.13^{1/3} = 0.002$

Attached is the MSDS for the citric passivation 539m use. The tank is run from ambient to 90 degrees. The tank make up is 10% 539M 90% water. The electrolysis bath is run at 75-85 degrees.



Cleveland Local Air Agency

REQUEST FOR WITHDRAWAL OR REVOCATION

Form Revised: 08/21/2008

INSTRUCTIONS

This form is to be completed to request the withdrawal of any or all air contaminant sources at a facility registered by the Ohio EPA and Cleveland Local Air Agency. The original form should be placed in the facility's general file and copies in any applicable air contaminant source files. Withdraw in Anaximenes and STARS 2. Give copies to the Chief of Enforcement and Chief of Engineering. If the ENTIRE FACILITY is to be shut-down, remember to shut-down the facility in CETA and e-mail Linda Lazich at Linda.Lazich@epa.state.oh.us

FACILITY INFORMATION

Facility Identification Number:	13-18-00-4152
Facility Name:	Aircraft Plating Corporation
Facility Address:	1106 Clark Ave., Cleveland, OH 44109-1824
Facility County:	Cuyahoga

Emissions Unit	Description	Dismantle or PBR Date‡	Effective Termination Date†
B002	1.26 mmBtu/hr natural gas fired boiler	1985	1985
P001	Nickel and Chrome Plating	2005	2005

‡ Include Dismantle Date only if emissions unit was physically removed.

† Effective Termination Date is the date the source would be considered withdrawn, either by being rendered physically inoperable, considered exempt from permitting requirements, or physically removed.

Is the entire facility to be withdrawn? (i.e. Are <u>all</u> EUs being withdrawn or subject to Permit-By-Rule?)	No
Did the contact or responsible official submit a written request to be withdrawn?	Yes
Withdrawal from all databases (Ohio EPA and CDAQ databases)? (Ohio EPA Databases: STARS 2)	Yes
Reason for Withdrawal:	EUs have been dismantled and removed

Recommended By: Dave DeChant

Date Form Completed: 11/13/12

CDAQ only:

If facility is in Cleveland and requires a City Permit to Operate, then note EU Status as "City Permit" in CDAQ database. Only select "Withdrawn" if no longer operated or not subject to any city or state requirements.