

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **07 2 0 0 9 - 0 0 3** Project Number: 2008-06-003

Parent Company: P. T. C. Alliance Corporation

Parent Company Address: 6051 Wallace Rd, Wexford, PA 15090

Installation Name: Enduro Industries, Incorporated

Installation Address: 2001 Orchard Drive, Hannibal, MO 63401-6005

Location Information: Ralls County, S1, T56N, R5W

Application for Authority to Construct was made for:
 The installation of new etch tanks, chromium plating tanks, and scrubbers to increase the hard chromium plating capacity. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
 - Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUL - 2 2009

EFFECTIVE DATE


 DIRECTOR OR DESIGNEE
 DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2008-06-003
Installation ID Number: 173-0024
Permit Number:

Enduro Industries, Incorporated
2001 Orchard Drive
Hannibal, MO 63401-6005

Complete: June 2, 2008

Parent Company:
P. T. C. Alliance Corp.
6051 Wallace Rd
Wexford, PA 15090

Ralls County, S1, T56N, R5W

REVIEW SUMMARY

- Enduro Industries, Incorporated (hereinafter Enduro Industries) has applied for authority to increase their hard chromium plating capacity.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern from this process is hexavalent chromium.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart N, *National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks* applies to the hard chromium plating tanks.
- The MACT standard, 40 CFR Part 63, Subpart WWWW, *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations* applies to the chromic acid etch tanks.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to the proposed equipment.
- Mist eliminator scrubbers equipped with composite mesh pads are being used to control the hexavalent chromium emissions from the hard chromium plating tanks. Mist eliminator scrubbers or fume suppressants will be used to control the hexavalent chromium emissions from the chromic acid etch tanks.

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential controlled emissions of hexavalent chromium are below the major source levels.
- This installation is located in Ralls County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was not performed for this review. Although the potential emissions of hexavalent chromium exceed the screening model action level (SMAL), the sources of hexavalent chromium are subject to MACT standards which provide guidance for controlling emissions. Therefore, modeling the emissions of hexavalent chromium is not required for this project.
- Emissions testing may be required by the MACT that applies to the hard chromium plating tanks.
- In December 2005, the Environmental Protection Agency (EPA) decided to permanently exempt from Title V operating permits facilities that were subject to 40 CFR Part 63, Subpart N. Therefore, no Operating Permit is required for this installation.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

Enduro Industries is an existing, hard chromium electroplating facility located in Ralls County, Missouri. While the facility's controlled emissions are below the major levels for HAPs, Enduro Industries holds a section (5) construction permit because its existing potential uncontrolled emissions of individual HAPs exceeds the 10 tons per year limit. Enduro Industries also holds a Basic Operating Permit because it is subject to the MACT standard: 40 CFR Part 63, Subpart N, *National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks*. However, in December 2005, the Environmental Protection Agency (EPA) decided to permanently exempt from Title V operating permits facilities that were subject to 40 CFR Part 63, Subpart N. Therefore, Enduro Industries may write to the Air Pollution Control Program and request that their Basic Operating Permit be terminated.

Enduro Industries produces hydraulic cylinder rods. The manufacturing processes include grinding, surface hardening, chrome plating, polishing, and metal cutting. The first steps in the process are to prepare the surface of raw steel bars with a wet grinding step followed by an electrochemical etching of the surface. The etching tanks contain chromic acid and perform an electrolytic reverse etching process. During this process, metal is removed from the working surface by oxidation, leaving the base metal clean and suitable for chrome plating.

The bars are then electrochemically plated in a solution of chromic acid, sulfuric acid, and water. Chromic acid is a source of hexavalent chromium emissions which are generated during the plating process as gases rise to the surface and escape into the air carrying liquid with them in the form of a fine mist. As the hexavalent chromium emissions are in the form of a mist, they are also considered particulate matter less than 10 microns in diameter (PM₁₀). After chrome plating, the bars are finished with process steps including rinsing, polishing, and hardening.

The following construction permits have been issued to Enduro Industries from the Air Pollution Control Program.

Table 1: Previously Issued Construction Permits

Permit Number	Description
0894-005	Installation of 3 chromium plating process lines.

PROJECT DESCRIPTION

According to the information provided in the application, Enduro Industries is planning to increase their plating capacity by relocating 3 existing chromic acid etch tanks and installing 4 new hard chromium plating tanks. The facility has three plating lines known as Phase I, II, and III. Two new plating tanks will be installed on the Phase I plating line and one new plating tank will be installed on both the Phase II and the Phase III plating lines. All four of the new plating tanks will have a rectifier capacity of no more than 25,000 Amp-hr. Three of the four new plating tanks will be constructed from existing etch tanks, and the etch tank process equipment will be relocated to existing spare tanks. The etch tank relocation is not considered like-kind replacement because Enduro Industries would like to have the flexibility to control emissions from the etch tanks using either mist eliminator scrubbers or fume suppressant technology. As the emissions from the etch tanks are currently controlled with mist eliminator scrubbers, a change to using a fume suppressant would be considered an increase in emissions. The etch tanks for Phase I, II, and III all have a rectifier capacity of 8,000 Amp-hr. The pollutant of concern from this project is primarily the hazardous air pollutant (HAP), hexavalent chromium, generated by the electroplating process.

EMISSIONS/CONTROLS EVALUATION

Emissions of hexavalent chromium from the hard chromium plating tanks will be controlled by mist eliminator scrubbers equipped with composite mesh pads. One new scrubber, control device 5 (CD5) (EP-7), will be added to the Phase I plating line to control the emissions from one of the new plating tanks. The emissions from all of the other new plating tanks will be controlled with existing scrubbers. CD1 (EP-1) will control increased emissions on Phase I, CD2 (EP-2) will control increased emissions on Phase II, and CD3 (EP-6) will control increased emissions on Phase III. The emissions controlled by CD4 (EP-5) are not expected to change as a result of this project.

Emissions of hexavalent chromium from the chromic acid etch tanks will be controlled with either mist eliminator scrubbers or with fume suppressant technology. As the emission factor is higher for fume suppressant technology, the emissions from the etch tanks were calculated assuming the worst case situation with all etch tanks using fume suppressant as the control method. There are currently no emission factors available for chromic acid etching, so the emission factors for hard chromium plating were used to estimate the potential emissions. The actual emissions from the etching process are expected to be much less than the calculated potential emissions.

Table 2: Emission Unit Summary

Emission Unit	Plating Line	Maximum Design Rating	Control Device	Emission Points
Plating Tank I-D	Phase I	25,000 Amp-hr	CD5	EP-7
Plating Tank I-E	Phase I	25,000 Amp-hr	CD1	EP-1
Etch Tank I-F	Phase I	8,000 Amp-hr	N/D	
Plating Tank II-E	Phase II	25,000 Amp-hr	CD2	EP-2
Etch Tank II-F	Phase II	8,000 Amp-hr	N/D	
Plating Tank III-E	Phase III	25,000 Amp-hr	CD3	EP-6
Etch Tank III-F	Phase III	8,000 Amp-hr	N/D	

N/D = Not Determined.

The emission factors were obtained from 40 CFR Part 63, Subpart N - *National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks* and from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 12.20 *Electroplating* (July 1996). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Controlled Emissions ¹	Existing Actual Emissions (2007 EIQ) ²	Potential Uncontrolled Emissions of the Application	Potential Controlled Emissions of the Application
PM ₁₀	15.0	1.5	0.01	9.31	0.282
SO _x	40.0	N/D	N/D	N/A	N/A
NO _x	40.0	N/D	0.33	N/A	N/A
VOC	40.0	N/D	0.02	N/A	N/A
CO	100.0	N/D	0.07	N/A	N/A
HAPs (Hexavalent chromium)	10.0	1.5	N/D	9.31	0.282
Total HAPs	25	1.5	N/D	9.31	0.282

N/A = Not Applicable; N/D = Not Determined

¹Existing potential emissions were obtained from construction permit 0894-005

²Existing actual emissions obtained from the applicant's 2007 Emission Inventory Questionnaire (EIQ)

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions are below de minimis levels.

APPLICABLE REQUIREMENTS

Enduro Industries, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks*, 40 CFR Part 63, Subpart N
- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*, 40 CFR Part 63, Subpart WWWWWW

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Kathi Jantz
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 29, 2008, received June 2, 2008, designating P. T. C. Alliance Corp. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Northeast Regional Office Site Survey, dated June 5, 2008.

Mr. Jeff Burditt
Safety/Trainer Coordinator
Enduro Industries, Inc.
2001 Orchard Drive
Hannibal, MO 63401-6005

RE: New Source Review Permit - Project Number: 2008-06-003

Dear Mr. Burditt:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your amended operating permit (if applicable) is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Kathi Jantz, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:kjl

Enclosures

c: Northeast Regional Office
PAMS File: 2008-06-003

Permit Number: