

AIR EMISSION PERMIT NO. 05300247- 002

IS ISSUED TO

Hard Chrome Inc

Hard Chrome Inc.
2631 2nd Street Northeast
Minneapolis, Hennepin County, MN 55418

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit - Reissuance	07/27/2005, 12/21/2009
Minor Amendment	08/20/2008

This permit supersedes Permit No. 05300247-001 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: State; Nonmajor for Pt 70/True Minor for NSR

Issue Date: January 26, 2010

Expiration: Non-expiring
All Title I Conditions do not expire.

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for Paul Eger
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

The Hard Chrome Inc. facility is a "job shop" plating facility. The facility electroplates chrome, as well as zinc, nickel, and copper. The facility has a hard chrome line, an electroless nickel line, a decorative chrome/nickel line, two zinc lines, a zinc barrel line, and an irridite line. Each line consists of a series of open surface tanks. Facility emission units include three boilers, two hard chrome tanks, one decorative chrome tank, and several plating line process tanks. The facility also has a number of emissions sources that qualify as insignificant activities under Minn. R. 7007.1300 including six space heaters, electric ovens, brazing, soldering, and welding equipment, and a sludge dryer with a venturi scrubber.

The main pollutants emitted at this facility are particulate matter (PM), particulate matter less than 10 microns (PM₁₀), and toxics including chromium compounds, hydrochloric acid, nickel compounds, and cyanide compounds.

This facility utilizes a 4-stage composite mesh pad mist elimination system on its hard chrome plating tanks and incorporates a chemical fume suppressant containing a wetting agent into its decorative chrome tank to meet the requirements of the Chrome Electroplating NESHAP.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item:**Total Facility**

What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
The Permittee shall not make a modification or other change that would make their stationary source subject to the requirement to obtain a part 70 permit. The Permittee shall not begin actual construction of the modification or other change prior to obtaining the appropriate permit.	Minn. R. 7007.1150 subp. E
The owner or operator of an existing area source that increases actual or potential emissions of HAPs such that the area source becomes a major source must comply with the provisions for existing major sources, including the reporting provisions of 40 CFR 63.347(g) immediately upon becoming a major source.	40 CFR 63.343(a)(3); Minn. R. 7011.7120
Notification of New and Reconstructed Sources: Notify the Administrator as soon as practicable before construction or reconstruction commences for any hard or decorative chromium electroplating units or facilities.	40 CFR 63.345; Minn. R. 7011.7120
The Permittee shall maintain a list of plating tanks. For each tank the list shall include the bath constituents and the concentrations of the constituents in the baths. For each tank the Permittee shall also track the make-up added to the baths. The list shall be updated monthly.	Minn. R. 7007.0800, subp. 4 and 5
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subps. 14 and 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.	Minn. R. 7017; 40 CFR 63.343(b)
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
When the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. For nonexpiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3**

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Facility Name: Hard Chrome Inc

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Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 001 Hard Chrome Plating Tanks**Associated Items:** EU 004 Hard Chrome Plating Tank 1a

EU 005 Hard Chrome Plating Tank 2a

What to do	Why to do it
PART 63 GENERAL PROVISIONS	hdr
General provisions of Part 63 applicable to Subpart N are provided in Table 1 to Subpart N of Part 63.	40 CFR 63
EMISSION LIMITS AND OPERATING LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies to each hard chrome plating tank individually.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Chromium compounds: less than or equal to 0.015 milligrams/DSCM of total chromium in the exhaust gas stream discharged to the atmosphere.	40 CFR 63.342(c)(1)(i); Minn. R. 7011.7120
If the Permittee is controlling a group of tanks with a common add-on air pollution control device, the emission limitations apply whenever any one affected source is operated.	40 CFR 63.342(b)(2); Minn. R. 7011.7120
The emission limit identified in 63.342(c) applies to the group of affected sources if the affected sources are performing the same type of operation, are subject to the same emission limitations, and are not controlled by an add-on air pollution control device also controlling nonaffected sources.	40 CFR 63.342(b)(2)(i); Minn. R. 7011.7120
POLLUTION CONTROL EQUIPMENT REQUIREMENTS (See CE 001)	hdr
The Permittee shall operate the composite mesh pad mist elimination system in accordance with the requirements listed in CE 001, at all times that any one of the hard chrome plating tanks, EU004 and EU005 are operating.	40 CFR 63.342(c)(1)(i); Minn. R. 7011.7120
WORK PRACTICE STANDARDS	hdr
At all times, including periods of startup, shutdown, and malfunction, owners and operators shall operate and maintain any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices and consistent with the operation and maintenance (O&M) plan required by 40 CFR 63.342(f)(3).	40 CFR 63.342(f)(1)(i); Minn. R. 7011.7120
Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the O&M plan required by 40 CFR 63.342(f)(3).	40 CFR 63.342(f)(1)(ii); Minn. R. 7011.7120
Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.	40 CFR 63.342(f)(1)(iii); Minn. R. 7011.7120
Determination of whether acceptable O&M procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the source.	40 CFR 63.342(f)(2)(i); Minn. R. 7011.7120
Based on the results of a determination made under 40 CFR 63.342(f)(2)(i), the Administrator may require that the Permittee make changes to the operation and maintenance plan required by 40 CFR 63.342(f)(3). Revisions may be required if the Administrator finds that the plan: (A) does not address a malfunction that has occurred; (B) fails to provide for the operation of the source, the air pollution control techniques, or the control system or the process monitoring equipment during a malfunction in a manner consistent with good air pollution control practices; or (C) does not provide adequate procedures for correcting malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as possible.	40 CFR 63.342(f)(2)(ii); Minn. R. 7011.7120
The Permittee shall develop and maintain an O&M Plan including the following elements: (A) the plan shall specify the O&M criteria for the unit, the add-on air pollution control device, and the process and control system monitoring equipment, and shall include a standardized checklist to document the O&M of the unit; (B) the plan shall incorporate the work practice standards for any air pollution control or monitoring equipment, as identified in Table 1 of 40 CFR pt. 63, subp. N; (C) not applicable; (D) procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and (E) a systematic procedure for identifying malfunctions of process equipment, air pollution control devices, and process and control system monitoring equipment and for implementing corrective actions to address such malfunctions.	40 CFR 63.342(f)(3)(i); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

If the O&M plan fails to address an event that meets the characteristics of a malfunction at the time the plan is developed, the Permittee shall revise the O&M plan within 45 days after such an event occurs. The revised plan shall include the elements listed in 40 CFR Section 63.342(f)(3)(ii).	40 CFR 63.342(f)(3)(ii); Minn. R. 7011.7120
Recordkeeping associated with the O&M plan is identified in 40 CFR 63.346(b). Reporting associated with the O&M plan is identified in 40 CFR 63.347(h) and 40 CFR 63.342(f)(3)(iv).	40 CFR 63.342(f)(3)(iii); Minn. R. 7011.7120
If action taken by the permittee during periods of malfunction are inconsistent with the procedures specified in the O&M plan, the permittee shall record the actions taken for that event and shall report by phone such actions within two working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within seven working days after the end of the event, unless the permittee makes alternate reporting arrangements with the Administrator in advance.	40 CFR 63.342(f)(3)(iv); Minn. R. 7011.7120
The permittee shall keep the written O&M plan on record after it is developed to be made available for inspection, upon request, for the life of the unit or until the unit is no longer subject to the provisions of this subpart. If the O&M plan is revised, the permittee shall keep previous versions of the O&M plan on record for a period of five years after each revision to the plan.	40 CFR 63.342(f)(3)(v); Minn. R. 7011.7120
The permittee may use applicable standard operating procedures manuals, OSHA plans, or other existing plans to satisfy the O&M plan requirement, provided the alternative plans meet the requirements of this section.	40 CFR 63.342(f)(3)(vi); Minn. R. 7011.7120
RECORDKEEPING REQUIREMENTS (see also CE 001)	hdr
The Permittee shall fulfill all recordkeeping requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A of this part as identified in Table 1 of this subpart.	40 CFR 63.346(a); Minn. R. 7011.7120
Maintain the following records for EU004 and EU005: (1) Inspection records for the air pollution control equipment and monitoring equipment, as described in 40 CFR Section 63.346(b)(1). (2) Records of all maintenance performed on the process, control, and monitoring equipment. (3) Records of occurrence, duration, and cause of each malfunction of process, control, or monitoring equipment. (4) Records of actions taken during periods of malfunction, if such actions are inconsistent with the provisions of the O & M plan. (5) Other records necessary to demonstrate consistency with the provisions of the O & M plan. (6) Performance test reports, if such tests are performed. (7) All measurements necessary to determine conditions of performance tests, if such tests are performed.	40 CFR 63.346(b)(1)-(7); Minn. R. 7011.7120
The Permittee shall maintain the following records for EU004 and EU005: (8) Records of monitoring data that are used to demonstrate compliance with the standard, including date and time of data collection. (9) The date and time of commencement and completion of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, control, or monitoring equipment. (10) The date and time of commencement and completion of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the process, control, or monitoring equipment. (11) The total operating time of the source during the reporting period.	40 CFR Section 63.346(b)(8)-(11); Minn. R. 7011.7120
REPORTING REQUIREMENTS	hdr
The Permittee shall fulfill all reporting requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A as identified in Table 1 of this subpart.	40 CFR 63.347(a); Minn. R. 7011.7120
Content of Annual Continuous Compliance Report: The report must contain the following information: (i) The company name and address; (ii) An identification of the operating parameter that is monitored for compliance determination, as required by 40 CFR Section 63.343(c); (iii) The relevant emission limitation for the affected source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of compliance status required by 40 CFR Section 63.347(e); (iv) The beginning and ending dates of the reporting period; (v) A description of the type of process performed in the affected source; (vi) The total operating time of the affected source during the reporting period;	40 CFR 63.347(h)(1); Minn. R. 7011.7120
Content of Annual Continuous Compliance Report, continued: (vii) not applicable; (viii) A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes;	40 CFR 63.347(h)(1); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Content of Annual Continuous Compliance Report, continued: (ix) A certification by a responsible official that the work practice standards in 40 CFR Section 63.342(f) were followed in accordance with the O&M plan for the source; (x) If the O&M plan required by 40 CFR Section 63.342(f)(3) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the report(s) required by 40 CFR Section 63.342(f)(3)(iv) documenting that the operation and maintenance plan was not followed; (xi) A description of any changes in monitoring, processes, or controls since the last reporting period; (xii) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and (xiii) The date of the report.	40 CFR 63.347(h)(1); Minn. R. 7011.7120
Reports of exceedances: If the following conditions are met, semiannual reports shall be prepared and submitted to the Administrator A. The total duration of excess emissions is 1% or greater of the total operating time for the operating period, and B. The total duration of malfunctions of the add-on air pollution control device and monitoring equipment is 5% or greater of the total operating time	40 CFR 63.347(h)(2)(i); Minn. R. 7011.7120
Once the permittee reports an exceedance as defined in 40 CFR 63.347(h)(2)(i), ongoing compliance status reports shall be submitted semiannually until a request to reduce the reporting frequency under 40 CFR 63.347(h)(3) is approved.	40 CFR 63.347(h)(2)(ii); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 002 Boilers**Associated Items:** EU 001 Boiler #1

EU 002 Boiler #2

EU 003 Boiler #3

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity , except for one six-minute period per hour of not more than 60 percent opacity. This limit applies individually to each unit in GP 002	Minn. R. 7011.0510, subp. 2
Total Particulate Matter: less than or equal to 0.40 lbs/million Btu heat input This limit applies individually to each unit in GP 002. The potential to emit from each unit is 0.008 lb/MMBtu or less due to equipment design and allowable fuels.	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input . This limit applies individually to each unit in GP 002. The potential to emit from each unit is .001 lb/MMBtu or less due to equipment design and allowable fuels.	Minn. R. 7011.0510, subp. 1
Fuel limited to natural gas and propane only, by design.	Minn. R. 7005.0100, subp. 35a
The Permittee shall keep records of fuel purchases on a monthly basis.	Minn. R. 7007.0800, Subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-8**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 003 Air Make-up Units**Associated Items:** EU 011 Air Make-up Unit

EU 012 Air Make-up Unit

EU 013 Air Make-up Unit

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 003.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input . This limit applies individually to each unit in GP 003. The potential to emit from each unit is 0.001 lb/MMBtu due to equipment design and allowable fuels.	Minn. R. 7011.0610, subp. 2(A)(2)
Fuel limited to natural gas and propane only, by design.	Minn. R. 7005.0100, subp. 35a
The Permittee shall keep records of fuel purchases on a monthly basis.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 004 Zinc Line #1**Associated Items:** EU 014 Nickel Strip - zinc line #1

EU 015 Soak Cleaner - zinc line #1

EU 016 Electroclean - zinc line #1

EU 017 Hydrochloric Acid 1- zinc line #1

EU 018 Electroclean - zinc line #1

EU 019 Hydrochloric Acid 2 - zinc line #1

EU 020 Zinc Tank - zinc line #1

EU 021 Zinc Tank - zinc line #1

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 004.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 005 Zinc Line #2**Associated Items:** EU 022 Soak Cleaner - zinc line #2

EU 023 Electroclean - zinc line #2

EU 024 Hydrochloric Acid 3 - zinc line #2

EU 025 Zinc Tank - zinc line #2

EU 026 Zinc Tank - zinc line #2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 005.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 006 Electroless Nickel Line**Associated Items:** EU 027 Soak Cleaner - e-less nickel line

EU 028 Electroclean - e-less nickel line

EU 029 Hydrochloric Acid 4 - e-less nickel line

EU 031 electroless nickel - e-less nickel

EU 032 electroless nickel - e-less nickel line

EU 033 electroless nickel - e-less nickel line

EU 060 Electroless Nickel - e-less nickel line

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 006.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 007 Zinc Barrel Line**Associated Items:** EU 034 Soak Cleaner - zinc barrel line

EU 035 Electroclean - zinc barrel line

EU 036 Hydrochloric Acid 5 - zinc barrel line

EU 037 Alkaline Zinc - zinc barrel line

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 007.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 008 Hard Chrome Line**Associated Items:** EU 038 Soak Cleaner - hard chrome line

EU 039 Electrocleaner - hard chrome line

EU 040 Hydrochloric Acid 6 - hard chrome line

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 008.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 009 Decorative Chrome/Nickel Line

Associated Items: EU 041 Electrocleaner - dec chrome/nickel line
EU 042 Hydrochloric Acid 7 - dec chrome/nickel line
EU 043 Nickel Strike - dec chrome/nickel line
EU 044 Copper Strike - dec chrome/nickel line
EU 045 Tin Tank - dec chrome/nickel line
EU 046 Copper Tank - dec chrome/nickel line
EU 047 Acid Nickel - dec chrome/nickel line
EU 048 Passivation - dec chrome/nickel line
EU 049 Nitric Acid - dec chrome/nickel tank
EU 050 Zincate - dec chrome/nickel line
EU 051 Caustic Etch - dec chrome/nickel line

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 009.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-15**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 010 Irridite Line**Associated Items:** EU 052 Alkaline Soak - irridite line

EU 053 Caustic Etch - irridite line

EU 054 Acid Tank - irridite line

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in GP 010.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: GP 011 Plating and Polishing Operations (NESHAP WWWWWW)

Associated Items: EU 031 electroless nickel - e-less nickel

EU 032 electroless nickel - e-less nickel line

EU 033 electroless nickel - e-less nickel line

EU 043 Nickel Strike - dec chrome/nickel line

EU 047 Acid Nickel - dec chrome/nickel line

EU 055 Chromate - zinc line #1

EU 056 Chromate - zinc line #1

EU 057 chromate - zinc line #2

EU 058 Chromate - zinc line #2

EU 059 Chromate - zinc line #2

EU 060 Electroless Nickel - e-less nickel line

EU 061 Chromate - zinc barrel line

EU 062 Chromate - zinc barrel line

EU 063 yellow irridite - dec chrome/nickel line

EU 064 Clear irridite tank - irridite line

EU 065 Yellow irridite tank - irridite line

What to do	Why to do it
40 CFR subp. WWWWWW Requirements, Enforcement not Delegated to the MPCA.	hdr
For all existing affected sources, the Permittee shall be in compliance with the applicable requirements of Subp. WWWWWW NESHAP no later than July 1, 2010. For new affected sources (the irridite line, EU 64 & 65) the Permittee shall be in compliance with the applicable requirements upon start up.	40 CFR Section 63.11506(a)
STANDARDS AND MANAGEMENT PRACTICES	hdr
Standards for Non-cyanide Electroplating, Electroforming, or Electropolishing (EUs 43 & 47 only)	hdr
For each non-cyanide electroplating, electroforming, or electropolishing tank, the Permittee shall comply with the requirements of (1), (2), or (3) below: (1) The Permittee shall use a wetting agent/fume suppressant in the bath of the affected tank. (2) The Permittee shall capture and exhaust emissions from the affected tank to control equipment (either a composite mesh pad, packed bed scrubber, or mesh pad mist eliminator). (3) the Permittee shall cover the tank surfaces as follows: i) for batch electrolytic process tanks, cover all of the effective surface area of the tank for at least 95 percent of the electrolytic process operating time. ii) for continuous electrolytic process tanks, cover at least 75 percent of the surface of the tank, whenever the electrolytic process tank is in operation.	40 CFR 63.11507(a)
The Permittee shall maintain records of which compliance option under 40 CFR Section 63.11507(a) they are using to comply with the Subp. WWWWWW NESHAP at any given time. If the Permittee switches from one compliance option to another, the Permittee shall update the records, including the date of the switch.	Minn. R. 7007.0800, subp. 5
If the Permittee complies with 40 CFR 63.11507(a)(1), the Permittee shall i) initially add the wetting agent/fume suppressant in the amounts recommended by the manufacturer for the specific type of electrolytic process. ii) add wetting agent/fume suppressant in proportion to the other bath chemistry ingredients that are added to replenish the tank bath, as in the original make-up of the tank. If a wetting agent/fume suppressant is included in the electrolytic process bath chemicals used in the affected tank according to the manufacturer's instructions, it is not necessary to add additional wetting agent/fume suppressant to the tank to comply with this rule.	40 CFR Section 63.11507(a)(1)(i)-(iii)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

If the Permittee complies with 40 CFR 63.11507(a)(2), the Permittee shall operate the control equipment according to the manufacturer's specifications and operating instructions. The Permittee shall keep the manufacturer's specifications and operating instructions at the facility at all times in a location where they can be easily accessed by the operators.	40 CFR Section 63.11507(a)(2)(i) and (ii)
Management Practices for Plating and Polishing Processes (all GP 011 units)	hdr
The Permittee shall minimize bath agitation when removing any parts processed in the tank, as practicable except when necessary to meet part quality requirements.	40 CFR Section 63.11507(g)(1)
The Permittee shall maximize draining of bath solution back into the tank, as practicable, by extending drip time when removing parts from the tank; using drain boards (drip shields); or withdrawing parts slowly from the tank.	40 CFR Section 63.11507(g)(2)
The Permittee shall optimize the design of barrels, racks, and parts to minimize dragout of bath solution (such as by using slotted barrels and tilted racks, or by designing parts with flow-through holes), as practicable.	40 CFR Section 63.11507(g)(3)
The Permittee shall use tank covers, if already owned and available at the facility, whenever practicable.	40 CFR Section 63.11507(g)(4)
The Permittee shall minimize or reduce heating of process tanks, as practicable.	40 CFR Section 63.11507(g)(5)
The Permittee shall perform regular repair, maintenance, and preventative maintenance of racks, barrels, and other equipment associated with affected sources, as practicable.	40 CFR Section 63.11507(g)(6)
The Permittee shall minimize bath contamination, as practicable.	40 CFR Section 63.11507(g)(7)
The Permittee shall maintain quality control of chemicals, and chemical and other bath ingredient concentration in the tanks, as practicable.	40 CFR Section 63.11507(g)(8)
The Permittee shall perform general good housekeeping, such as regular sweeping or vacuuming, if needed, and periodic washdowns, as practicable.	40 CFR Section 63.11507(g)(9)
The Permittee shall minimize spills and overflow of tanks, as practicable.	40 CFR Section 63.11705(g)(10)
The Permittee shall perform regular inspections to identify leaks and other opportunities for pollution prevention.	40 CFR Section 63.11507(g)(12)
REPORTING REQUIREMENTS	hdr
Notification of Compliance Status: due before 07/02/2010: The Notification of Compliance shall include: (i) list of affected sources and plating and polishing metal HAP used in, or emitted by, those sources; (ii) methods used to comply with the applicable management practices and equipment standards; (iii) description of the capture and emission control systems used to comply with the applicable equipment standards; (iv) statement by the owner or operator of the affected sources as to whether the source is in compliance with the applicable standards or other requirements.	40 CFR Section 63.11509(b)
Annual Compliance Report: The Permittee shall prepare an annual certification of compliance report. The annual certification of compliance shall only be submitted if a deviation from the requirements of this subpart occur during the reporting year. Each annual compliance report must be prepared no later than January 31 of the year immediately following the reporting period. If a deviation has occurred during the year, each annual compliance report shall be submitted along with the deviation report, and postmarked or delivered no later than January 31 of the year immediately following the reporting period.	40 CFR Section 63.11509(c)
Annual Compliance Report Con't: The annual compliance report shall include: (1) For electroplating, electroforming, or electropolishing tanks that use a wetting agent/fume suppressant to comply with this subpart, a statement that the Permittee added the wetting agent/fume suppressant to the bath according to the manufacturer's specification and instructions (2) For electroplating, electroforming, or electropolishing tanks that use a control system to comply with this subpart, a statement that the Permittee has operated and maintained the control system according to the manufacturer's specifications and instructions. (3) A statement that the Permittee has implemented the applicable management practices, as practicable.	40 CFR Section 63.11509(c)
Deviations Report: The Permittee shall report any deviations from the compliance requirements of this subpart that occurred during the year. The report shall also include the corrective action taken and shall be submitted to the delegated authority.	40 CFR Section 63.11509(d)
RECORDKEEPING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

The Permittee shall keep the following records: (1) a copy of any Initial Notification and Notification of Compliance Status submitted and all documentation supporting those notifications; (2) Records specified in the General Provisions, 40 CFR Section 63.10(b)(2)(i)-(iii) & (xiv); (3) Records required to show continuous compliance with each management practice and equipment standard that applies to the facility.	40 CFR Section 63.11509(e)
Records shall be kept for a minimum of 5 years, and kept on site for a minimum of 2 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.	40 CFR Section 63.11509(f)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: EU 008 Decorative Chrome Plating Tank**Associated Items:** SV 009 decorative chrome plating stack

What to do	Why to do it
PART 63 GENERAL PROVISIONS	hdr
General provisions of Part 63 applicable to Subpart N are provided in Table 1 to Subpart N of Part 63.	40 CFR 63
EMISSION LIMITS AND OPERATING LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Plating bath components shall include a chemical fume suppressant containing a wetting agent when purchased.	40 CFR Part 63.342(d); Minn. R. 7011.7120
The Permittee shall control chromium discharged to the atmosphere by not allowing the surface tension of the electroplating bath contained within the affected source to exceed 45 dynes per centimeter as measured by a stalagmometer or 35 dynes per centimeter as measured by a tensiometer at any time during operation of the tank.	40 CFR Part 63.342(d)(2); Minn. R. 7011.7120
MONITORING TO DEMONSTRATE CONTINUOUS COMPLIANCE	hdr
Operation of the affected source at a surface tension greater than 45 dynes/cm as measured by a stalagmometer or 35 dynes/cm as measured by a tensiometer shall constitute noncompliance with the standards.	40 CFR 63.343(c)(5)(ii); Minn. R. 7011.7120
The surface tension shall be measured once every four hours during operation of the tank with a stalagmometer or a tensiometer as specified in Method 306B, Part 63, Appendix A	40 CFR 63.343(c)(5)(ii)(A); Minn. R. 7011.7120
The time between monitoring can be increased if there have been no exceedances. The surface tension shall be measured once every 4 hours of operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once every 40 hours of operation.	40 CFR 63.343(c)(5)(ii)(B); Minn. R. 7011.7120
Once an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule of once every 4 hours must be resumed. A subsequent decrease in frequency shall follow the schedule laid out in 40 CFR 63.343(c)(5)(ii)(B)	40 CFR 63.343(c)(5)(ii)(C); Minn. R. 7011.7120
Once a bath solution is drained from the tank and new solution added, the original monitoring schedule of once every 4 hours must be resumed, with a decrease in frequency allowed following the procedures of 40 CFR 63.343(c)(5)(ii)(B) and (C)	40 CFR 63.343(c)(5)(iii); Minn. R. 7011.7120
WORK PRACTICE STANDARDS	hdr
The Permittee is subject to the Work Practice Standards of 40 CFR 63.342(f). The Work Practice Standards of 40 CFR Part 63.342(f), current as of permit issuance, are included below.	40 CFR Part 63.342(f); Minn. R. 7011.7120
At all times, including periods of startup, shutdown, and malfunction, owners and operators shall operate and maintain any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices, consistent with the operation and maintenance (O&M) plan required by 40 CFR 63.342(f)(3).	40 CFR Part 63.342(f)(1)(i); Minn. R. 7011.7120
Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the O&M plan required by 40 CFR 63.342(f)(3).	40 CFR Part 63.342(f)(1)(ii); Minn. R. 7011.7120
Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.	40 CFR Part 63.342(f)(1)(iii); Minn. R. 7011.7120
Determination of whether acceptable O&M procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the source.	40 CFR Part 63.342(f)(2)(i); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Based on the results of a determination made under 40 CFR 63.342(f)(2)(i), the Administrator may require that the permittee make changes to the operation and maintenance plan required by 40 CFR 63.342(f)(3). Revisions may be required if the Administrator finds that the plan: (A) does not address a malfunction that has occurred; (B) fails to provide for the operation of the source, the air pollution control techniques, or the control system or the process monitoring equipment during a malfunction in a manner consistent with good air pollution control practices; or (C) does not provide adequate procedures for correcting malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as possible.	40 CFR Part 63.342(f)(2)(ii); Minn. R. 7011.7120
The Permittee shall develop and maintain an O&M Plan including the following elements: (A) the plan shall specify the O&M criteria for the unit, the add-on air pollution control device, and the process and control system monitoring equipment, and shall include a standardized checklist to document the O&M of the unit; (B) the plan shall incorporate the work practice standards for any air pollution control or monitoring equipment, as identified in Table 1 of 40 CFR pt. 63, subp. N; (C) not applicable; (D) procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and (E) a systematic procedure for identifying malfunctions of process equipment, air pollution control devices, and process and control system monitoring equipment and for implementing corrective actions to address such malfunctions.	40 CFR Part 63.342(f)(3)(i); Minn. R. 7011.7120
If the O&M plan fails to address an event that meets the characteristics of a malfunction at the time the plan is developed, the Permittee shall revise the O&M plan within 45 days after such an event occurs. The revised plan shall include the elements listed in 40 CFR Section 63.342(f)(3)(ii).	40 CFR Part 63.342(f)(3)(ii); Minn. R. 7011.7120
Recordkeeping associated with the O&M plan is identified in 40 CFR 63.346(b). Reporting associated with the O&M plan is identified in 40 CFR 63.347(h) and 40 CFR 63.342(f)(3)(iv).	40 CFR Part 63.342(f)(3)(iii); Minn. R. 7011.7120
If action taken by the permittee during periods of malfunction are inconsistent with the procedures specified in the O&M plan, the permittee shall record the actions taken for that event and shall report by phone such actions within two working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within seven working days after the end of the event, unless the permittee makes alternate reporting arrangements with the Administrator in advance.	40 CFR Part 63.342(f)(3)(iv); Minn. R. 7011.7120
The permittee shall keep the written O&M plan on record after it is developed to be made available for inspection, upon request, for the life of the unit or until the unit is no longer subject to the provisions of this subpart. If the O&M plan is revised, the permittee shall keep previous versions of the O&M plan on record for a period of five years after each revision to the plan.	40 CFR Part 63.342(f)(3)(v); Minn. R. 7011.7120
The permittee may use applicable standard operating procedures manuals, OSHA plans, or other existing plans to satisfy the O&M plan requirement, provided the alternative plans meet the requirements of this section.	40 CFR Part 63.342(f)(3)(vi); Minn. R. 7011.7120
RECORDKEEPING REQUIREMENTS	hdr
Fulfill all recordkeeping requirements outlined in 40 CFR 63.346 and in the General Provisions to 40 CFR part 63, according to the applicability of Subpart A as identified in Table 1 of Subpart N.	40 CFR 63.346(a); Minn. R. 7011.7120
Maintain the following records for EU008: (1) Inspection records for the air pollution control equipment and monitoring equipment, as described in 40 CFR Section 63.346(b)(1). (2) Records of all maintenance performed on the process, control, and monitoring equipment. (3) Records of occurrence, duration, and cause of each malfunction of process, control, or monitoring equipment. (4) Records of actions taken during periods of malfunction, if such actions are inconsistent with the provisions of the O & M plan. (5) Other records necessary to demonstrate consistency with the provisions of the O & M plan. (6) Performance test reports, if such tests are performed. (7) All measurements necessary to determine conditions of performance tests, if such tests are performed.	40 CFR 63.346(b)(1)-(7); Minn. R. 7011.7120
The Permittee shall maintain the following records for each source subject to the standard: (8) Records of monitoring data that are used to demonstrate compliance with the standard, including date and time of data collection. (9) The date and time of commencement and completion of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, control, or monitoring equipment. (10) The date and time of commencement and completion of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the process, control, or monitoring equipment. (11) The total operating time of the source during the reporting period. (12) not applicable. (13) date and time of fume suppressant addition. (14) bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components.	40 CFR Section 63.346(b)(8)-(14); Minn. R. 7011.7120
All records shall be retained on site for a period of 5 years.	40 CFR Section 63.346(c); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-21**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

REPORTING REQUIREMENTS	hdr
Fulfill all reporting requirements outlined in 40 CFR 63.347 and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A as identified in Table 1 of this subpart.	40 CFR 63.347(a); Minn. R. 7011.7120
Content of Annual Continuous Compliance Report: The report must contain the following information: (i) The company name and address; (ii) An identification of the operating parameter that is monitored for compliance determination, as required by 40 CFR Section 63.343(c); (iii) The relevant emission limitation for the affected source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of compliance status required by 40 CFR Section 63.347(e); (iv) The beginning and ending dates of the reporting period; (v) A description of the type of process performed in the affected source; (vi) The total operating time of the affected source during the reporting period;	40 CFR 63.347(h)(1); Minn. R. 7011.7120
Content of Annual Continuous Compliance Report, continued: (vii) not applicable; (viii) A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes;	40 CFR 63.347(h)(1); Minn. R. 7011.7120
Content of Annual Continuous Compliance Report, continued: (ix) A certification by a responsible official that the work practice standards in 40 CFR Section 63.342(f) were followed in accordance with the O&M plan for the source; (x) If the O&M plan required by 40 CFR Section 63.342(f)(3) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the report(s) required by 40 CFR Section 63.342(f)(3)(iv) documenting that the operation and maintenance plan was not followed; (xi) A description of any changes in monitoring, processes, or controls since the last reporting period; (xii) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and (xiii) The date of the report.	40 CFR 63.347(h)(1); Minn. R. 7011.7120
Reports of exceedances: If the following condition is met, semiannual reports shall be prepared and submitted to the Administrator: The total duration of excess emissions is 1% or greater of the total operating time for the reporting period, and	40 CFR 63.347(h)(2)(i); Minn. R. 7011.7120
Once the permittee reports an exceedance as defined in 40 CFR 63.347(h)(2)(i), ongoing compliance status reports shall be submitted semiannually until a request to reduce the reporting frequency under 40 CFR 63.347(h)(3) is approved.	40 CFR 63.347(h)(2)(ii); Minn. R. 7011.7120

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: EU 066 Wipe Cleaning

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-23

01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

Subject Item: CE 001 Mist Eliminator - High Velocity, i.e., V>250 Ft/Min**Associated Items:** EU 004 Hard Chrome Plating Tank 1a

EU 005 Hard Chrome Plating Tank 2a

What to do	Why to do it
OPERATING REQUIREMENTS	hdr
The Permittee shall operate the mesh pad mist elimination system at all times that any of the hard chrome plating tanks, EU004 and EU005 are operating.	40 CFR 63.342(c)(1)(i); Minn. R. 7011.7120
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 3.5 inches of water column measured at the mesh pad mist elimination system inlet.	40 CFR 63.343(c)(1)(ii); Minn. R. 7011.7120
The requirement to operate a composite mesh-pad system within the range of pressure drop limit does not apply during automatic washdown cycles of the composite mesh-pad system.	40 CFR Section 63.343(c)(1)(iv); Minn. R. 7011.7120
PERFORMANCE TESTING	hdr
The Permittee may repeat the performance test and establish as a new site-specific operating parameter the pressure drop across the composite mesh-pad system according to the requirements in 40 CFR Section 63.343(c)(1)(i) or (ii). To establish a new site-specific operating parameter for pressure drop, the Permittee shall satisfy the requirements specified in paragraphs 40 CFR Section 63.343 (c)(1)(iii)(A) through (D).	40 CFR Section 63.343(c)(1)(iii); Minn. R. 7011.7120
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored mesh pad mist elimination system is in operation.	40 CFR Section 63.344(d)(2); Minn. R. 7011.7120; Minn. R. 7007.0800, subp. 4
The permittee shall monitor and record the mist eliminator pressure drop at the mist eliminator inlet at least once each day of operation.	40 CFR 63.343(c)(1)(ii); Minn. R. 7011.7120
Quarterly Inspections must be completed in accordance with the most recent version of the O & M plan prepared for the system, and must include: 1. Visually inspect the device to ensure there is proper drainage, no chromic acid buildup on the pad, and no evidence of chemical attack on the structural integrity of the device. 2. Visually inspect the back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist. 3. Visually inspect the ductwork from the tank to the control device to ensure there are no leaks.	40 CFR Section 63.342(f)(3)(i); Minn. R. 7011.7120; Minn. R. 7007.0800, subps. 4, 5, and 14
The Permittee shall perform washdown of the mesh pads in accordance with the manufacturers recommendations and as required by the O&M plan required by this permit.	40 CFR Section 63.342(f)(3)(i)(B); Minn. R. 7011.7120; Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the mesh pad mist elimination system or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the mesh pad mist elimination system. The Permittee shall keep a record of the type and date of any corrective action taken for the mesh pad mist elimination system.	Minn. R. 7007.0800, subp. 4, 5, and 14

TABLE B: SUBMITTALS**B-1** 01/26/10

Facility Name: Hard Chrome Inc
Permit Number: 05300247 - 002

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: RECURRENT SUBMITTALS**B-2** 01/26/10

Facility Name: Hard Chrome Inc

Permit Number: 05300247 - 002

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility
Compliance Status Report	due 30 days after end of each calendar year starting 01/25/1995. The report shall contain the information identified in paragraph 63.347(g)(3). The permittee shall annually prepare and retain on-site a summary report to document the ongoing compliance status of the source except when: the Administrator determines that the summary report shall be completed more frequently and submitted, or that the annual report shall be submitted instead of being retained on-site, if these measures are necessary to accurately assess the compliance status of the source.	GP001
Compliance Status Report	due 30 days after end of each calendar year starting 01/25/1995. The report shall contain the information identified in paragraph 63.347(g)(3). The permittee shall annually prepare and retain on-site a summary report to document the ongoing compliance status of the source except when: the Administrator determines that the summary report shall be completed more frequently and submitted, or that the annual report shall be submitted instead of being retained on-site, if these measures are necessary to accurately assess the compliance status of the source. The report shall include the information identified in 40 CFR 63.347(g)(3) and made available to the Administrator upon request.	EU008

APPENDIX A

Insignificant Activities and General Applicable Requirements

Facility Name: Hard Chrome Inc.

Permit Number: 05300247-002

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R.	Rule Description of the Activity	General Applicable Requirement
7007.1300 subp. 3(B)(1)	Infrared Electric Ovens. <i>The facility has an electric oven for plated parts</i>	Minn. R. 7011.0105 (opacity)
7007.1300 subp. 3(B)(2)	Fuel burning equipment with a total facility combined capacity of less than or equal to 2 MMBtu/hr. <i>The facility has six space heaters and one sludge dryer fueled by natural gas and propane. The sum of the maximum rated inputs for the units is 2 MMBtu/hr.</i>	Minn. R. 7011.0510 (PM and opacity)
7007.1300 subp. 3(H)(3)	Brazing, soldering, or welding equipment.	Minn. R. 7011.0715 (PM and opacity)
7007.1300 subp. 3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: 1) 2tpy of carbon monoxide and 2) 1tpy of each nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone. <i>The facility has a number of process tanks from their plating lines that qualify under this subpart as well as a HCl storage tank.</i>	Minn. R. 7011.0715 (PM and opacity)

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 05300247-002

This technical support document is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp.1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 3471)
Hard Chrome Inc. 2631 2nd St NE Minneapolis Hennepin County	2631 2nd St NE Minneapolis Hennepin County
Contact: Mr. Bob Kantor Phone: 612-788-9451	

1.2. Facility Description

Hard Chrome Inc. is a “job shop” plating facility. The facility electroplates chrome, as well as zinc, nickel, and copper. The facility has a hard chrome line, an electroless nickel line, a decorative chrome/nickel line, two zinc lines, a zinc barrel line, and an irridite line. Each line consists of a series of open surface tanks. Facility emission units/source include three boilers, three makeup air units, two hard chrome tanks, one decorative chrome tank, wipe-cleaning, as well as a number of plating process tanks. The facility also has several emissions sources that qualify as insignificant activities under Minn. R. 7007.1300 including six space heaters, electric ovens, brazing, soldering, and welding equipment, and a sludge dryer with a venturi scrubber. All insignificant activities are listed in Appendix A of the permit.

The main pollutants emitted at this facility are particulate matter (PM), particulate matter less than 10 microns (PM₁₀), and fine particulate matter (PM_{2.5}) and hazardous air pollutants (HAPs) including chromium compounds, hydrochloric acid, nickel compounds, and cyanide compounds.

This facility utilizes a 4-stage composite mesh pad mist elimination system on its hard chrome plating tanks and incorporates a chemical fume suppressant containing a wetting agent into its decorative chrome tank to meet the requirements of the Subpart N, Chrome Electroplating NESHAP. Two single stage mist eliminators are installed off each hard chrome electroplating tank prior to the 4-stage composite mesh pad mist eliminator. The single stage mist eliminators

are not listed in the permit because they are not used to comply with any applicable requirements, but only used to decrease corrosion in the piping. There is no pollution control equipment on the remaining plating lines.

1.3 Reissuance as a State Permit

Hard Chrome Inc. is being issued a nonexpiring state permit. Since the issuance of the facility's part 70 operating permit, the Chrome Electroplating NESHAP was revised. 40 CFR § 63.340(e) allows facilities that were previously subject to the requirement to obtain a federal operating permit only because they were classified as an area source subject to the Chrome Electroplating NESHAP to now be exempt from the obligation to obtain a federal operating permit. Hard Chrome Inc. is not subject to EPA's Once in Always in policy for major sources of HAPs because their PTE for single and combined HAP has always been below the major source thresholds. Hard Chrome Inc. will no longer have to apply for reissuance of their operating permit. However, if any modifications or other changes are proposed that would make the facility subject to the requirement to obtain a part 70 permit, the facility must obtain the permit before beginning construction or making any other changes.

1.4 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit

No amendments were issued for the facility since the issuance of the last total facility permit. After the submittal of their total facility permit reissuance application, the facility submitted a minor amendment to increase the rectifier capacity on one of their chrome electroplating tanks and to install an irridente line. The amendment is rolled into the total facility permit.

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary

Pollutant	Combustion Emissions (tpy)	Chrome Plating Tank Emissions (tpy)	Other Plating Process Tanks (tpy)	Misc. (tpy)	Total Emissions (tpy)
CO	9.15	--	--	--	9.15
NOx	22.6	--	0.64	--	23.3
PM	0.83	6.82×10^{-3}	8.10	--	8.94
PM ₁₀	0.83	6.82×10^{-3}	8.10	--	8.94
PM _{2.5}	0.83	6.82×10^{-3}	8.10	--	8.94
SO ₂	0.12	--	--	--	0.12
VOC	0.71	--	--	2.14	2.85
Tot HAPs	0.2	3.24×10^{-3}	5.04	--	5.24

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD			X
Part 70 Permit Program			X
Part 63 NESHAP	X		

1.6 Changes to the Permit

The following changes have been made to the permit

- Permit is now a nonexpiring state operating permit, the requirement to apply for reissuance was deleted.
- Permit has been updated to reflect current MPCA templates and standard citation formatting
- Completed requirements and the requirements for equipment that has been removed have been deleted
- Data has been updated for new units installed and units removed since the last permit was issued
- Some requirements have been reordered to help with clarity (i.e., similar requirements are grouped)
- Emission rates were updated based on changes in calculation procedures. See Section 3.3 for calculation methods
- Plating process tanks with non-negligible emissions were given emission unit numbers. The tanks are subject to particulate and opacity limits, but no additional monitoring is required
- EU 009 that incorporated all HCl tanks was removed, and each HCl tank is listed individually as an emission unit
- Operating requirements and limits for the composite mesh pad mist eliminator were moved from the Hard Chrome Plating Tanks group level (GP 001) to the control equipment level (CE 001)
- Requirements of 40 CFR 63.347(g) were removed because they apply to sources major for Part 70
- Industrial Process Equipment Rule limits on total particulate matter and opacity were added to the decorative chrome plating tank
- Monitoring, washdown, inspection, corrective action and alternative pressure drop requirements were added to the mist eliminator as required by the NESHAP.
- The sludge dryer was moved to the insignificant activities list, as it qualifies under Minn. R. 7007.1300 subp. 3(B)(2).
- The air make-up units were put into the permit because they do not qualify as insignificant activities as listed in the permit application. They are subject to particulate and opacity limits, and the Permittee is required to keep records of the type of fuel used, but no additional monitoring is required.

- The requirement to participate in the National Metal Finishers Strategic Goals program was removed because according to a conversation with an EPA contact on 10/23/2006 the program was a five year program from 1998-2002. Other resources for the metal finishing sector have since replaced this program.
- Part 63 Subpart WWWW NESHAP for area source plating and polishing operations that was finalized on July 1, 2008 was added to the permit. The compliance date for the NESHAP is July 1, 2010.
- PM_{2.5} PTE was added to the MPCA's delta database
- The requirement for keeping an up-to-date list of plating tanks and bath constituents was added.
- The allowable pressure drop range across the composite mesh pad mist eliminator was changed based on the Permittee's most recent performance test and changes to the Subpart N NEHSAP
- Irridite line was added and rectifier capacity of EU 005 was increased based on minor amendment rolled into this permit action
- MEK wipe-cleaning was added as an emission unit

2. Regulatory and/or Statutory Basis

New Source Review

The facility is minor with respect to New Source Review

Part 70 Permit Program

The facility is a minor source under the Part 70 permit program.

New Source Performance Standards (NSPS)

The Permittee has stated that there are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- Subpart N NESHAP: Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks
- Subpart WWWW NESHAP: Area Source Standards for Plating and Polishing Operations

The facility is not a major source of HAPs, but the facility is an affected facility for pt. 63 subpart N NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks for source categories because it has two hard chrome electroplating tanks and one decorative chrome tank. Each tank is considered an affected source under the source category NESHAP. The Subpart N NESHAP applies to both major sources of HAPs as well as area sources. Hard Chrome Inc. complies as an area source, but is still subject to the MACT standards.

The facility is also subject to the subpart WWWW area source standard for Plating and Polishing operations because the facility is an area source plating facility that performs

electroplating (other than chromium electroplating), electroless plating, and chromate conversion. Unlike the Subpart N NESHAP, the Subpart WWWW NESHAP only applies to area sources. Therefore, the NESHAP does not contain MACT standards, but rather Generally Available Control Technology (GACT) or management practices. The compliance date for the Subpart WWWW NESHAP is July 1, 2010. The MPCA has not accepted delegation for this standard, so it does not enforce it. The requirements of the standard are still included in the permit because the standard is an applicable requirement.

Compliance Assurance Monitoring (CAM)

Hard Chrome Inc. is not subject to CAM because the facility does not have a Part 70 permit. Permittees are only required to evaluate the applicability of CAM if they are Part 70 sources.

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.0610 Standards of Performance for Direct Heating Equipment

Table 3. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:
TF (total facility)	Minn. R. 7007.1150	Requirement to obtain a Part 70 permit before constructing or making any modification or other change that would make the stationary source subject to the requirement to obtain a Part 70 permit.
	40 CFR 63 Subp. N	Chrome Plating NESHAP; requirement to comply with the provisions for major sources if the source increases actual or potential emissions of HAPs such that the area source becomes a major source. This requirement is listed at the total facility level in order to streamline the permit because it applies to both hard chrome and decorative chrome tanks. In addition, this requirement relates directly to the preceding requirement, as becoming a major source of HAPs will invoke the requirement to obtain a Part 70 permit.

	<p>Minn. R. 7007.0800 subp. 4 & 5</p> <p>Minn. R. chs.7002, 7007, 7009, 7019, & 7030</p> <p>40 CFR pt 50; Minn. R. 7009.0010-0080</p>	<p>Plating Tank List: The Permittee is required to maintain a list of plating tanks, plating bath constituents, concentration of bath constituents, and bath make-up.</p> <p>Table A contains requirements that apply to all facilities in Minnesota. Reporting requirements are contained in Table B of the permit.</p> <p>Requirements to ensure that emissions do not cause a violation of ambient air quality standards</p>
GP 001 (hard chrome plating tanks EU 004 & EU 005)	<p>40 CFR 63 Subp. N; Minn. R. 7011.7120;</p> <p>Minn. R. 7011.0715</p>	<p>Chrome Plating NESHAP; standards for open surface hard chromium electroplating tanks using composite mesh pad mist eliminators at large hard chrome electroplating facilities</p> <p>Standards of Performance for Post-1969 Industrial Process Equipment</p>
GP 002 (Boilers, EUs 001, 002, 003)	Minn. R. 7011.0510	Standards of Performance for Existing Indirect Heating Equipment; all three boilers constructed in 1973, so they are considered “existing”.
GP 003 (Air Make-up Units EUs 011, 012, 013)	Minn R. 7011.0610	Standards of Performance for Direct Heating Equipment
GPs 004-010 (Plating Line Process Tanks)	Minn. R. 7011.0715	Standards of Performance for Post-1969 industrial Process Equipment

GP 011 (EUs 31-33, 43, 47, 55-63)	40 CFR 63 Subp. WWWWWW	<p>Plating and Polishing NESHAP; standards and management practices for non-cyanide electroplating, and other coating/plating operations.</p> <p>The NESHAP allows for three different compliance options for controlling emissions from non-cyanide electroplating, electroforming, or electropolishing tanks. Because the compliance date of the NESHAP is July 10, 2010, Hard Chrome Inc. has not yet decided which option they will use, so all three options appear in the permit. Since all three compliance options are included in the permit, GP 011 includes a requirement to keep records of what compliance option they are using at any given time. If the Permittee changes compliance options, they shall update the records, and document the date they switched compliance options.</p> <p>Note: Enforcement not delegated to the MPCA for this standard.</p>
EU008 (decorative chrome plating tank)	40 CFR 63 Subp. N; Minn. R. 7011.7120; Minn. R. 7011.0715	<p>Chrome Plating NESHAP; standards for decorative chromium electroplating tanks using a chromic acid bath and using a chemical fume suppressant containing a wetting agent</p> <p>Standards of Performance for Post-1969 Industrial Process Equipment</p>
EU 066 (wipe cleaning)	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment: Because this emission sources is not regulated by any other standard of performance, it is subject to IPER
CE 001 (composite mesh pad mist eliminator)	40 CFR 63 Subp. N; Minn. R. 7011.7120	Chrome Plating NESHAP; standards for composite mesh pad mist eliminators used on hard chrome plating tanks.

3. Technical Information

3.1 Air Toxics Risk Evaluation

The potential emission rates of air toxics as reported in the Hard Chrome Inc. March 2000 permit application and accompanying materials were above the Screening Emission Rates (SERs) for hexavalent chrome and hydrochloric acid. The Permittee was instructed in their 2001 Part 70

permit to conduct any of the iterative screening or remediation techniques from Section 5 of the "Air Emission Permit Writers' Guide to Air Toxic Risk Evaluation" to better characterize hazardous air pollutant emissions and risk. This document appears in Attachment 2 to this TSD.

The Permittee conducted Screen 3 modeling and submitted a report to the MPCA in November of 2005. The analysis used short term emissions that the MPCA believed were not representative of the facility's actual short term emissions. Additionally, the controlled emission factor for chromium emissions that was used was incorrect for the type of control equipment employed at the facility.

The Permittee and the MPCA redid the analysis correcting these errors and using the MPCA's Risk Assessment Screening Spreadsheet (RASS) rather than the SERs. The RASS was used rather than the SERs because the use of SERs is no longer consistent with the MPCA's air toxics review policy. The RASS uses a more current dispersion model and updated health benchmarks.

Section 5 of the "Air Emission Permit Writers' Guide to Air Toxic Risk Evaluation" allows for the use of actual emissions in the screening. All emissions used in the RASS represent conservative estimates of actual emissions. Conservative estimates of actual emissions were assessed because of mitigating factors that would make it very difficult for Hard Chrome Inc. to emit pollutants from its emission units that would even approach their PTE. Some of these factors are listed below:

- Based on manufacturer recommendations, rectifier capacities rarely exceed 75% amperage capacity
- During the winter months the building is kept under negative pressure
- The mist eliminator control efficiency does not account for the two additional 1-stage mist eliminator pads at the exhaust vent entrance.
- Hard Chrome Inc. doesn't run more than 2 8-hour shifts a day, and typically operates 1 8-hour shift a day.
- Electroless nickel tanks use recirculation pumps, no air agitation is applied, so the gassing rate is very low.
- Hard Chrome Inc. only operates the main boiler. The other two boilers are back-up boilers that would likely be run simultaneously is the main boiler was down.
- Hard Chrome Inc. only operates two air make-up units at a time

Additionally, the emission rate inputs in the RASS are conservative because:

- Plating nitric acid emissions are double counted as both nitric acid and NO_x in the RASS
- Plating emissions are double counted as both PM/PM₁₀/PM_{2.5} and HAP in the RASS
- Combustion emissions were calculated for 8760 hr/yr

The total screening hazard indices computed for Hard Chrome Inc. are below all risk guidelines. It should also be noted that the default dispersion factors were used for 2 of the facility's 5 stacks. Therefore, it is expected that the results are much more conservative than if site-specific

dispersion factors were used for all stacks. The results of the analysis are summarized in Table 4.

Table 4: Air Toxics Screen Results					
Total Inhalation Screening Hazard Indices and Cancer Risks				Total Multipathway Screening Hazard Indices and Cancer Risks	
Acute	Subchronic Noncancer	Chronic Noncancer	Cancer	Resident Noncancer	Resident Cancer
1	0.02	0.3	5E-06	0.3	6E-06

Risk driver pollutants are reported in the two tables below. Risk driver pollutants are those that exceed a 1E-6 cancer risk or a 0.1 hazard quotient. The hazard quotient for nitrogen dioxide is close to the risk guideline. The two highest source contributors to the hazard quotient for nitrogen dioxide are the boilers and the space heaters. Again, these emission units used default dispersion factors, so their impact is greatly overestimated. Additionally, none of these sources are active 8760 hr/yr, which is the assumption upon which this hazard index was based. The space heaters are insignificant activities and are used intermittently; the boiler is only operated in the winter months.

Table 5: Inhalation Exposure Pathway (used DISPERSE data)

Chemical	HQ/cancer risk	Exposure Duration
Nickel compounds	0.1 3E-6	NonCancer Cancer
Nitrogen dioxide	1	Inhalation/Acute/Noncancer

Table 6: Total (Indirect Exposure Pathway summed with Inhalation Exposure Pathway)

Chemical	HQ/cancer risk	Exposure
Chromic Acid (VI) Mists	2E-6	Resident/Cancer
Nickel compounds	0.1 3E-6	Resident/Noncancer

Based on the results of this analysis, the MPCA found no risks of concern. The summary page of the RASS spreadsheet can be found in Attachment 5 to this TSD.

3.2 Control Equipment

Pressure Drop

EPA has revised the subpart N NESHAP requirement for establishing the operating limit for any source controlled with a composite mesh pad (CMP) system. The NESHAP allows the owner or operator of an affected source to operate a CMP within a pressure drop range of ± 2 inches of water column of the pressure drop value established during a performance test. The rule previously allowed a range of ± 1 inch of water column. The facility submitted a major amendment to change the pressure drop range from 4-6 inches of water to 3-7 inches of water. However, the revision to the NESHAP is in the requirement for *establishing* an operating limit. So, in order to establish a new site-specific parameter, the facility was required to conduct a performance test. A performance test was conducted on 08/12/2009 to establish a new compliant pressure drop range. The performance test indicated a range of 1.5 in. wc \pm 2 in. wc. Because a range of -0.5 to 3.5 is impractical the range is adjusted to 0.5 to 3.5. The new pressure drop range is incorporated into this permit. A summary of results from the performance test appear in Attachment 6.

3.3 Calculations of Potential to Emit

Table 1 of Section 1.5 summarizes the facility's PTE, while Attachment 3 to this TSD contains the PTE calculations provided by the Permittee and Attachment 4 contains the MPCA's calculations spreadsheets adopted from the Permittee's calculations.

The Permittee's calculations include a derivation for the plating tank emission rates as well as the emission calculations for the remaining emission units. In Attachment 4 the MPCA used the Permittee's plating tank PTE, but rather than adding a safety factor of 2x to the tpy PTE, the MPCA calculations add a safety factor of 1.3x to both the lb/hr and tpy PTE and double count HAP emissions as both HAP and PM/PM₁₀/PM_{2.5}. This method of calculating PTE is based on the guidance of MPCA's Small Business Assistance Program's air emissions spreadsheet for electroplating <http://www.pca.state.mn.us/programs/sbeap-resources.html>. Nickel emissions from the electroless nickel plating line were calculated using results from USEPA study *Testing Nickel Emissions from Metal Finishing Operations*. It should also be noted that in Attachment 3 the Permittee included combustion emissions from insignificant activities in the total facility PTE. Insignificant activity emissions were omitted from the calculation of total facility PTE in the MPCA's spreadsheet. Finally, Attachment 4 contains quantitative justification as to why emission units and insignificant activities will not violate applicable rule limits.

Direct and Indirect Heating Equipment:

Emissions from all direct and indirect heating equipment are calculated using emission factors provided in AP-42 for natural gas and propane combustion. PTE for these units reflect the worst case scenario.

Hard Chrome and Decorative Chrome Plating Tanks:

Both uncontrolled and controlled PTE for Hard chrome plating tank and decorative chrome plating tank emissions were also calculated using emission factors from AP-42. The emission factor for hard chromium electroplating with composite mesh pad mist eliminator was used to calculate controlled emissions from the hard chrome tanks. The emission factor for decorative chromium electroplating with fume suppressant was used to calculate the controlled emissions from the decorative chrome tank. Note that two single stage composite mesh pad mist eliminators are installed prior to the duct work leading to the 4-stage composite mesh pad mist eliminator. The controlled PTE does not take credit for these single stage mist eliminators; they are used to reduce corrosion in the piping, so they are not included in the permit.

Other Plating Process Tanks:

Emissions from process tanks associated with the hard chrome and decorative chrome plating operations as well as the electroless nickel line, nickel line, two zinc lines, zinc barrel line, and irridite line were calculated using the gassing rate method for open surface tanks. For each tank a gassing rate and corresponding percent loss of makeup are assigned to the tank based on the specific process and solution. If no gassing rate is documented for that process, it is assumed that 100% of the make-up is lost. Makeup is assumed to be the amount of solution purchased for each tank in 2007. All makeup lost is considered emitted. Other assumptions used to make these calculations are documented in Attachment 3.

As stated above, the MPCA's calculations add a safety factor of 1.3x to the lb/hr and tpy PTE, and as an additional safety factor, the MPCA calculations double count any HAP emissions from the plating tanks as particulate emissions.

Fine Particulate Matter

In all cases, emissions of fine particulate were assumed to be the same as PM/PM₁₀. Note that the particulate emissions from Hard Chrome Inc. do not approach any permitting thresholds (neither Part 70 nor NSR), so the PM_{2.5} emissions values are not used for determining what type of permit Hard Chrome Inc. requires.

The main sources of particulate matter at the facility are the plating tanks and combustion sources. AP-42 emission factors for particulate emissions from chromium electroplating include filterable and condensable PM; however, the document states that the condensable PM from these sources are likely to be negligible. On the other hand, the control efficiencies for PM_{2.5} are likely lower than for PM₁₀/PM. Given that the PM_{2.5} emissions from the plating tanks are likely small compared to the PM/PM₁₀ emissions, using PM/PM₁₀ as a surrogate for PM_{2.5} is a conservative assumption (regardless of the control efficiency for PM_{2.5}). This reasoning is also

being applied to the other types of plating tanks. Until $PM_{2.5}$ emissions factors and control efficiencies are better documented for these types of operations, the $PM_{2.5}$ emissions are assumed to be the same as the PM/PM_{10} emissions.

AP-42 contains emission factors for filterable and condensable PM from natural gas combustion. According to AP-42 all particulate matter (filterable and condensable) from natural gas combustion has been estimated to be less than 1 micrometer. Therefore it is reasonable that the emission factors presented in AP-42 can be used to estimate PM, PM_{10} , and $PM_{2.5}$ emissions.

3.4 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 7 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 7. Periodic Monitoring

Emission Unit or Group	Emission Limit (basis)	Additional Monitoring	Discussion
TF	List of all plating tanks including the bath constituents, concs of bath constituents, and bath make-up	Monthly records	<p>The Permittee shall maintain an updated list of all tanks, their bath constituents, and the make-up added to the tanks. Because of the nature of a job shop plating facility, it is expected that the bath compositions will be altered and tweaked based on the needs of the customers. These small adjustments do not need to be tracked. However, if the Permittee switches out a tank, or adds a new bath constituent to the tank, etc, this should be updated on the list. Any of these changes would generally result in a negligible emissions change and therefore are considered an insignificant modification; however, this recordkeeping requirement is a means to track these changes as required by Minn. R. 7007.1250, subp. 3.</p> <p>It should also be noted that this information is needed for emissions inventory. The emission factors in the MPCA's database have been updated for the plating lines. The factors are now based on the gassing rate and the concentration of PM/PM₁₀/PM_{2.5} emitting chemicals in the baths. The factors are in terms of lb PM/PM₁₀/PM_{2.5} per gallon (or lb) makeup. In the emissions inventory report the Permittee shall provide the amount of make-up added for each tank in order to calculate actual emissions.</p>
GP 001 and EU 008 (hard chrome plating tanks and decorative chrome plating tank)	<p>PM/PM₁₀: ≤ 0.3 gr/dscf exhaust gas, applies to each tank separately</p> <p>Opacity: $\leq 20\%$</p> <p>(Minn. R. 7011.0715)</p>	none	NESHAP Chromium compound emission limits ensure that the applicable requirement is met. NESHAP requirements are considered adequate monitoring.
GP 001 and EU 008 (NESHAP sources: hard chrome plating	Chromium Compounds: ≤ 0.015 mg/dscf of total chromium exhaust, applies to each tank	none	NESHAP requirements are considered adequate.

Emission Unit or Group	Emission Limit (basis)	Additional Monitoring	Discussion
tank and decorative chrome plating tank)	separately (pt 63 subp. N)		
GP 002 (Boilers)	PM: ≤ 0.4 lb/MMBtu Opacity: $\leq 20\%$ (Minn. R. 7011.0515)	none	All units use either natural gas or propane; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas or propane. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition. Design based PTE for each unit, using AP-42, is .0078 lb/MMBtu or below compared to the rule limit of 0.4 lb/MMBtu.
GP 003 (Air Make-up Units)	PM: ≤ 0.3 gr/dscf Opacity: $\leq 20\%$ (Minn. R. 7011.0610)	none	All units use either natural gas or propane; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas or propane. Since this is a permit condition, the semi-annual deviations report will document any deviations from this condition.
GPs 004-010 (Plating Line Process Tanks)	PM/PM ₁₀ : ≤ 0.3 gr/dscf exhaust gas, applies to each tank separately Opacity: $\leq 20\%$ (Minn. R. 7011.0715)	none	Based on the PTE of these units it is highly unlikely that they would violate the applicable requirements. (See analysis in Attachment 4)
EU 066 (wipe cleaning)	PM/PM ₁₀ : ≤ 0.3 gr/dscf exhaust gas, applies to each tank separately Opacity: $\leq 20\%$ (Minn. R. 7011.0715)	none	The emissions from the wipe cleaning are VOCs, the process does not generate particulate matter; therefore it is highly unlikely that the process would violate the applicable requirements.
CE 001 (Composite Mesh Pad Mist Eliminator)	Pressure drop: 0.5 in H ₂ O $\leq \Delta P \leq 3.5$ in H ₂ O (pt 63 subp N)	none	NESHAP requirements are considered adequate.

3.5 Insignificant Activities

Hard Chrome Inc. has several operations which are classified as insignificant activities. These operations are listed in Appendix A to the permit and in Table 8 below. The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this facility are only subject to general applicable requirements. The following table documents the justification for why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 4 of this TSD for PTE information for the insignificant activities, including an evaluation of their PTE against applicable rule limits.

Table 8. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Infrared electric ovens (Minn. R. 7007.1300 subp.3(B)(1))	Opacity \leq 20% (Minn. R. 7011.0105)	The facility has an electric oven for plated parts. These units are not likely to have any emissions of particulate matter at this site. It is highly unlikely that they could violate the applicable requirement.
Fuel burning equipment with a capacity less than 500,000 Btu/hour, etc. (Minn. R. 7007.1300 subp. 3(B)(2))	PM \leq 0.4 lb/MMBtu, Opacity \leq 20% (Minn. R. 7011.0510)	The facility has six space heaters fueled by natural gas and propane. Each unit has a capacity of \leq 500,000 Btu/hr. The facility has a sludge dryer with a capacity of 0.2 MMBtu/hr that is used to dry sludge from its waste water treatment before shipping it offsite. The combined capacity of the space heaters and sludge dryer is 2 MMBtu/hr. For these units, based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirements.
Brazing, soldering or welding equipment (Minn. R. 7007.1300 subp. 3(H)(3))	PM, variable depending on airflow Opacity \leq 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible.

Insignificant Activity	General Applicable Emission limit	Discussion
<p>Individual units at a stationary source, each of which have a potential emit the following pollutants in amounts less than:</p> <ol style="list-style-type: none"> 1. 4000 lbs/yr CO; and 2. 2000 lbs/yr each of NO_x, SO₂, PM, PM₁₀, VOCs (including HAP VOCs), and O₃ <p>(Minn. R. 7007.1300 subp. 3(I))</p>	<p>PM, variable depending on airflow Opacity ≤ 20% (with exceptions) (Minn. R. 7011.610)</p>	<p>The facility has an HCl storage tank that qualifies under this subpart as well as plating process tanks that are not listed as emissions units are considered insignificant activities under this subpart. The gassing rate calculation method classifies emissions from these tanks as “negligible.” These tanks are labeled in Attachment 3 spreadsheets as having “negligible emissions.” “Negligible emissions” means that less than 1% of the tank makeup is lost, and therefore it is very unlikely that emissions from these tanks would violate any of the applicable requirements.</p>

3.6 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. The permit deviates from the Delta guidance in the use of appendices. The appendices are fully enforceable parts of the permit; however, requirements that should be tracked (e.g. limits, submittals, etc.) should be in Table A or B (appendices are word processing sections and are not part of the tracking system). Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents, staff must generate these.

One area where the permit deviates from Delta Guidance is in the documentation of emission from combustion sources. Emissions of criteria pollutants for the air make-up units and boilers are listed at the emission unit level; however, HAP emissions are listed at the group level.

Although all plating, pretreatment, and finishing tanks (with the exception of hard chrome and decorative chrome plating tanks) are subject to the same requirements, these plating tanks are divided into a number of groups based on the plating line. This grouping scheme is used to simplify emission calculations as well as keep the plating lines broken into categories rather than having all tanks in one large group.

3.7 Comments Received

Public Comment Period: 12/17/2009 - 01/15/2010

EPA Review Period: 12/16/2009 – 01/15/2010

During the public comment period the MPCA received one comment via email. The commenter requested a public meeting. After further information was provided to the commenter regarding the facility and this permit action, the commenter rescinded their request for a public meeting.

No changes were made to the permit as a result of the comment. Attachment 7 to the TSD contains a summary of the comment and the MPCA response.

4. Conclusion

Based on the information provided by Hard Chrome Inc, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 05300247-002 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Kelsey Suddard (permit writer/engineer)
 Kristie Elickson (risk assessor)
 Shanda Fisher (stack testing)
 Brent Rohne (enforcement)
 Toni Volkmeier (peer reviewer)

AQ File No. 1687

Attachments: 1. CD-01 Forms
 2. Section 5 of Air Emission Permit Writers' Guide to Air Toxic Risk Evaluation
 3. Permittee's PTE Calculations
 4. MPCA PTE Calculations
 5. Risk Assessment Screening Spreadsheet Results Summary
 6. Performance Test Results Summary
 7. Summary of Public Comment and MPCA Response