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INTEL CORPORATION
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CHANDLER, AZ 85226-3601

The purpose of the letter is to inform you that the application for a permit revision has been approved and will be incorporated into your Air Quality Permit. The applicable permit conditions are enclosed with this letter.

If you need assistance with the permit, please contact the Business Assistance Coordinator office at 602-506-5102 or contact the undersigned at 602-506-7248. Email communications may be sent to AQPermits@maricopa.gov.

MARICOPA COUNTY AIR QUALITY DEPARTMENT

Permitting Division

301 W. Jefferson St., Suite 410, Phoenix, Arizona 85003

Phone: 602-506-6010

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AIR QUALITY PERMIT TO OPERATE AND/OR CONSTRUCT

(As required by Title 49, Chapter 3, Article 2, Section 49-480, Arizona Revised Statutes)

ISSUED TO

**Intel Corporation Chandler Campus
5000 W Chandler Blvd.
Chandler, AZ 85226-3601**

This air quality permit to operate and/or construct does not relieve the applicant of the responsibility of meeting all air pollution regulations.

THE PERMITTEE IS SUBJECT TO THE SPECIFIC AND GENERAL CONDITIONS IDENTIFIED IN THIS PERMIT.

FACILITY NUMBER: F000702

LEGACY PERMIT NUMBER: 970053

PERMIT NUMBER: P0009282

REVISION DATE: 12/07/2022

EXPIRATION DATE: 03/31/2024

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Any cited regulatory paragraphs or section numbers refer to the version of the rules and regulations that were in effect on the first date of public notice of the applicable permit condition unless specified otherwise. However, in the event the rules and regulations are amended during the term of this Permit, the amended rules and regulations shall apply to this Permit. Whenever the term, Control Officer, is used in this permit it shall be interpreted to mean, Control Officer or designated representative. Where the term "Rule" appears, it shall be construed to mean "Maricopa County Air Pollution Control Regulations" unless otherwise noted. Where the term "SIP Rule" appears, it shall be construed to mean "Maricopa County Air Pollution Control Regulations approved by the U.S. Environmental Protection Agency into the State Implementation Plan."

SPECIFIC CONDITIONS

1. Allowable Emissions:

- a. The Permittee shall not allow facility-wide emissions from operations into the atmosphere in excess of any of the following:

	Twelve Month Rolling Total Emission Limits
Volatile Organic Compounds (VOC)	180,000 Pounds
Nitrogen Oxides (NO _x)	119,840 Pounds
Carbon Monoxide (CO)	114,900 Pounds
Particulate Matter <10 Micron Diameter (PM ₁₀)	26,600 Pounds
Particulate Matter <2.5 Micron Diameter (PM _{2.5})	22,300 Pounds
Sulfur Oxides (SO _x)	1,760 Pounds
Total Hazardous Air Pollutants (HAPs)	21,500 Pounds
Any Single Hazardous Air Pollutant (HAP)	14,600 Pounds

- b. The Permittee shall limit VOC emissions from semi-conductor manufacturing operations in the CH1 and CH4 buildings to no more than 70,000 lbs per 12 consecutive-month period.
- c. The 12-month rolling emissions for the following categories shall be calculated monthly within 45 days following the end of each calendar month by summing the emissions over the most recent 12 calendar months. The Permittee shall keep this emission record on-site for inspection or submittal upon request:
- Facility-wide emissions.
 - VOC emissions from semi-conductor manufacturing operations in the CH1 and CH4 buildings.

[SIP Rule 241 §§ 304, 305, 308]

2. Emission Calculation Methods:

- a. Unless otherwise specified in this permit condition, evaporative and aerosol emissions shall be calculated using emission factors derived from tool-based test results using the Fourier Transform Infrared Spectroscopy (FTIR) method or calculated by using mass balance, mass-transfer-based correlations for open liquid surfaces, or methods published by the EPA.
- b. VOC emissions from the CH1, CH4, and CH8 Formic Acid TCK Tool and Formic Acid Reflow (FAR) ovens may assume a VOC control efficiency based on the results of department-approved performance testing. The control efficiency applies to each Formic Acid TCK Tool and FAR oven that is vented to Point of Use (POU) Abatement for which adequate maintenance and calibration (AMC) is demonstrated. The VOC control efficiency shall be based upon the lowest catalyst temperature used during the performance testing. After the installation of a thermal oxidizer in accordance with Permit Condition 6, emissions from operations controlled by that thermal oxidizer shall be calculated using the results of performance test conducted in accordance with Permit Condition 13.

- c. When available, emissions from boilers, generators, and microturbines shall be calculated using manufacturer's data, except as specified in Subsection [d] of this permit condition. In the absence of manufacturer's data, emissions shall be calculated in accordance with EPA factors. SO_x emissions from diesel-fueled boilers and engines shall be calculated using the fuel sulfur-based emission factors from AP-42 Tables 1.3-1 and 3.4-1, respectively, rather than manufacturer's data.
- d. For the Cummins DQLH Tier 4 generators, emissions of NO_x during engine warm-up shall be based on an emission rate of 42.7 lbs/hr, equivalent to Tier 2 emission standards at maximum engine capacity, rather than manufacturer's Tier 4 emissions factor data (16.4 lbs/hr). The warm-up period shall consist of the first 10 minutes of engine operation after each cold start. The NO_x emission factor and time span for the warm-up period may be updated based on engine manufacturer data or performance testing if requested by the Permittee in writing and approved by the Control Officer.
- e. Particulate emissions from each set of cooling towers shall be calculated using the following equations unless the use of different factors is requested by the Permittee in writing and approved by the Control Officer:

$$\text{PM}_{10} \left(\frac{\text{lb}}{\text{mo}} \right) = \text{Water flowrate (gals/mo)} \times \text{TDS (ppm)} \times \left(8.345 \frac{\text{lb}}{\text{gal}} \right) \times (\% \text{ drift}/100) \times \left(0.313 \frac{\text{PM}_{10}}{\text{PM}} \right) \times (10^{-6} \text{ ppm})$$

$$\text{PM}_{2.5} \left(\frac{\text{lb}}{\text{mo}} \right) = \text{PM}_{10} \left(\frac{\text{lb}}{\text{mo}} \right) \times 0.6$$

In lieu of tracking the actual monthly flowrate of water for each set of towers, the Permittee may estimate the monthly flowrate based on the monthly operating time and maximum capacity (gpm) of each set of towers. If this alternative is used, the Permittee must provide documentation showing the maximum capacity for each cooling tower system and track monthly operating hours for each set of towers.

[Rule 338 § 502.3.b][SIP Rule 241]

3. Opacity:

- a. No person shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity for a period aggregating more than 3 minutes in any 60-minute period.
- b. If any non-compliant visible emissions (excluding water vapor) are detected or reported, the Permittee shall determine the cause and/or the source of emissions. The Permittee shall then take immediate corrective action(s) and if necessary, shut down the applicable equipment. If visible emissions (excluding water vapor) exceed the above opacity standards subsequent to implementing corrective action(s), the Permittee shall shut down the applicable equipment and institute repairs or changes necessary to ensure compliance prior to resuming operations.
- c. Compliance with the opacity requirement shall be determined by observations of visible emissions conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203B.

[SIP Rule 300 §§ 301, 501] [Rule 323 § 302] [SIP Rule 323 § 302]

4. Operation and Maintenance (O&M) Plan Requirements:

- a. The Permittee shall maintain, readily available on site at all times, O&M Plans for any emission control system (ECS) for which the Permittee is claiming a reduction in emissions. The Permittee shall revise an O&M Plan upon the request of the Control Officer and whenever substantive changes are made to the equipment or plan, in accordance with department guidelines. The following devices are subject to the O&M Plan:

- i. CH12 Rotary Concentrator Thermal Oxidizer (RCTO, EXVO)
 - ii. CH12 Particulate Filter (EXMD)
 - iii. CH8 Rotary Concentrator Thermal Oxidizer (RCTO, EXVO)
 - iv. CH4 Recuperative Thermal Oxidizer (RTO)
 - v. Any other control device for which the Permittee is claiming a reduction in emissions except for abatement devices in which AMC is being demonstrated in accordance with Permit Condition 5.
- b. The O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance and describe in detail procedures to maintain the approved emission control system. The Permittee shall monitor, operate, and maintain the equipment in accordance with the device's approved O&M Plan. At a minimum the plan shall include:
- i. Thermal Oxidizer: Combustion temperature and pressure drop continuous monitoring records.
 - ii. Particulate Filter (EXMD): Pressure drop continuous monitoring records.
- c. Changes to an existing O&M Plan shall be made by submitting a complete, revised O&M Plan along with a cover letter identifying all changes and the reason for such changes. The Permittee may implement the changes addressed in the revised O&M Plan after the revision is submitted to the Control Officer. Unless disapproved in writing by the Control Officer, the Permittee shall continue to operate in accordance with the revised O&M Plan.
- d. If any control device is found to be operating outside a specified range, the Permittee shall immediately take corrective action to bring the device back into the specified operating range or shut down the device and the associated equipment vented to it.
- e. If a pattern of excursions, as determined by the Control Officer or the Permittee, of operation outside the specified operating range develops, the Permittee shall submit for department approval a Corrective Action Plan to bring the devices back into the specified operating range. The Plan shall be submitted to the Control Officer, Attn: Permitting Manager, within 30 days of the determination of the existence of excursions.

[SIP Rule 241][Rule 330 §§ 304.5, 501][Rule 338 § 303.1, SIP Rule 338 § 303.1]

SEMICONDUCTOR MANUFACTURING

5. Emission Abatement Devices:

The Permittee shall submit an O&M Plan or demonstrate AMC for each control device installed during the term of this permit for which the Permittee is claiming a reduction in emissions, within 45 days of the equipment receiving exhaust from semiconductor process tools. AMC demonstrations shall be prepared in accordance with the department's Permitting Handbook, Section 6 (A Guideline for the Semiconductor Industry). O&M Plans shall be prepared in accordance with Permit Condition 4.

[SIP Rule 241 § 302]

6. VOC Control Requirements:

- a. VOC emissions from the following sources shall be directed to a thermal oxidizer that reduces VOC emissions by at least 95% or has an outlet VOC concentration of less than 10 ppmv as methane. If the inlet VOC concentration exceeds 200 ppmv, emissions must be reduced by at least 97%. If the inlet concentration exceeds 2000 ppmv, VOC emissions must be reduced by at least 98.5%. Compliance with the appropriate standard shall be demonstrated by conducting performance tests on each thermal oxidizer in accordance with Permit Condition 13. Affected tools in the CH4 building may continue to operate using POU devices until the RTO is fully operational. Each POU

shall also have a control efficiency of 95% for VOC.

- i. CH8 and CH12 buildings; and
- ii. Tools using formic acid in the CH4 building, including TCK tools, FAR ovens, and formic acid bulk chemical delivery systems.

[SIP Rule 241 §§ 304.2(a), 306][SIP Rule 200 § 310.2]

- b. For Each piece of equipment for which the Permittee is assuming 100% capture of VOC and/or HAP emissions, the Permittee shall demonstrate that the ventilation/draft rates of such equipment meet the following requirements:

Capture efficiency of an emission control device used to meet the requirements of this section shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with EPA Methods 2, 2A, 2C, or 2D (ventilation/draft rates), or US EPA Test Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f, Appendix M, 40 CFR 51.

Verification that all active hoods and ducts, when measured at any selection of any interior place within them, are at negative pressure relative to adjacent, uncaptured air shall suffice for routine and uncontested demonstration of capture adequacy and this permit condition.

[Rule 338 § 503.3][Locally Enforceable Only]

- c. Compliance with Subsection [a] of this permit condition may be used to demonstrate compliance with Permit Conditions 8 and 9 for operations conducted within the CH8 and CH12 buildings.

[Rule 338 § 302.1, 302.2][SIP Rule 338 § 306]

7. CH12 Panel Trimming and Drilling Controls

Emissions from panel trimming and drilling operations at the CH12 building shall be exhausted to the CH12 EXMD operated and maintained in accordance with an approved O&M Plan. The device shall be assumed to reduce PM₁₀ and PM_{2.5} emissions from controlled operations by 90% if it is maintained in accordance with its O&M Plan unless performance testing is conducted to demonstrate a higher reduction efficiency is achieved in accordance with Rule 270.

[SIP Rule 241]

8. Limitations for Solvent Cleaning Stations:

The Permittee shall not operate a solvent cleaning station that cleans semiconductor devices with solvents containing more than 10% VOC content by weight, excluding wipe cleaning, unless each of the following requirements are satisfied:

- a. Each heated or unheated reservoir, sink, or container that transfers, stores, or holds VOC-containing material shall be provided with a full cover. A cover shall remain closed except while production, sampling, maintenance, or loading or unloading procedures require operator access;
- b. All heated or unheated reservoirs and sinks holding VOC-containing materials with a total VOC vapor-pressure exceeding 33 mmHg at 20° C (68° F) shall have a freeboard ratio greater than or equal to 1.0; and
- c. Solvent flow of VOC-containing materials shall be applied in a continuous unbroken stream and in a manner which shall prevent liquid loss resulting from splashing.

[Rule 338 § 302.1][SIP Rule 338 § 306]

9. Limitations for Cleanup Solvents:

VOC containing solvents used to clean semiconductor manufacturing equipment, excluding wipe cleaning, shall meet one of the following requirements:

- a. The VOC content of the solvent shall not exceed 200 g/l (1.7 lbs/gallon);
- b. The VOC composite partial pressure shall not exceed 33 mm Hg at 20° C (68° F); or

- c. The components being cleaned are totally enclosed during washing, rinsing, and draining such that no greater than 50 ppm (220 mg/m³) of VOC emissions are detected using the method as defined in Rule 338 Section 503.5.

[Rule 338 § 302.2][Locally Enforceable Only]

10. Other Solvent Cleaning Requirements:

The Permittee shall comply with the requirements of Rule 331 for solvent cleaning of equipment or parts that is performed for purposes other than semiconductor manufacturing processes.

[Rule 338 § 403][SIP Rule 338 § 402]

11. VOC Containment and Disposal:

The Permittee shall take all reasonable measures to keep VOCs from leaking or evaporating into the atmosphere including, but not limited to:

- a. All active process equipment in which VOC-containing materials are used shall be operated and maintained in proper working order.

[Rule 338 § 304.1][SIP Rule 338 § 304]

- b. Liquids containing more than 0.2% VOC that leak at a rate of 3 drops per minute or more shall be repaired within 24 hours of detection, or the equipment shall be shut down until replaced or repaired according to the following schedule: Shut down prior to the next line shut down or within 24 hours of detection, whichever comes first.

[Rule 338 § 304.2][Locally Enforceable Only]

- c. All storage of VOC-containing materials subject to evaporation, including the storage of waste solvent and waste solvent residues, shall at all times be in closed containers, except when contents are added or removed.

[SIP Rule 338 § 305]

- d. Solvent-soaked rags used for wipe cleaning shall be stored in closed containers when not in use.

[Rule 330 § 306.1][SIP Rule 338 § 305]

- e. Containers shall be legibly labeled with their contents.

[Rule 338 § 305.2][SIP Rule 338 § 305]

- f. Disposal of waste or surplus VOC-containing materials shall be done in a manner that does not promote VOC evaporation, such as, but not limited to, via sewage treatment works or having the waste hauled off-site in sealed containers.

[Rule 338 § 305.3][Locally Enforceable Only]

12. Waste Solvent Tanks:

The Permittee shall maintain all containers, stationary storage tanks, and equipment associated with the storage and loading of waste solvent to be leak-free, vapor-tight, and in good working order. Compliance with the permit conditions may be demonstrated by remaining in compliance at all times with RCRA 40 CFR 265, Subparts AA, BB, and CC.

[SIP Rule 241]

13. Performance Testing:

- a. Testing Requirements: The Permittee shall conduct performance tests on the following equipment within 60 days after the applicable equipment has achieved the capability to operate at its maximum production rate on a sustained basis. The testing deadline may be extended by the Control Officer for good cause, but in no case shall the testing deadline, including test report submittal, extend beyond 180 days after the permit issuance date or 180 days after the new applicable equipment has achieved the capability to operate at its maximum capacity, whichever occurs last. Subsequent testing is due every 5 years (no later than 62 months) from the date of the most recent test.

Each RCTO and RTO: Inlet VOC and exhaust VOC, CO, NO_x

Corrosive Scrubbers CH8 EXSC and CH12 EXSC: Inlet VOC, NO_x, HCl, HF, and methanol

If the Control Officer waives the performance test requirement due to a temporary suspension of operations in accordance with Rule 270, Section 402.4, the permittee must apply for a permit revision in accordance with Rule 220, Section 405. The permittee must also provide advance notification that the existing performance test requirement may not be met. These submittals must include a detailed description of the circumstances / reasons for the request and must be submitted immediately upon realizing the circumstances that necessitated the revision.

[SIP Rule 200 § 310.1][SIP Rule 241][Rule 270 § 401]

b. Thermal Oxidizer Testing

i. The Permittee shall measure the VOC concentration in the thermal oxidizer inlet and exhaust streams. Testing shall demonstrate compliance with all applicable VOC emission limits of these permit conditions.

ii. The Permittee shall measure the concentrations of NO_x and CO in the thermal oxidizer exhaust stream. Testing shall establish emissions rates in order to demonstrate compliance with the applicable NO_x and CO emission limits of these permit conditions.

[SIP Rule 200 § 310.1][SIP Rule 241]

iii. The Permittee shall record the combustion chamber temperature and combustion chamber set-point temperature during the performance test. These, and any additional operational parameters which could affect abatement performance, shall be identified in the test protocol and recorded during testing. Following the performance test, the thermal oxidizer shall be operated such that the average combustion temperature over each 3-hour block average time period is the same or higher than the average temperature demonstrated during the test.

[Rule 270 § 301.6(c)][Locally Enforceable Only]

c. Corrosive Scrubber Testing

i. The Permittee shall measure the VOC, NO_x, HCl, HF and methanol concentration in the scrubber inlet streams only. Testing shall demonstrate compliance with all applicable emission limits of these permit conditions.

[SIP Rule 200 § 310.1][SIP Rule 241]

d. Test Methods: The Permittee shall use the following test methods, as applicable, unless alternative methods are approved in writing by the Control Officer.

i. Sampling sites and velocity traverse points shall be selected in accordance with EPA Test Method 1 or 1A. The gas volumetric flow rate shall be measured in accordance with EPA Test Method 2, 2A, 2C, 2D, 2F, 2G or 19. The dry molecular weight shall be determined in accordance with EPA Test Method 3, 3A or 3B. The stack gas moisture shall be determined in accordance with EPA Test Method 4. These methods must be performed, as applicable, during each test run.

ii. VOC destruction efficiency testing shall be conducted in accordance with EPA Test Method 25 or 25A. Testing to quantify methanol and exempt compounds, such as methane, shall be conducted in accordance with EPA Test Method 18, Method 320, and ASTM D6348.

[Rule 270 § 301.1][Rule 338 § 504.1][SIP Rule 338 § 503]

iii. NO_x testing shall be conducted in accordance with EPA Test Method 7E. CO testing shall be conducted in accordance with EPA Test Method 10 or ASTM D6348-12.

[Rule 270 § 301.1][Locally Enforceable Only]

- e. Testing Conditions: Performance tests shall be conducted under representative operating conditions and all equipment shall be operated during testing in accordance with its operations manual. The Permittee shall make available to the Control Officer any records necessary to determine appropriate conditions for performance tests. Operations during periods of startup, shutdown, and equipment malfunction shall not constitute representative conditions for performance tests unless otherwise specified in the applicable standard or permit conditions.

[Rule 270 § 301.4][Locally Enforceable Only]

- f. Monitoring Requirements: The Permittee shall record all process and control equipment information that are necessary to document operating conditions during the test and explain why the conditions represent normal operation. Operational parameters shall be monitored and recorded at least once every 30 minutes during each of the required test runs and documented in the test report. The operational parameters monitored shall be capable of indicating that the equipment is operating within the permitted limits, both during and after the performance tests.

i. Thermal Oxidizers: The Permittee shall record all thermal oxidizer temperatures and temperature trends within the thermal oxidizer and exhaust gases during the performance test.

ii. Scrubbers: The Permittee shall record the production rates of equipment vented to the scrubber during the performance test to demonstrate that the test results are indicative of normal plant operation.

[Rule 270 § 301.6(c)][Locally Enforceable Only]

- g. Test Protocol Submittal: The Permittee shall submit a separate test protocol for each performance test to the Control Officer for review and approval at least 30 days prior to each performance test unless otherwise specified in the applicable standard or in this permit. The test protocol shall be prepared in accordance with the most recent version of the department's "Air Quality Performance Test Guidelines for Compliance Determination in Maricopa County." A completed copy of the department's "Test Protocol Submittal Form" shall accompany each test protocol.

[Rule 270 § 403][Locally Enforceable Only]

- h. Notice of Testing: The Permittee shall notify the Control Officer in writing at least two weeks in advance of the actual date and time of each performance test unless otherwise specified in the applicable standard or in this permit so that the Control Officer may have a representative attend.

[Rule 270 § 404.2][Locally Enforceable Only]

- i. Testing Facilities Required: The Permittee shall install any and all sample ports or platforms necessary to conduct the performance tests, provide safe access to any platforms, and provide the necessary utilities for testing equipment.

[Rule 270 § 301.5][SIP Rule 42]

- j. Minimum Testing Requirements: Each performance test shall consist of three separate test runs with each test run being at least one hour in duration unless otherwise specified in the applicable standard or in this permit. The same test methods shall be used simultaneously for both the inlet and outlet measurements, if applicable, or justification for any necessary exceptions shall be provided in the test protocol. Emissions rates, concentrations, grain loadings, and/or efficiencies shall be determined as the arithmetic average of the values determined for each individual test run. Performance tests may only be stopped for good cause, which includes forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of a performance test without good cause after the first test run has commenced shall constitute a failure of the performance test.

i. Oxidizers: There are no additional specific testing requirements for this equipment.

ii. Scrubbers: The sampling time and sample volume shall be at least 120 minutes and 60 dry standard cubic feet (dscf), respectively.

[Rule 270 § 301.6][Locally Enforceable Only]

- k. Test Report Submittal: The Permittee shall complete and submit a separate test report for each performance test to the Control Officer within 45 days after the completion of testing unless otherwise specified in the applicable standard or in this permit. The test report shall be prepared in accordance with the most recent version of the department's "Air Quality Performance Test Guidelines for Compliance Determination in Maricopa County." A completed copy of the department's "Test Report Submittal Form" shall accompany each test report.

[Rule 270 § 405][Locally Enforceable Only]

- l. Compliance with allowable emission limits and standards shall be determined by the performance tests specified in this permit. If test results do not demonstrate compliance with the requirements of these permit conditions, the Permittee shall make the necessary repairs and/or adjustments to the equipment and demonstrate compliance through retesting. In lieu of retesting, the Permittee may be able to submit an application for a permit revision to establish operational limitations or allowable emission limits based on the equipment's actual performance. Neither option will nullify the fact that test results did not demonstrate compliance with the requirements of the permit conditions or nullify any violations that may result from this noncompliance. In addition to compliance demonstrations, test results shall be used for annual emissions inventory purposes if the Permittee is required to complete an emissions inventory survey.

[SIP Rule 200 § 310.1]

- m. Correspondence: All test extension requests, test protocols, test date notifications, and test reports required by this permit shall be submitted to the Control Officer and addressed to the attention of the Performance Test Evaluation Supervisor.

[Rule 270 § 405.3][Locally Enforceable Only]

- n. Authority: The above testing requirements represent the minimum level of testing to monitor for compliance with the emission limits in this permit. Nothing in this section shall prevent the Control Officer from requiring additional performance testing as deemed necessary to ensure permit compliance and protection of the public health and welfare.

[SIP Rule 200 § 310.1][Rule 270 § 103]

14. Optional Compliance Demonstrations:

Optional compliance demonstration methods for the semiconductor industry are included in the department's Permitting Handbook and are incorporated by reference into this Non-Title V Air Quality Permit.

[Rule 270 §§ 104, 402.4][Locally Enforceable Only]

40 CFR 63, SUBPART WWWW: AREA SOURCE STANDARDS FOR PLATING AND POLISHING OPERATIONS

15. Applicability:

This permit section applies to each tank used for non-chromium electroplating, electroforming, electropolishing, electroless plating or other non-electrolytic metal coating operation, which contains either of the following:

- Cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1% by weight (as the metal).
- Manganese in amounts greater than or equal to 1.0% by weight (as the metal).

[40 CFR 63.11505(a)]

16. Standards for Electrolytic Plating without Cyanide:

- a. The Permittee shall capture and exhaust emissions from each affected tank to a composite mesh pad, packed bed scrubber, or mesh pad mist eliminator, according to the following:
 - i. Operate all capture and control devices according to the manufacturer's specifications and operating instructions.
 - ii. 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 63.11507(a)(2)]

- b. The Permittee shall implement the applicable management practices in Permit Condition 18 as practicable.

[40 CFR 63.11507(a)]

17. Standards for Electrolytic Plating with Cyanide:

For plating tanks subject to this permit section that use cyanide in the plating bath and operate at a pH greater than or equal to 12, the Permittee shall:

- a. Maintain the plating bath at a pH greater than or equal to 12.
- b. Measure and record the pH of the electroplating tank that uses cyanide in the plating bath upon start-up. No additional pH measurements are required.
- c. Implement the applicable management practices in Permit Condition 18 as practicable.

[40 CFR 63.11507(d)(1)]

18. Management Practices for Affected Plating Tanks:

The Permittee shall implement the applicable management practices of this permit condition, as practicable. The applicable management practices shall be implemented during all times that the plating tank or process is in operation.

- a. Minimize bath agitation when removing any parts processed in the tank, as practicable except when necessary to meet part quality requirements.
- b. Maximize the draining of bath solution back into the tank, as practicable, by extending drip time when removing parts from the tank; using drain boards (also known as drip shields); or withdrawing parts slowly from the tank, as practicable.
- c. 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 to allow the tank solution to drip back into the tank), as practicable.
- d. Use tank covers, if already owned and available at the facility, whenever practicable.
- e. Minimize or reduce heating of process tanks, as practicable (e.g., when doing so would not interrupt production or adversely affect part quality).
- f. Perform regular repair, maintenance, and preventive maintenance of racks, barrels, and other equipment associated with affected sources, as practicable.
- g. Minimize bath contamination, such as through the prevention or quick recovery of dropped parts, use of distilled/de-ionized water, water filtration, pre-cleaning of parts to be plated, and thorough rinsing of pre-treated parts to be plated, as practicable.
- h. Maintain quality control of chemicals, and chemical and other bath ingredient concentrations in the tanks, as practicable.
- i. Perform general good housekeeping, such as regular sweeping or vacuuming, if needed, and periodic washdowns, as practicable.

- j. Minimize spills and overflow of tanks, as practicable.
- k. Use squeegee rolls in continuous or reel-to-reel plating tanks, as practicable.
- l. Perform regular inspections to identify leaks and other opportunities for pollution prevention.

[40 CFR 63.11507(g)]

NATURAL GAS COMBUSTION UNITS

19. Operational Limitations:

- a. The Permittee shall only use natural gas as fuel for boilers, microturbines, and thermal oxidizers.
- b. The Permittee shall limit the facility-wide combustion of natural gas, excluding natural gas consumed by equipment from the CH8 and CH12 buildings, AERCO BMK-6000 boilers, and microturbines, to no more than 3.57 MM therms per any 12-consecutive month period.
- c. The Permittee shall limit the combustion of natural gas in equipment located in the CH8 and CH12 expansion to no more than 9.47 MM therms per any 12-consecutive month period. This limitation specifically includes the following Equipment ID:
 - i. CH12 Building: Cleaver Brooks Boilers (CH12-BLR115-01, CH12-BLR115-02, CH12-BLR115-03, CH12-BLR115-04, CH12-BLR115-05, CH12-BLR115-06, CH12-BLR115-07, CH12-BLR115-08)
 - ii. CH12 Building: CH12-BLR115-09
 - iii. CH8 Expansion: AERCO BMK6000: (CH8-BLR115-06, CH8-BLR115-07, CH8-BLR115-08, CH8-BLR115-09, CH8-BLR115-10)
- d. Good Combustion Practices: The Permittee shall operate and maintain the microturbines in accordance with the manufacturer's written instructions.

[SIP Rule 241 §§ 302, 304, 305]

20. Limitations – NO_x:

For combustion units with a rated heat input greater than 10 MMBtu/hr, the Permittee shall comply with the following:

- a. Baseline Monitoring and Annual Tuning:
 - i. Establish and record the initial optimal baseline concentrations for NO_x and CO within 90 days of the first usage of the combustion unit utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. The initial design burner specifications or manufacture's recommendations shall be kept onsite and available to the Control Officer upon request.
 - ii. Tune the combustion unit annually in accordance with the manufacturer's recommended procedure. The manufacturer's procedures shall be kept onsite and available to the Control Officer upon request. If the manufacturer's recommended tuning procedure is not available, the Permittee shall tune the combustion unit annually by the following, at a minimum, if the combustion unit is so equipped, and if such procedures are appropriate to the type of combustion unit:
 - 1) Inspect the burner system and clean and replace any components of the burner as necessary to minimize emissions of NO_x and CO; and
 - 2) Inspect the burner chamber for areas of impingement and remove if necessary; and
 - 3) Inspect the flame pattern and make adjustments as necessary to optimize the flame pattern; and

- 4) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly; and
- 5) Using a portable monitor, measure the NO_x and the CO concentration of the effluent stream after each adjustment is made to ensure optimal baseline concentrations are maintained.

For low emission burner systems that do not provide accessibility for combustion chamber inspection, burner inspection, or inspection of the flame pattern, the Permittee shall provide documentation from the manufacturer and follow manufacturer's recommended procedure.

[Rule 323 § 304.1] [SIP Rule 323 § 304.1a]

b. Emission Standards:

The Cleaver Brooks CBLE-4B boilers shall be guaranteed by the manufacturer to meet a 9 ppm NO_x standard.

[SIP Rule 241 §§ 302, 304, 305]

21. New Source Performance Standards:

Boilers for which construction, modification, or reconstruction is commenced after June 9, 1989 and have a maximum design heat input capacity greater than or equal to 10 MMBtu/hr, but less than 100 MMBtu/hr are subject to 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units).

[40 CFR 60.40c(a)]

STATIONARY EMERGENCY ENGINES

22. Operational Limitations:

- a. The Permittee shall limit the operation of the emergency engines to no more than 100 hours each per calendar year for the purposes of maintenance checks and readiness testing.

[Rule 324 § 104.5][SIP Rule 324 § 104.5] [40 CFR 60.4211(f)(2), 63.6640(f)(2)]

- b. The Permittee shall limit the total hours of operation of the emergency engines to no more than 500 hours each per any twelve consecutive months including the hours listed in Subsection [a] of this permit condition.

[Rule 324 § 206.2][SIP Rule 324 § 205]

- c. The Permittee shall limit the total combined operating hours of engines CH8-EG-04, CH8-EG-05, CH8-EG-06, CH12-EG-01, CH12-EG-02, CH12-EG-03, CH12-EG-04, CH12-EG-05, CH12-EG-06, CH12-EG-07, CH12-EG-08, CH12-EG-09, and CH12-EG-10 (4,060 HP Cummins QSK78-G4, Tier 4) to no more than 3,250 hours per 12 consecutive month period.

- d. The Permittee shall limit the total combined operating hours of fire pump engines CH12-FP153-01 and CH12-FP153-02 (197 HP, Clark JU6H-UFADN0, Tier 3) to no more than 500 hours per 12 consecutive month period.

[SIP Rule 241 §§ 302, 304, 305]

- e. The Permittee shall limit the fuel usage for the engines to no more than 33,000 gallons per any 12 consecutive month period, excluding usage by generators C8-SG-01 and C8-SG-02 and engines installed in the CH12 and the CH8 expansion. If requested by the Control Officer, compliance with the fuel usage limit shall be demonstrated by summing the total amount of diesel fuel delivered to the facility for the previous 12 consecutive month period.

[SIP Rule 241 §§ 302, 304, 305]

- f. The emergency engines shall not be used for peak shaving. The emergency engines shall only be used for the following purposes:

- i. For power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails;
- ii. Reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resetting hour meter. Hours of operation during the commissioning period do not count towards the 100 hour per calendar year limit on hours of operation for reliability-related activities though they do count towards the total hourly limits of Subsections [b] through [e] of this permit condition.
- iii. Emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other essential public services which affect the public health and safety;
- iv. Lighting airport runways;
- v. Sewage overflow mitigation and/or prevention;
- vi. As the non-emergency engine when the non-emergency engine has failed, but only for such time as is needed to repair the non-emergency engine. If the non-emergency engine is not repaired and returned to service within 12 months, or if the emergency engine is used as the non-emergency engine for more than 50 hours, whichever occurs first, the emergency engine shall be reclassified as a non-emergency engine; or
- vii. To operate standby emergency water pumps for fire control that activate when sensors detect low water pressure.

[Rule 324 § 104][SIP Rule 324 § 104] [40 CFR §§ 60.4211(f), 63.6640(f)(1) - (2)]

23. Non-Resetting Totalizing Hour Meter:

- a. The Permittee shall install and operate a non-resetting totalizing hour meter for each stationary engine.
- b. If the non-resetting totalizing hour meter is found to be malfunctioning, the Permittee shall:
 - i. Record hours of operation daily until the function of the hour meter is restored; and
 - ii. Restore the function of the hour meter within two weeks. If it is not possible to restore the function of the hour meter within two weeks, the Permittee shall notify the Control Officer in writing and provide a schedule for restoration of the function of the hour meter

[Rule 324 § 306] [SIP Rule 324 § 308] [40 CFR §§ 60.4209, 63.6625(f)]

24. Fuel Requirements:

The Permittee shall not use any fuel that contains more than 0.0015% sulfur by weight, alone or in combination with other fuels. Additional fuel requirements for new engines are specified in Permit Condition 25.b.

[Rule 324 § 301.1][SIP Rule 324 § 301.1][40 CFR 60.4207(b), 1090.305(b)]

25. NSPS Subpart IIII Requirements:

- a. The following engines shall be certified by the manufacturer to meet the specified EPA emission standard and shall comply with all requirements of this permit condition:

Engine Identification	Standard
ID: F6-EG-1, 1005 HP Caterpillar C-27	Tier 2
ID: C3-EG-1, 250 HP Cummins DSGAC-1987183	Tier 3
ID: ND-EG-1 (ADC), 250 HP Cummins DSGAC-593507	Tier 3

Engine Identification	Standard
ID: C8-SG-01, 755 HP Cummins QSX15	Tier 2
ID: C8-SG-02, 755 HP Cummins QSX15	Tier 2
ID: C2-EG-1, 315 HP Caterpillar D200-2, 2015 Model Year	Tier 3
ID: C8-SG-03, 1490 HP Cummins KTTA50-G2, 2018 Model Year	Tier 2
ID: C4-EG-1, 755 HP Cummins QSX15, 2018 Model Year	Tier 2
ID: C7-SG-03, 2206 HP Caterpillar 3512C, 2020 Model Year	Tier 2
ID: CH12-FP153-01, 02; 197 HP, Clark JU6H-UFADN0 Fire Pump	Tier 3

[40 CFR 60.4211]

Engine Identification	Standard
ID: CH8-EG-04, 05, 06; CH12-EG-01, 02, 03, 04, 05, 06, 07, 08, 09, 10; 4060 HP Cummins DQLH	Tier 4

[SIP Rule 241 §§ 302, 304, 305] [40 CFR 60.4211]

b. Additional Fuel Limitation:

The Permittee shall only use diesel fuel that has a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

[40 CFR §§ 60.4207(b), 1090.305(c)]

c. Additional Opacity Standard:

For 2007 model year and later engines, the Permittee shall not allow exhaust opacity to exceed 15% during the lugging mode. This restriction does not apply to engines designated fire pump engines. Opacity levels are to be measured and calculated as set forth in 40 CFR 86, Subpart I.

[40 CFR §§ 60.4205, 60.4202, 1039.105, 1039.501(c)]

d. The Permittee shall operate and maintain each engine according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine.

[Rule 324 § 302][40 CFR 60.4211(a)(1), 60.4206]

e. The Permittee shall only change those engine settings that are permitted by the manufacturer.

[40 CFR 60.4211(a)(2)]

f. The Permittee shall meet the applicable requirements of 40 CFR 1068, including but not limited to the following:

i. Defeat Device: The Permittee shall not equip any engine with a defeat device.

ii. Tampering: The Permittee shall not remove or render inoperative any device or element of design installed on or in an engine in compliance with the regulations, except as allowed under 40 CFR 1068.101(b)(1)

[40 CFR 60.4211(a)(3), 1068.101]

g. If the Permittee modifies or reconstructs a stationary compression ignition internal combustion engine after July 11, 2005, that engine shall comply with all applicable requirements of NSPS IIII.

[40 CFR 60.4200(a)(3)]

26. 40 CFR 63, Subpart ZZZZ Requirements:

The Permittee shall comply with the following for all existing stationary reciprocating internal combustion engines (RICE) for which no construction or reconstruction has commenced since June 12, 2006:

- a. Operate and maintain each engine and associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Control Officer which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR 63.6605(b)]
- b. The Permittee shall maintain each engine in accordance with the manufacturer's written instructions or in accordance with the maintenance schedule provided by the manufacturer's authorized service provider.
[Rule 324 § 302][Locally Enforceable Only]
- c. Comply with the following maintenance schedule for each engine:
- i. Change oil and filter or perform an Oil Analysis Program every 500 hours of operation or annually, whichever comes first. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:
- 1) Total Base Number is less than 30% of the Total Base Number of the oil when new;
 - 2) Viscosity of the oil has changed by more than 20% from the viscosity of the oil when new;
 - 3) Percent water content (by volume) is greater than 0.5.
- If none of these limits are exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the Permittee must change the oil before continuing to use the engine. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine
- ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
- iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
[40 CFR 63.6603(a); Table 2d(4)]
- d. If an engine is operating during an emergency and it is not possible to shut down the engine in order to perform the maintenance requirements on the schedule required by this permit condition, or if performing the maintenance operations on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the maintenance operations can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The maintenance operations shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the maintenance operations on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable, in accordance with Permit Condition 29.f.
[40 CFR 63.6603(a); Table 2d]
- e. During periods of startup, the Permittee shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.
[40 CFR 63.6625(h)]

COOLING TOWER OPERATIONS

27. Operating Limitations:

- a. The cooling towers shall be equipped with a drift eliminator. The drift eliminator shall not be manufactured out of wood.
- b. The Permittee shall not allow exhaust from any cooling tower to bypass its drift eliminator.
- c. The Permittee shall limit the total dissolved solids (TDS) concentration of the circulating water of each cooling tower unit to less than 4,000 ppm. The Permittee may calculate this value as a rolling average for the month based on the weekly TDS sampling described below.
- d. The CH8 and CH12 cooling towers shall have a maximum drift rate of no more than 0.0005%. The MSB and EC cooling towers shall have a maximum drift rate of no more than 0.001%. The Permittee shall provide written documentation from the manufacturer affirming these specified efficiencies.
- e. The Permittee shall inspect each cooling tower drift eliminators for proper installation, maintenance, and operation every 6 months. The results of the inspection shall be recorded in a facility log.

[SIP Rule 241]

SITE-WIDE REQUIREMENTS

28. Recordkeeping:

The Permittee shall comply with the requirements set forth in this permit. All records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request. Unless otherwise specified, copies of reports, logs and supporting documentation required by the permit or Control Officer shall be retained for at least five years. Records shall consist of the following information:

[SIP Rule 100 §§ 501, 504]

- a. A current list of VOC-containing materials, make-up solvents, and any other VOC-containing materials used for all operations at the facility, stating the VOC content of each in either pounds per gallon or grams per liter. The vapor pressure limits or VOC content of cleaning solvents shall be documented by a manufacturer's technical data sheet, manufacturer's safety data sheet or actual test results.
[Rule 338 § 502.1][SIP Rule 241]
- b. Monthly usage records for materials containing VOC and/or HAPs.
[Rule 338 § 502.2][SIP Rule 241]
- c. Monthly records of material use and/or production values for each associated tool in which regulated air pollutant emissions calculations are based on material usage and/or production values.
- d. Records of any monitoring and maintenance requirements and key operating parameters as specified in the O&M Plans, AMC Plans and/or manufacturer's specifications and operating instructions required by this permit for any emission control device in which the Permittee is claiming a reduction in emissions.
- e. Documentation that the CH4 POU devices reduce VOC emissions by 95%, in accordance with Permit Condition 6.a
- f. Records to demonstrate compliance with Permit Condition 6.b, specifically that the VOC abatement unit's exhaust distribution systems are continuously monitored to ensure adequate negative pressure is maintained within system set points.
- g. Monthly and 12-month rolling total records of the weight of panel material removed by tools vented to the CH12 EXMD particulate matter abatement units. The amount of material removed can be

calculated based on cut/hole dimensions for the laser cutting machines.

- h. To demonstrate compliance with Permit Condition 19.b, the Permittee shall maintain monthly records of the rolling 12-month total amount of natural gas burned at the facility, excluding the CH8 and CH12 equipment, AERCO BMK-6000 boilers and microturbines.

[SIP Rule 100 § 501][SIP Rule 241]

- i. Plating Operations:

- i. A copy of any Initial Notification and Notification of Compliance Status that were submitted and all documentation supporting those notifications.
- ii. The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards.
- iii. The occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment.
- iv. Records showing that all required maintenance was performed on the air pollution control and monitoring equipment.
- v. The records required to show continuous compliance with each management practice as applicable.
- vi. Records showing the pH of any cyanide containing tanks at start-up.

[SIP Rule 100 § 501][SIP Rule 241]

- j. Natural Gas Combustion Units:

For combustion units that have a heat input greater than or equal to 10 MMBtu/hr but less than or equal to 100 MMBtu/hr, the Permittee shall maintain the following records:

- i. Monthly records of type and amount of fuel used (in therms). A monthly invoice from the fuel supplier may be used to demonstrate compliance with the requirement of this provision.
[SIP Rule 241] [Rule 323 § 501.1] [40 CFR 60.48c(g)]
- ii. Documentation that the Cleaver Brooks CBLE-4D boilers meet a 9 ppm NO_x standard.
- iii. Baseline Monitoring and Annual Tuning Procedure: Date that the procedure was performed on the particular combustion unit in accordance with Permit Condition 20.a and at a minimum: stack gas temperature, flame conditions, nature of the adjustment and results of the nitrogen oxide and carbon monoxide concentrations obtained by using a portable monitor after each adjustment.
[Rule 323 § 501.4][SIP Rule 323 § 501.4]
- iv. A copy of each notification that is submitted to comply with Permit Conditions 29.g and 29.h, and the documentation supporting each notification.

[40 CFR 60.48c(e)]

- k. Stationary Emergency Engine Records:

- i. A list of all stationary engines that includes all of the following information for each stationary engine: combustion type (compression-ignition, or lean-burn spark-ignition, or rich-burn spark-ignition); manufacturer; model designation, rated bhp, serial number, and the location of each engine at the facility. If the equipment list associated with the current permit includes all of the required information for each stationary engine, this requirement may be fulfilled by keeping a complete copy of the current permit, including the equipment list, in a readily accessible location at the facility where the engines are located.

[Rule 324 § 502.1] [SIP Rule 324 § 502.1]

- ii. Monthly rolling twelve-month total of hours of operation, including:
- 1) Monthly and annual hours of operation for reliability related activities such as engine readiness, calibration, or maintenance, or to prevent the occurrence of an unsafe condition during electrical system maintenance; and
 - 2) The number of operating hours for emergency use and an explanation for the emergency use.
- [Rule 324 § 502.2] [SIP Rule 324 § 502.4]
- iii. Total number of cold starts for the Cummins DQLH Tier 4 generator engines per rolling twelve-month period.
- [SIP Rule 100 §501][SIP Rule 241]
- iv. Fuel type and sulfur content of fuel.
- [Rule 324 § 502.4] [SIP Rule 324 § 502.4(b)] [40 CFR 60.4214(b), 63.6655(f)]
- v. Fuel-Sulfur Verification: One of the following documents listing the accurate sulfur content of the fuel based on enforceable test methods as approved by the Administrator to determine the sulfur content:
- 1) Fuel receipts
 - 2) Contract specifications
 - 3) Pipeline meter tickets
 - 4) Fuel supplier information
 - 5) Purchase records; or
 - 6) Test results of the fuel for sulfur content.
- [Rule 324 § 501.5][SIP Rule 324 § 501.3]
- vi. Maintenance records of all stationary engines, including:
- 1) The date when maintenance was performed;
 - 2) The maintenance procedures that were performed and corresponding hours on the hour meter; and
 - 3) One of the following documents, as applicable, which shall be available at all times at the facility where the stationary engine is located:
 - a) The manufacturer's written instructions for operation and maintenance; or
 - b) A written maintenance schedule provided by the manufacturer's authorized service provider.
- [Rule 324 §§ 502.3, 502.5] [40 CFR 63.6655(e), 63.6660]
- 4) For annual maintenance intervals, the Permittee may follow the schedule specified by the Computerized Maintenance Management System (CMMS) utilized by the Permittee, which are 35 days from the annual anniversary.
- [SIP Rule 100 § 501][SIP Rule 241]
- vii. A copy of the manufacturer's data for each engine listed in Permit Condition 25 indicating compliance with the standards in this Permit.
- [SIP Rule 241][40 CFR 60.4211(b)(3)]
1. Cooling Tower Records:
- i. Total monthly flowrate of circulating water within each set of towers (MSB, EC, CH8, CH12),

or the maximum capacity and operating hours for each set of towers.

- ii. If monthly water flowrate for a cooling tower system is estimated based on the operating hours and capacity of the system, in accordance with Permit Condition 2.d, the Permittee shall provide supporting documentation used to calculate the capacity along with records of the monthly operating hours for the system.
- iii. Purchase records for VOC-containing treatment materials used in the cooling towers.
- iv. Written documentation provided by the vendor/manufacturer of the maximum drift loss of each drift eliminator.
- v. Inspection logs of the drift eliminators.
- vi. Total Dissolved Solids Concentration (TDS):
 - 1) On a weekly basis, when the towers are in operation, the Permittee shall measure and record the TDS concentration in the circulating water of each tower. If the towers are not in operation on the scheduled day for sampling, the Permittee shall obtain a sample on the next day the cooling tower is operating.
 - 2) The measured TDS value will be used in the calculation presented in Permit Condition 2.d to determine PM₁₀ and PM_{2.5} emissions from each cooling tower. An average monthly TDS value may be used if multiple readings are taken within a calendar month.

[SIP Rule 100 § 501][SIP Rule 241]

m. Waste Solvent Tanks:

- i. Emissions of VOC from the waste storage tanks.
- ii. Records of the actual vapor pressure of stored liquid or the maximum vapor pressure of any material stored in the tanks.

n. Emissions: The Permittee shall maintain records of the 12-month rolling total emissions for each category required by Permit Condition 1.c. The Permittee shall maintain records of equipment testing data that is used to estimate CH8 and CH12 process emissions and shall make them available to the Control Officer upon request.

[SIP Rule 100 § 501][SIP Rule 241]

29. Reporting:

a. The Permittee shall submit a VOC, NO_x, Total HAP, and Any Single HAP emission report to the Control Officer, Attn: Compliance Manager, every six months. The report shall include detailed calculations to support the figures. The reporting period shall cover the months of January through June and July through December. The report shall include the calendar dates covered by the reporting period and shall be postmarked by the 45th day following the end of the reporting period.

[SIP Rule 100 § 501][SIP Rule 241]

b. Initial Notification for 40 CFR 63, Subpart WWWW:

- i. The Permittee shall submit an Initial Notification when the plating operation becomes subject to this subpart.
- ii. The initial notification shall contain the information specified below:
 - 1) The name and address of the owner or operator;
 - 2) The address (i.e., physical location) of the affected source;
 - 3) An identification of the relevant standard, or other requirement, that is the basis of the notification (40 CFR 63, Subpart WWWW) and the source's compliance date;

- 4) A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and
 - 5) A description of the compliance method for each affected source. [40 CFR 63.11509(a)]
- c. Notification of Compliance Status for 40 CFR 63, Subpart WWWWWW:
- i. The Permittee shall submit a Notification of Compliance Status upon initial startup of the affected source.
 - ii. The Notification of Compliance Status shall contain the information specified below:
 - 1) List of affected sources and the plating and polishing metal HAP used in, or emitted by, those sources.
 - 2) Methods used to comply with the applicable management practices and equipment standards.
 - 3) Description of the capture and emission control systems used to comply with the applicable equipment standards.
 - 4) Statement by the owner or operator of the affected source as to whether the source is in compliance with the applicable standards or other requirements. [40 CFR 63.11509(b)]
- d. Annual Certification of Compliance Report for 40 CFR 63, Subpart WWWWWW:
- i. The Permittee shall prepare an annual certification of compliance report. This report does not need to be submitted unless a deviation from the requirements of this subpart has occurred during the reporting year, in which case, the annual compliance report must be submitted along with the deviation report.
 - ii. Each annual compliance report must be prepared no later than January 31 of the year immediately following the reporting period and kept in a readily accessible location for inspector review. If a deviation has occurred during the year, each annual compliance report must be submitted along with the deviation report and postmarked or delivered no later than January 31 of the year immediately following the reporting period.
 - iii. The Annual Certification of Compliance Report shall contain a statement that the Permittee has implemented the applicable management practices, as practicable. [40 CFR 63.11509(c)]
- e. Deviation Report for 40 CFR 63, Subpart WWWWWW:
If any deviations from the compliance requirements specified in Permit Conditions 16 - 18 occurred during the year, the Permittee shall report the deviations, along with the corrective action taken to the Control Officer. [40 CFR 63.11509(d)]
- f. Deviations from Engine Maintenance Schedule:
The Permittee shall report any failure to perform a maintenance operation on the schedule required by Permit Condition 26.d and the Federal, State, or local law under which the risk was deemed unacceptable. The Report shall be submitted to the Control Officer, Attn: Compliance Manager, within 2 working days after the date on which the maintenance operation was required to be performed. A subsequent report shall be submitted to the Control Officer within 2 working days after the required maintenance operation is performed. [SIP Rule 241] [40 CFR 63.6603(a)]

- g. The Permittee shall submit to the Control Officer, Attn: Permitting Manager, notification of the date of construction, anticipated startup, and actual startup of any new steam generating unit(s) between 10 and 100 MMBtu/hr, as provided in 40 CFR 60.7 and Subsection [29.h] of this permit condition. This notification shall include:
- i. The design heat input capacity of the steam generating unit(s) and identification of fuels to be combusted in the steam generating unit(s).
 - ii. The annual capacity factor at which the Permittee anticipates operating the steam generating unit(s) based on all fuels fired and based on each individual fuel fired.
- [40 CFR 60.48c(a)]
- h. The Permittee shall submit to the Control Officer, Attn: Permitting Manager, notification of the date of construction or reconstruction and actual startup of any new steam generating unit(s) between 10 and 100 MMBtu/hr as follows:
- i. A notification of the date construction or reconstruction of the new steam generating unit(s) is commenced postmarked no later than 30 days after such date.
 - ii. A notification of the actual date of initial startup of new steam generating unit(s) postmarked within 15 days after such date.
- [40 CFR 60.7]
- i. Notifications and reports required by this permit condition shall be submitted through the AQD Online Portal (IMPACT database). If the database is not accessible, the Permittee may use alternative means of submittal (i.e., certified mail, facsimile, email, or hand delivery).

GENERAL CONDITIONS

30. Posting of Permit:

This permit shall be posted in a clearly visible and accessible location on the site where the equipment is installed.

[SIP Rule 200 § 312]

31. Compliance:

- a. The issuance of any permit or permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a permit or permit revision required under the county rules.

[SIP Rule 200 §§ 309, 310.3][SIP Rule 220 § 406.3]

- b. The Permittee shall comply with all conditions of this permit including all applicable requirements of federal laws, Arizona laws, and Maricopa County Air Pollution Control Rules and Regulations now in effect and as amended in the future. Any permit noncompliance is grounds for enforcement action, permit termination or revocation, or for denial of a renewal application. In addition, non-compliance with any federally enforceable requirements constitutes a violation of the Clean Air Act.

[SIP Rule 200 § 310.4][A.A.C. R18-2-306.A.8.a]

- c. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with these permit conditions.

[SIP Rule 241][A.A.C. R18-2-306.A.8.b]

- d. Rights and Privileges: This permit does not convey any property rights or exclusive privilege of any sort.

[SIP Rule 220 § 302.12]

- e. Fees: The Permittee shall pay all fees to the Control Officer in accordance with Rule 280. No permit or permit revision is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.

[SIP Rule 200 § 409][Rule 280 § 302][A.R.S. 49-480(D)][SIP Rule 28]

32. Annual Emission Inventory Report:

Upon request of the Control Officer and as directed by the Control Officer, the Permittee shall complete and shall submit to the Control Officer an annual emissions inventory report. The report is due by April 30 or 90 days after the Control Officer makes the inventory forms available, whichever occurs later. The annual emissions inventory report shall be in the format provided by the Control Officer and shall be submitted through the AQD Online Portal. The Control Officer may require submittal of supplemental emissions inventory information forms for air contaminants under A.R.S. § 49-476.01 and § 49-480.03.

[SIP Rule 100 § 505]

33. Malfunctions, Emergency Upsets, and Excess Emissions:

An affirmative defense of an emergency, excess emission, and/or during startup and shutdown shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence as outlined in Rule 130 for emergencies and Rule 140 for excess emissions.

[Rule 130 §§ 201, 400][Rule 140 §§ 400, 500][SIP Rule 140]

34. Revision / Reopening / Revocation:

The permit may be revised, reopened, revoked, and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[SIP Rule 200 § 302][SIP Rule 220 § 302.11]

35. Records:

- a. The Permittee shall furnish information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. The information shall be provided in a timeframe specified by the Control Officer. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator along with a claim of confidentiality.

[SIP Rule 100 § 501][SIP Rule 220 § 302.13]

- b. If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application is filed but prior to release of a proposed permit. Willful misrepresentation of facts in a permit application is cause for revocation or denial of a permit.

[SIP Rule 220 §§ 301.5, 301.6]

36. Right to Entry:

- a. The Control Officer during reasonable hours, for the purpose of enforcing and administering County or SIP Rules or the Clean Air Act, or any provision of the Arizona Revised Statutes relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under A.R.S. 49-488 who in any way denies, obstructs, or hampers such entrance or inspection that is lawfully authorized by warrant.

- b. The Permittee shall allow the Control Officer or his designated representatives, upon presentation of proper credentials (e.g., Maricopa County Air Quality Department identification) and other documents as may be required by law, to:
- i. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept pursuant to the conditions of the permit;
 - ii. Have access to and copy, at reasonable times, any records that are required to be kept pursuant to the conditions of the permit;
 - iii. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required pursuant to this permit;
 - iv. Sample or monitor, at reasonable times, substances, or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
 - v. Record any inspection by use of written, electronic, magnetic, and photographic media.

[SIP Rule 100 § 105]

37. Severability:

The rules, paragraphs, clauses, provisions, and/or sections of this permit are severable, and, if any rule, paragraph, clause, provision, and/or section of this permit is held invalid, the remainder of this permit shall not be affected thereby.

[SIP Rule 100 § 103]

EQUIPMENT LIST**Existing Emission Units**

AQD ID	AQD Description	Type	Operating Status	Quantity	Capacity
BOL001	Boiler Natural Gas, EC1-B01, Steam Production, Kewanee L3S-200-G0, Manufactured 1979, Burners Upgraded 2003	Boiler	Operating	1	6.7 MMBtu/hr
BOL002	Boiler Natural Gas, EC1-B02, Steam Production, Kewanee L3S-200-G0, Manufactured 1980, Burners Upgraded 2003	Boiler	Operating	1	6.7 MMBtu/hr
BOL003	Boiler Natural Gas, EC1- B03, Steam Production, Cleaver Brooks CB-200-200, Manufactured 8/1/1986, Burners Upgraded 2003	Boiler	Operating	1	8.37 MMBtu/hr
BOL004	Boiler Natural Gas, EC1-B04, Steam Production, Kewanee L3S-300-G02, Manufactured 1987, Burners Upgraded 2011	Boiler	Operating	1	10.04 MMBtu/hr
BOL005	Boiler Natural Gas, Ec1-B05, Steam Production, Kewanee L3S-300-G02, Manufactured 1988, Burners Upgraded 2010	Boiler	Operating	1	10.04 MMBtu/hr
BOL008- BOL014	Boiler Natural Gas, CH-8 Facility; CH8BLR115-01,02,03,04,05,06,07,08,09; Steam Production, AERCO BMK6000 Fire Tube Boilers;Units 01-07 Installed 6/13, Units 08 & 09 not yet installed	Boiler	Operating	7	6.0 MMBtu/hr
BOL015- BOL018	Boiler Natural Gas, MSB Building; AERCO BMK6000 Fire Tube Boilers; Installed 2015	Boiler	Operating	4	6.0 MMBtu/hr
CTW001- CTW003	Cooling Towers MSB CT-01, MSB CT-02, MSB CT-03; Manufacturing Support Building (MSB); 0.001% Drift	Cooling Tower	Operating	3	3,600 gpm
CTW004- CTW009	Cooling Towers EC CT-07, EC CT-08, EC CT-09, EC CT-10, EC CT-11, EC CT-12; Ceramic Unilite Towers Model UL-2727-75-19P6; Emergency Center (EC); 0.001% Drift	Cooling Tower	Operating	6	7,200 gpm

AQD ID	AQD Description	Type	Operating Status	Quantity	Capacity
CTW010-CTW013	Cooling Towers CH8 CT; EVAPCO AT-288-0324; 0.0005% Drift; Installed 6/13	Cooling Tower	Operating	4	5,250 gpm
ENG001	Engine Microturbine, CH1-GEN606-01; Natural Gas, Capstone C65 Standard; 842,000 Btu/hr; Installed 6/16/16	Engine	Operating	1	87.17 hp
ENG002	Engine Microturbine, CH8-GEN606-02; Natural Gas, Capstone C65 NG CARB; 871,000 Btu/hr; Installed 2018	Engine	Operating	1	87.17 hp
ENG003	Emergency Generator Diesel, F6-EG-1, Caterpillar C-27, Manufactured 1/1/2012	Engine	Operating	1	1,141 hp
ENG004	Emergency Generator Diesel, RODI-EG-1, Cummins KTA/38/G1, Manufactured 10/23/1990	Engine	Operating	1	1,135 hp
ENG006	Emergency Generator Diesel, C2-SG-01, Cummins KTTA50-G2, Manufactured 10/27/2000	Engine	Operating	1	2,200 hp
ENG007	Emergency Generator Diesel, C2-SG-02, Cummins KTTA50-G2, Installed 10/27/2000	Engine	Operating	1	2,200 hp
ENG008	Emergency Generator Diesel, C2-SG-03, Cummins QSK60-G9, Manufactured 3/7/2006	Engine	Operating	1	3,251 hp
ENG009	Emergency Generator Diesel, C3-EG-1, Cummins QSB7-G3NR3, Manufactured 11/18/2009	Engine	Operating	1	250 hp
ENG010	Emergency Generator Diesel, C3-SG-1, Cummins NTA-855-G3, Manufactured 8/8/1995	Engine	Operating	1	535 hp
ENG011	Emergency Generator Diesel, C4-SG-1, Cummins NTA-855-G3, Manufactured 8/25/1997	Engine	Operating	1	535 hp
ENG013	Emergency Generator Diesel, ND-EG-1 (ADC), Cummins QSB7-G3NR3, Manufactured 9/29/10	Engine	Operating	1	250 hp
ENG014	Emergency Generator Diesel, C7-EG-1, Cummins KTA19-G3, Manufactured 7/1/1997	Engine	Operating	1	685 hp

AQD ID	AQD Description	Type	Operating Status	Quantity	Capacity
ENG017	Emergency Generator Diesel, C6-EG-1, Cummins KTTA38-G4, Manufactured 6/29/94	Engine	Operating	1	1,490 hp
ENG018	Pump Diesel, East Fire Pump, Cummins N855F, Manufactured 4/1/80	Engine	Operating	1	240 hp
ENG019	Pump Diesel, West Fire Pump, Cummins N-855-7, Manufactured 4/1/97	Engine	Operating	1	240 hp
ENG020- ENG021	Emergency Generator Diesel, C8-SG-01, C8-SG-02; Ch-8 Facility; Cummins QSX15-G9NR2 Engine, Manufactured 2013	Engine	Operating	2	755 hp
ENG022	Emergency Generator Diesel, F6-SG-1, Cummins KTA/38/G1, Manufactured 9/30/1993	Engine	Operating	1	1,135 hp
ENG023	Emergency Generator Diesel, C2-EG-1, Caterpillar Model D200-2, Manufactured 2015	Engine	Operating	1	315 hp
ENG024	Emergency Generator Diesel, C8-SG-03, Cummins QST30, 2018 Model Year	Engine	Operating	1	1,490 hp
ENG029	Emergency Generator Diesel, C7-SG-03, Caterpillar Model 3512C, 2020 Model Year	Engine	Operating	1	2,206 HP
ENG030	Emergency Generator Diesel, (Replacement EGEN of C4-EG-1), Cummins QSX15-G9NR2, Tier 2	Engine	Operating	1	755 hp
SEM001	Equipment DLX001, Deflux Tool	Semiconductor Manufacturing	Operating	1	
SEM002	Emissions Reporting: Semiconductor Manufacturing Operations CH8 SPTD	Semiconductor Manufacturing	Operating	1	
SEM003	Emissions Reporting: Semiconductor Manufacturing Operations; CH1 SPTD	Semiconductor Manufacturing	Operating	1	
SEM004	Emissions Reporting: Semiconductor Manufacturing Operations; Assembly Technology Development (CATD), CH-4	Semiconductor Manufacturing	Operating	1	
SEM005	Formic Acid Reflow (FAR) Ovens	Semiconductor Manufacturing	Operating	multiple	

CH12 and CH8 Expansion Equipment

AQD ID	AQD Description	Emissions Unit Type	Operating Status	Quantity	Capacity
BOL031	CH12 Large Boilers: CH12-BLR115-01, CH12-BLR115-02, CH12-BLR115-03, CH12-BLR115-04, CH12-BLR115-05, CH12-BLR115-06, CH12-BLR115-07, CH12-BLR115-08; Natural Gas Cleaver Brooks CBLE-4D	Boiler	Not Yet Installed	8	28.6 MMBtu/hr
BOL032	CH12-BLR115-09, CH12 Large Boilers; Natural Gas	Boiler	Not Yet Installed	1	11.7 MMBtu/hr
BOL039	AERCO BMK 6000 Boilers: CH8-BLR115-06, CH8-BLR115-07, CH8-BLR115-08, CH8-BLR115-09, CH8-BLR115-10; Natural Gas	Boiler	Not Yet Installed	5	6 MMBtu/hr
CTW025	CH12 CT; Marley Cooling Towers Model NC8422ZAN16; 16 Units: CH12-CT114-01 - CH12-CT114-16	Cooling Tower	Not Yet Installed	16	4,738 gpm
CTW039	EVAPCO COOLING TOWERS Model AT-228-0324, 3 Units: CH8-CT114-05, CH8-CT114-06, CH8-CT114-07	Cooling Tower	Not Yet Installed	3	5,280 gpm
ENG031 - ENG040	CH12-EG-01, CH12-EG-02, CH12-EG-03, CH12-EG-04, CH12-EG-05, CH12-EG-06, CH12-EG-07, CH12-EG-08, CH12-EG-09, CH12-EG-10 Emergency Generator Diesel, Cummins QSK78-G14 (2750 DQLH), certified Tier 4	Engine	Not Yet Installed	10	4,060 bhp
ENG041, ENG042	CH12-FP153-01, CH12-FP153-02 Pump Diesel, Fire Pump, Clark Model JU6H-UFADN0, diesel	Engine	Not Yet Installed	2	197 bhp
ENG043 - ENG045	CH8-EG-04, CH8-EG-05, CH8-EG-06, Emergency Generator Diesel, Cummins QSK78-G14 (2750 DQLH), certified Tier 4	Engine	Not Yet Installed	3	4,060 bhp
SEM006	Emissions Reporting: Semiconductor Manufacturing Operations CH12 SPTD	Semiconductor Manufacturing	Not Yet Installed	1	

Control Equipment

AQD ID	Description	Company ID	Control Equipment Type	Operating Status	Associated Emissions Unit
BAG001	CH12-DC220-1 Camfil GSX64 42,000 CFM	CH12-DC220-1	Filter/Baghouse	Not Operating	SEM006
BAG002	CH12-DC220-2, Camfil GSX64 42,000 CFM	CH12-DC220-2	Filter/Baghouse	Not Operating	SEM006
CAI001	FAR Tool POU Catalytic Oxidizers	FAR POU	Catalytic Incinerator	Operating	SEM005
TIN003	Regenerative Thermal Oxidizer used in EXVO Process (EXVO RCTO), 50000 CFM	CH12VOC13801	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM006
TIN004	Regenerative Thermal Oxidizer used in EXVO Process (EXVO RCTO), 50000 CFM	CH12VOC13802	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM006
TIN005	CH12-VOC138-03, Munters IZS-3546-TH 50000 CFM	CH12VOC13803	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM006
TIN006	Regenerative Thermal Oxidizer used in EXVO Process (EXVO RCTO), 10,000 CFM	CH8VOC13801	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM002
TIN007	Regenerative Thermal Oxidizer for EXVO Process (EXVO RCTO), 10,000 CFM	CH8VOC13802	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM002
TIN008	CH4 RTO Abatement Units CH4-VOC138-01 and CH4-VOC138-02	CH4-VOC138	Thermal Oxidizer/Thermal Incinerator	Not Operating	SEM004