111 SW Columbia St. Suite 1100, Portland, OR 97201 / P 503.713.5550 / **trinityconsultants.com**

This document is the public (non-CBI) version of Microchip's process emission factor submittal. Certain information has been removed and replaced with [REDACTED – CBI]. The redactions are limited to process-specific emission factor development details and process control efficiency/abatement efficiency information, including supporting methods and inputs that are derived from site-specific process recipes and chemistries and that Microchip treats as proprietary trade secret information.

Microchip has submitted a complete, unredacted version to the Oregon Department of Environmental Quality (DEQ) in accordance with OAR 340-214-0130, together with a written claim of confidentiality for the redacted material. The redacted information is claimed exempt from public disclosure under ORS §192.345(2) and OAR 340-214-0130(3) because it constitutes confidential business information/trade secret information that is not generally known, is maintained as confidential within Microchip on a need-to-know basis (including appropriate contractual controls), and would provide a competitive advantage to others if disclosed.

Microchip recognizes that total emissions and any final emission factor values already included in the public permitting record and used to calculate facility emissions based on throughput are "emissions data" subject to public review. The information withheld in this public version is not "emissions data"; rather, it consists of process-specific derivations, underlying recipe/chemistry inputs, and control efficiency details that Microchip claims as confidential business information.

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Issued 06/25/2026

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES

The following estimated emission factors were determined using process experience and available emissions estimating techniques. These activities are estimated using conservative assumptions where applicable. The 40 CFR Part 98 Subpart I Table I-3 and Table I-8 emissions factors for below calculations are from the final EPA Rule effective as of January 1, 2025.

Ammonia (NH_3) – CVD/Diffusion Processes

[REDACTED – CBI]

$$\frac{\text{lbs } NH_3}{\text{year}} = (0.9)(\text{lbs } NH_3 \text{ used/year})$$

Arsine (AsH_3) – Ion Implant

[REDACTED – CBI]

$$\frac{\text{lbs } AsH_3}{\text{year}} = (0.05)(\text{lbs } AsH_3 \text{ used/year})$$

Boron Trichloride (BCl_3) – Etch Processes

[REDACTED – CBI]

$$\frac{\text{lbs HCl}}{\text{year}} = (0.934)(\text{lbs } BCl_3 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs } Al_2O_3}{\text{year}} = (0.0870)(\text{lbs } BCl_3 \text{ used/year})$$

Boron Trifluoride (BF_3) - Ion Implant

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.885)(\text{lbs } BF_3 \text{ used/year})$$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Chlorine (Cl_2) - Etch Processes

[REDACTED – CBI]

$$\frac{\text{lbs } Cl_2}{\text{year}} = (1.0)(\text{lbs } Cl_2 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HCl}}{\text{year}} = (1.028)(\text{lbs } Cl_2 \text{ used/year})$$

Dichlorosilane (SiH_2Cl_2)

[REDACTED – CBI]

$$\frac{\text{lbs } SiO_2}{\text{year}} = (0.595)(\text{lbs DCS used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HCl}}{\text{year}} = (0.722)(\text{lbs DCS used/year})$$

Difluoromethane (CH_2F_2) - Etch Processes

The primary use of difluoromethane (CH_2F_2) is in etch processes. Using 40 CFR Part 98 Subpart I Table I-3, CH_2F_2 utilization is 87% by weight in etch process. [REDACTED – CBI]

$$\frac{\text{lbs } CH_2F_2}{\text{year}} = (0.13)(\text{lbs } CH_2F_2 \text{ used/year})$$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.079 lbs CF_4 per lbs CH_2F_2 used.

$$\frac{\text{lbs } CF_4}{\text{year}} = (0.079)(\text{lbs } CH_2F_2 \text{ used/year})$$

Hexafluoroethane (C_2F_6) created using 40 CFR Part 98 Subpart I Table I-3 is 0.025 lbs C_2F_6 per lbs CH_2F_2 used.

$$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.025)(\text{lbs } CH_2F_2 \text{ used/year})$$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Trifluoromethane (CHF_3) created using 40CFR Part 98 Subpart I Table I-3 is 0.049 lbs CHF_3 per lbs CH_2F_2 used.

$$\frac{\text{lbs } CHF_3}{\text{year}} = (0.049)\,(\text{lbs } CH_2F_2 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.533)(\text{lbs } CH_2F_2 \text{ used/year})$$

Fluorine (F_2) - Photolithography Processes

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (1.05)(\text{lbs } F_2 \text{ used/year})$$

Hexafluoroethane (C_2F_6) – CVD Processes

Hexafluoroethane (C_2F_6) is utilized for CVD chamber clean (and also etch processes discussed later). Using 40 CFR Part 98 Subpart I Table I-3, C_2F_6 is utilized 45% by weight in CVD processes. [REDACTED – CBI]

$$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.55)(\text{lbs } C_2F_6 \text{ used/year})$$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.19 lbs CF_4 per lbs C_2F_6 used.

$$\frac{\text{lbs } CF_4}{\text{year}} = (0.19)(\text{lbs } C_2F_6 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.219)(\text{lbs } C_2F_6 \text{ used/year})$$

[REDACTED – CBI]

HF Byproduct Formation Rate for C_2F_6 in POU Abatement Device

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.478)(\text{DRE})(\%\ \text{uptime})(\text{lbs } C_2F_6 \text{ used/year})$$

HF Byproduct Formation Rate for CF_4 in POU Abatement Device

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.173)(\text{DRE})(\%\ \text{uptime})(\text{lbs } C_2F_6 \text{ used/year})$$

Hydrogen Bromide (HBr) - Etch Processes

[REDACTED – CBI]

$$\frac{\text{lbs HBr}}{\text{year}} = (1.0)(\text{lbs HBr used/year})$$

Hydrogen Chloride (HCl) - Diffusion Processes and Epi Processes

[REDACTED – CBI]

$$\frac{\text{lbs HCl}}{\text{year}} = (1.0)(\text{lbs HCl used/year})$$

Nitrogen Trifluoride (NF_3) – CVD In-situ Plasma Chamber Clean

Nitrogen trifluoride (NF_3) is utilized for CVD in-situ plasma chamber clean. The 40 CFR Part 98 Subpart I Table I-3 provides 82% utilization of NF_3 for CVD in-situ plasma chamber clean.
[REDACTED – CBI]

$$\frac{\text{lbs } NF_3}{\text{year}} = (0.18)(\text{lbs } NF_3 \text{ used/year})$$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.14 lbs CF_4 per lbs NF_3 used.

$$\frac{\text{lbs } CF_4}{\text{year}} = (0.14)(\text{lbs } NF_3 \text{ used/year})$$

[REDACTED – CBI]

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

$\frac{\text{lbs HF}}{\text{year}} = (0.566)(\text{lbs } NF_3 \text{ used/year})$

Nitrogen Trifluoride (NF_3) – CVD Remote Plasma Chamber Clean

Nitrogen trifluoride (NF_3) is utilized for CVD remote plasma chamber clean. The 40 CFR Part 98 Subpart I Table I-3 provides 97.2% utilization of NF_3 for CVD remote plasma chamber clean. [REDACTED – CBI]

$\frac{\text{lbs } NF_3}{\text{year}} = (0.028)(\text{lbs } NF_3 \text{ used/year})$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.015 lbs CF_4 per lbs NF_3 used.

$\frac{\text{lbs } CF_4}{\text{year}} = (0.015)(\text{lbs } NF_3 \text{ used/year})$

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.808)(\text{lbs } NF_3 \text{ used/year})$

Octafluorocyclobutane (C_4F_8) – Etch Processes

The use of octafluorocyclobutane (C_4F_8) is in etch processes. Using 40 CFR Part 98 Subpart I Table I-3, C_4F_8 is utilized 86% by weight in etch process. [REDACTED – CBI]

$\frac{\text{lbs } C_4F_8}{\text{year}} = (0.14)(\text{lbs } C_4F_8 \text{ used/year})$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.11 lbs CF_4 per lbs C_4F_8 used.

$\frac{\text{lbs } CF_4}{\text{year}} = (0.11)(\text{lbs } C_4F_8 \text{ used/year})$

Hexafluoroethane (C_2F_6) created using 40 CFR Part 98 Subpart I Table I-3 is 0.037 lbs C_2F_6 per lbs C_4F_8 used.

$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.037)(\text{lbs } C_4F_8 \text{ used/year})$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Trifluoromethane (CHF_3) created using 40 CFR Part 98 Subpart I Table I-3 is 0.040 lbs CHF_3 per lbs C_4F_8 used.

$$\frac{\text{lbs } CHF_3}{\text{year}} = (0.040)(\text{lbs } C_4F_8 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.522)(\text{lbs } C_4F_8 \text{ used/year})$$

Octafluorocyclopentene (C_5F_8) – Etch Processes

Octafluorocyclopentene (C_5F_8) is utilized in etch processes. Using 40 CFR Part 98 Subpart I Table I-3, C_5F_8 is utilized 92.8% by weight in etch process. [REDACTED – CBI]

$$\frac{\text{lbs } C_5F_8}{\text{year}} = (0.072)(\text{lbs } C_5F_8 \text{ used/year})$$

Hexafluoroethane (C_2F_6) created using 40 CFR Part 98 Subpart I Table I-3 is 0.014 lbs C_2F_6 per lbs C_5F_8 used.

$$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.014)(\text{lbs } C_5F_8 \text{ used/year})$$

Trifluoromethane (CHF_3) created using 40 CFR Part 98 Subpart I Table I-3 is 0.0039 lbs CHF_3 per lbs C_5F_8 used.

$$\frac{\text{lbs } CHF_3}{\text{year}} = (0.0039)(\text{lbs } C_5F_8 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.686)(\text{lbs } C_5F_8 \text{ used/year})$$

Octafluoropropane (C_3F_8) – CVD Processes

Octafluoropropane (C_3F_8) is used in CVD processes as a chamber clean gas. C_3F_8 is calculated below using 60% C_3F_8 process utilization from 40 CFR Part 98 Subpart I Table I-3. [REDACTED – CBI]

$$\frac{\text{lbs } C_3F_8}{} = (0.40)(\text{lbs } C_3F_8 \text{ used/year})$$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

year

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.20 lbs CF_4 per lbs C_3F_8 used.

$$\frac{\text{lbs } CF_4}{\text{year}} = (0.20)(\text{lbs } C_3F_8 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.329)(\text{lbs } C_3F_8 \text{ used/year})$$

[REDACTED – CBI]

HF Byproduct Formation Rate for C_3F_8 in POU Abatement Device

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.341)(\text{DRE})(\%\text{ uptime})(\text{lbs } C_3F_8 \text{ used/year})$$

HF Byproduct Formation Rate for CF_4 in POU Abatement Device

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.182)(\text{DRE})(\%\text{ uptime})(\text{lbs } C_3F_8 \text{ used/year})$$

Phosphine (PH_3) – Ion Implant

[REDACTED – CBI]

$$\frac{\text{lbs } PH_3}{\text{year}} = (0.05)(\text{lbs } PH_3 \text{ used/year})$$

Phosphine (PH_3) - Atmospheric CVD Processes

[REDACTED – CBI]

lbs PH_3/year = (0.2)(lbs PH_3 used/year)

$$\frac{\text{lbs } P_2O_5}{} = (1.67)(\text{lbs } PH_3 \text{ used/year})$$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

year

Phosphine – Epi Processes and Non-atmospheric CVD Processes

[REDACTED – CBI]

lbs PH_3/year = (1.0)(lbs PH_3 used/year)

Phosphorus Oxychloride ($POCl_3$) – Diffusion Processes

[REDACTED – CBI]

$\frac{\text{lbs } Cl_2}{\text{year}}$ = (0.694)(lbs $POCl_3$ used/year)

$\frac{\text{lbs } P_2O_5}{\text{year}}$ = (0.463)(lbs $POCl_3$ used/year)

Silane (SiH_4) - CVD Processes

[REDACTED – CBI]

$\frac{\text{lbs } SiO_2}{\text{year}}$ = (1.87)(lbs SiH_4 used/year)

Silicon Tetrafluoride (SiF_4) – CVD

[REDACTED – CBI]

$\frac{\text{lbs } SiO_2}{\text{year}}$ = (0.577)(lbs SiF_4 used/year)

$\frac{\text{lbs HF}}{\text{year}}$ = (0.769)(lbs SiF_4 used/year)

Sulfur Hexafluoride (SF_6) – Etch Processes

Sulfur hexafluoride (SF_6) is used in etch processes. Based on 40 CFR Part 98 Subpart I Table I-3, 45% of SF_6 is utilized in etch process. [REDACTED – CBI]

$\frac{\text{lbs } SF_6}{\text{year}}$ = (0.55)(lbs SF_6 used/year)

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Tetrafluoromethane (CF_4) created using 40CFR Part 98 Subpart I Table I-3 is 0.13 lbs CF_4 per lbs SF_6 used.

$$\frac{\text{lbs } CF_4}{\text{year}} = (0.13)(\text{lbs } SF_6 \text{ used/year})$$

Hexafluoroethane (C_2F_6) created using 40CFR Part 98 Subpart I Table I-3 is 0.11 lbs C_2F_6 per lbs SF_6 used.

$$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.11)(\text{lbs } SF_6 \text{ used/year})$$

Trifluoromethane (CHF_3) created using 40 CFR Part 98 Subpart I Table I-3 is 0.0012 lbs CHF_3 per lbs SF_6 used.

$$\frac{\text{lbs } CHF_3}{\text{year}} = (0.0012)(\text{lbs } SF_6 \text{ used/year})$$

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.155)(\text{lbs } SF_6 \text{ used/year})$$

Tetraethylorthosilicate (TEOS) – CVD Processes

[REDACTED – CBI]

$$\frac{\text{lbs } SiO_2}{\text{year}} = (0.288)(\text{lbs TEOS used/year})$$

Germanium Tetrafluoride (GeF_4) – CVD Processes

[REDACTED – CBI]

$$\frac{\text{lbs HF}}{\text{year}} = (0.539)(\text{lbs } GeF_4 \text{ used/year})$$

Trimethyl Phosphite (TMPI) – CVD Process

[REDACTED – CBI]

$$\frac{\text{lbs } P_2O_5}{\text{year}} = (0.57)\ (\text{lbs } (CH_3O)_3P \text{ used/year})$$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

$\frac{\text{lbs } CH_3OH}{\text{year}} = (0.775)\ (\text{lbs } (CH_3O)_3P \text{ used/year})$

Tetrafluoromethane (CF_4) – CVD Processes

Tetrafluoromethane (CF_4) is utilized in CVD in-situ plasma chamber cleaning processes (etch and wafer cleaning processes discussed later). Using 40 CFR Part 98 Subpart I Table I-3, CF_4 is utilized 8% by weight in CVD in-situ plasma chamber cleaning processes. [REDACTED – CBI]

$\frac{\text{lbs } CF_4}{\text{year}} = (0.92)(\text{lbs } CF_4 \text{ used/year})$

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.073)(\text{lbs } CF_4 \text{ used/year})$

[REDACTED – CBI]

HF Byproduct Formation Rate for CF_4 in POU Abatement Device

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.837)(\text{DRE})(\%\text{ uptime})(\text{lbs } CF_4 \text{ used/year})$

Tetrafluoromethane (CF_4) – Etch/Wafer Cleaning Processes

Tetrafluoromethane (CF_4) is utilized in etch processes and wafer cleaning processes. Using 40 CFR Part 98 Subpart I Table I-3, CF_4 is utilized 27% by weight in etch and wafer cleaning processes. [REDACTED – CBI]

$\frac{\text{lbs } CF_4}{\text{year}} = (0.73)(\text{lbs } CF_4 \text{ used/year})$

Hexafluoroethane (C_2F_6) created using 40 CFR Part 98 Subpart I Table I-3 is 0.041 lbs C_2F_6 per lbs CF_4 used.

$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.041)(\text{lbs } CF_4 \text{ used/year})$

Trifluoromethane (CHF_3) created using 40 CFR Part 98 Subpart I Table I-3 is 0.091 lbs CHF_3 per lbs CF_4 used.

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

$\frac{\text{lbs } CHF_3}{\text{year}} = (0.091)(\text{lbs } CF_4 \text{ used/year})$

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.132)(\text{lbs } CF_4 \text{ used/year})$

Trifluoromethane (CHF_3) – Etch/Wafer Cleaning Processes

The use of trifluoromethane (CHF_3) is in etch and wafer cleaning processes. Using 40CFR Part 98 Subpart I Table I-3, CHF_3 is utilized 49% by weight in etch and wafer cleaning processes.

[REDACTED – CBI]

$\frac{\text{lbs } CHF_3}{\text{year}} = (0.51)(\text{lbs } CHF_3 \text{ used/year})$

Tetrafluoromethane (CF_4) created using 40 CFR Part 98 Subpart I Table I-3 is 0.085 lbs CF_4 per lbs CHF_3 used.

$\frac{\text{lbs } CF_4}{\text{year}} = (0.085)(\text{lbs } CHF_3 \text{ used/year})$

Hexafluoroethane (C_2F_6) created using 40CFR Part 98 Subpart I Table I-3 is 0.035 lbs C_2F_6 per lbs CHF_3 used.

$\frac{\text{lbs } C_2F_6}{\text{year}} = (0.035)(\text{lbs } CHF_3 \text{ used/year})$

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.312)(\text{lbs } CHF_3 \text{ used/year})$

Tungsten Hexafluoride (WF_6) – CVD Processes

[REDACTED – CBI]

$\frac{\text{lbs HF}}{\text{year}} = (0.403)(\text{lbs } WF_6 \text{ used/year})$

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Organic Compounds Used in Photolithography, Cleaning, etc.

Organic constituent emission factors are estimated based on process knowledge of the chemistries used at the facility, waste stream generated from processes using organic chemistries, and experience with the design of the exhaust management system for organic constituents. Estimated emission factor for liquid organic compounds is 0.20 lb emitted per lb of constituent used for isopropyl alcohol used in process, cresols, 1-4 dioxane, n-butyl alcohol, propylene glycol methyl ether (PGME), and propylene glycol methyl ether acetate (PGMEA), and pyrocatechol. An emission factor of 1.0 is used for acetone, ethylene glycol, methanol, hexamethyldisilazane (HMDS), trimethylsilyldiethylamine (DEATS), and for isopropanol that is used for wipe cleaning (note: isopropanol is also used is processes, with an emission factor of 0.20) which are anticipated to be volatile species conservatively assumed to all be emitted.

Acid Solutions, Alkaline Solutions and Additional Organic Compounds

The following acid solutions, alkaline solutions and organic compound emission factors were estimated using fab process experience and engineering estimates.

Chemical	Emission Factor (lbs/lbs)
Ammonium hydroxide solution (as NH_3)	0.5
Antimony	0.001
NH_3 in BOE	0.01
CMP slurry (PM10)	0.001
Copper sulfate	0.001
Ethylene glycol	1
Hydrochloric acid (as HCl)	0.05
Hydrofluoric acid (as HF) - dilute solutions	0.05
Hydrofluoric acid (as HF) - 50% solution	0.5
HF in BOE	0.01
Methanol	1
Nitric acid (as HNO_3) – concentrated or heated	0.4
Nitric Acid – dilute solutions or unheated	0.01

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

Phosphoric acid (as H_3PO_4)	0.001
Silicon Dioxide (in solution)	0.001
Silver nitrate	0.001
Sodium hydroxide	0.001
Sulfuric acid (as H_2SO_4)	0.001
3-amino-1,2,4—triazole	0.05

Note: all above emission factors will also be used in mixtures containing these compounds.

Fluorides

Fluorides emissions are determined using compliance stack test data.

VOC Control Equipment

[REDACTED – CBI]

HMDS Oxidation:

[REDACTED – CBI]

$$\frac{\text{lbs } SiO_2}{\text{year}} = (0.744)(\text{lbs HMDS used/year})$$

DEATS Oxidation:

[REDACTED – CBI]

$$\frac{\text{lbs } SiO_2}{\text{year}} = (0.413)(\text{lbs DEATS used/year})$$

Centralized Scrubber Removal Efficiencies

[REDACTED – CBI]

VOC Control Equipment Removal Efficiencies

MICROCHIP GRESHAM PROCESS EMISSION FACTORS AND ABATEMENT REMOVAL EFFICIENCIES (CONTINUED)

The removal efficiency used for organic compounds and hydroxylamine that are exhausted to VOC control equipment is based on compliance testing.

POU Abatement Device Removal Efficiencies

[REDACTED – CBI]

Emissions from Sputtering Operations and Anode Usage

[REDACTED – CBI]
Emissions from sputtering operations and anode usage are conservatively estimated assuming 0.001 lb of constitution is emitted per lb of constituent direct use.

Hydrochloric Acid Storage Tank Emissions

[REDACTED – CBI]

$$\frac{\text{lbs HCl}}{\text{year}} = (0.00096)(\text{gallons used})$$