

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
09 December 2014

Federally Enforceable District Origin Operating Permit
Statement of Basis

Company: Forth Technologies, Inc.

Plant Location: 600 Bergman Avenue, Louisville, KY 40203

Date Application Received: 23 March 2005 **Date Admin Complete:** 23 March 2005

Date of Draft Permit: 23 May 2014; 09 December 2014

District Engineer: Dustin Gohs

Permit No: 27825-14-F-R1

Plant ID: 1231

SIC Code: 2816
2869

NAICS: 325130
325110

AFS: 1231

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment for sulfur dioxide (SO₂).

Application Type/Permit Activity:

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Compliance Summary:

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

I. Source Information

1. **Product Description:** Forth Technologies is a pigment manufacturing facility.
2. **Process Description:** The raw materials are ground, mixed, and dried to produce various types of pigments.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.
4. **Emission Unit Summary:**

Emission Unit	Emission Point	Equipment Description
U1	<i>Dryers</i>	
	E1	One (1) Troy tray dryer/oven, model TD-1, and a drum for the drummed pigment transportation to the grinder
	E2	One (1) Troy tray dryer/oven, model TD-2, and a drum for the drummed pigment transportation to the grinder
	E3	One (1) spray dryer process consisting of a Bowen spray dryer (SD-1), model BB6, a process cyclone separator (C1), a wet scrubber (C2), and Tanks T-21 and T-22 used for storage of raw material, pigment slurry
	E3a	One (1) storage tank (T-21) used for storage of raw materials and pigment slurry for Spray Dryer SD-1
	E3b	One (1) storage tank (T-22) used for storage of raw materials and pigment slurry for Spray Dryer SD-1
	E4	One (1) spray dryer process consisting of a Bowen spray dryer (SD-2), model BB6, a process cyclone separator (C3), a wet scrubber (C4), and Tanks T-25 and T-26 used for storage of raw material, pigment slurry
	E4a	One (1) storage tank (T-25) used for storage of raw materials and pigment slurry for Spray Dryer SD-2
	E4b	One (1) storage tank (T-26) used for storage of raw materials and pigment slurry for Spray Dryer SD-2
	<i>Salt Grinding</i>	
	E7	One (1) attritor (A-1)
	E8	One (1) attritor (A-2)
	E9	One (1) attritor (A-5)
	E10	One (1) attritor (A-7)
E11	One (1) attritor (A-8)	

Emission Unit	Emission Point	Equipment Description
	E12	One (1) attritor (A-9)
	C7	One (1) wet scrubber (SBM01SC01) used to control VOC emissions from the attritors
	C8	One (1) dust collector (SBM01DC01) used to control PM emissions from the attritors
<i>AP Process</i>		
	E13	One (1) 6,400 gallon storage tank (Tank #31)
	E14	One (1) 500 gallon storage tote
	E15	One (1) 3,500 gallon mix tank (Tank #35)
	E16	One (1) 5,300 gallon finished product storage tank (Tank #36)
	C9	One (1) educator (venture scrubber), AP Scrubber 1, used to control emissions from Tanks #31, #35, and #36
<i>1236 Process</i>		
	E17	One (1) stainless steel reactor process consisting of a stainless steel reactor (R-30) with a capacity of 1,500 gallons, with an associated process reflux condenser, vacuum pump, and knock out point
	E18	One (1) Monel Reactor process consisting of a reactor (R-33) with a capacity of 1,500 gallons and an associated process condenser
<i>PM1/PM2 Process</i>		
	E19	One (1) Pfaulder reactor tank (Tank #30), model 316SS, with a capacity of 2,000 gallons (Also used with the 1236 Process)
	E20	One (1) Air Products fiberglass mix tank (Tank #7), with a capacity of 9,300 gallons
	E21	One (1) Air Products fiberglass mix tank (Tank #9), with a capacity of 7,500 gallons
	E22	One (1) filter press (#7), with a capacity of 120 ft ³
	E23	One (1) Eimco-Shriver filter press (#8), with a capacity of 80 ft ³
	E24	One (1) Air Products fiberglass mix tank (Tank #10), with a capacity of 12,869 gallons
	E25	One (1) Air Products fiberglass mix tank (Tank #11), with a

Emission Unit	Emission Point	Equipment Description
		capacity of 12,869 gallons
<i>One Pot Process</i>		
	E26	One (1) Pfaulder reactor tank (R-32), model G/L SA2000, with a capacity of 2,000 gallons
	E27	One (1) fiberglass mix tank (Tank #4), with a capacity of 9,300 gallons
	C10	One (1) packed-bed wet scrubber (S-33) for the reactor room, with an efficiency of 95%
<i>Pigment Manufacturing</i>		
	E30	One (1) Scott Equipment ribbon blender, model GHM4812, with a capacity of 150 ft ³
	E31	One (1) IDH hammermill, with a capacity of 1,000 lb/hr
	E32	One (1) LIBCO tote dumper, with a capacity of 20 ft ³
	E33	One (1) separation vessel, with a working capacity of 20 ft ³
	E34	One (1) JETFLOW bagging unit, model 800 Jetflow Impeller Packer, with a capacity of 44 lb/min
	C11	One (1) Torit DownFlo dust collector, model 3DF-6
	C12	One (1) MFA dust collector, model MFA-01-B2
<i>Flushers</i>		
	E35	One (1) Sigma Blade mixer (Flusher #1), with a capacity of 300 gallons
	E36	One (1) Sigma Blade mixer (Flusher #2), with a capacity of 300 gallons
	E37	One (1) Schold mixing system, with a capacity of 500 gallons
	E38	One (1) Schold mixing system, with a capacity of 250 gallons
	E39	One (1) Schold mixing system, with a capacity of 100 lb/hr
<i>Salt Attrition for Pigment Manufacturing</i>		
	E40	One (1) Homrich/Freudenberg double blade Sigma mixer salt attritor, with a capacity of 750 gallons
	E41	One (1) salt extraction tank (Tank #6), with a capacity of 2,500 gallons

Emission Unit	Emission Point	Equipment Description
	C13	One (1) Ceilcote packed-bed wet scrubber, with a capacity of 1,000 cfm
	C14	One (1) TIGG activated carbon adsorber, model N150, used to control VOC emissions from Tank #6
<i>U12</i>		
	E42	One (1) Pioneer blender, model FM100B, with a capacity of 500 lb/hr
	E43	One (1) Aaron Equipment ribbon blender, with a capacity of 2,000 lb/hr
	E44	One (1) custom ribbon blender, with a capacity of 1,000 lb/hr
	N/A	Three (3) Hayes electric tray dryers, model LTO-E
	C15	One (1) Donaldson Torit baghouse, model 3-6
<i>U13</i>		
	E45	One (1) Abbe Sigma Blade mixer, with a capacity of 1,000 lb/hr
	N/A	One (1) Hayes electric tray dryer, model LTO-E
	E46	One (1) Mikropul hammermill, with a capacity of 800 lb/hr
	C16	One (1) Donaldson Torit baghouse, model 3-6
<i>Basic Dye Pigment Production</i>		
	E48	One (1) complex filtration tank, with a capacity of 3,000 gallons
	E49	One (1) dye solution tank, with a capacity of 3,000 gallons
	E50	One (1) basic dye make tank, with a capacity of 5,700 gallons
	E51	One (1) dye filtration tank, with a capacity of 9,300 gallons
<i>Diazo Dye Pigment Production</i>		
	E52	One (1) reactor dissolution vessel (T-33), model 315 SS, with a capacity of 2,000 gallons
	E53	One (1) diazotitation tank (T-36) FRP, with a capacity of 5,500 gallons
	E54	One (1) strike tank FRP, with a capacity of 9,300 gallons
<i>Grinding and Blending Operations</i>		

Emission Unit	Emission Point	Equipment Description
One (1) grinding operation consisting of:		
E55		One (1) Mikro Pulverizer hammermill, model 2DH, with a capacity of 1,150 lb/hr, with an associated separation vessel
E55a		One (1) associated bagging unit
C17		One (1) Donaldson Torit baghouse, model 9PJD6, used to control emissions from both the hammermill and bagging unit
One (1) grinding operation consisting of:		
E56		One (1) Mikro Pulverizer hammermill, model 2DH, with a capacity of 1,150 lb/hr, with an associated separation vessel
E56a		One (1) associated bagging unit
C18		One (1) Donaldson Torit baghouse, model 9PJD6, used to control emissions from both the hammermill and bagging unit
One (1) ribbon blending operation consisting of:		
E57		One (1) custom ribbon blender, with a capacity of 80 ft ³
E57a		One (1) associated bagging unit
C19		One (1) Donaldson Torit baghouse, model 3DF6, used to control emissions from both the ribbon blender and the bagging unit
One (1) ribbon blending operation consisting of:		
E58		One (1) custom ribbon blender, with a capacity of 250 ft ³
E58a		One (1) associated bagging unit
<i>Small Batch Operation</i>		
E59		One (1) NIRO spray dryer, with a capacity of 40 lb/hr
IA1	IA1	One (1) natural gas boiler with a capacity of 8.369 MMBTU/hr
IA2 – IA4		Three (3) laboratory hoods
IA5		One (1) Baker/Perkins flusher
IA6		One (1) custom flusher, with a capacity of 5 gallons
IA7		One (1) custom flusher, with a capacity of 2 gallons

Emission Unit	Emission Point	Equipment Description
	IA8	One (1) DH hammermill
	IA9	One (1) 30" SWECO screener
	IA10	One (1) stainless steel reactor
	IA11	One (1) glass lined reactor
	IA12	One (1) rotary dryer with an associated condenser
	IA13 – IA14	Two (2) Dyno horizontal media mills
	IA15 – IA16	Two (2) neutralization tanks
	IA17 – IA18	Two (2) wastewater clarifiers
	IA19	One (1) sludge tank
	IA20	One (1) filter press #12
	IA21	Various filter presses
IA-EG	N/A	Future installation of emergency diesel generators manufactured after April 1, 2006 with a maximum engine power of up to 500 hp

5. **Fugitive Sources:** There are no fugitive source emissions at this facility.

6. **Permit Revisions:**

Revision No.	Issue Date	Public Notice Date	Type	Attachment No./Page No.	Description
Initial	06/30/2014	05/23/2014	Initial	Entire Permit	Initial Issuance
R1	xx/xx/xxxx	12/09/2014	Signifacant	U1	Clarification in U1 Description of equipment and U1 Equipment table; removal of Tank #1 from U1 PM/PM ₁₀ Standards; changes and corrections made to U1 PM/PM ₁₀ Standards

7. Emission Summary:

Pollutant	District Calculated Actual Emissions (tn/yr) 2012 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.59	No
NO _x	0.70	No
SO ₂	0.0042	No
PM ₁₀	0.87	No
VOC	0.37	No
Total HAPs	0.31	Yes
Single HAP	0.13	Yes
GHG – CO ₂ ¹	9,302.93	No
GHG - N ₂ O ¹	0.18	No
GHG - CH ₄ ¹	0.018	No
GHG – CO ₂ e ¹	9,312.07	No

¹ The greenhouse gas (GHG) emission values listed in this table are the current potential emissions, not the actual emissions from the 2012 Emission Inventory.

8. Applicable Requirements:

PSD 40 CFR 60 40 CFR 63 District-Origin
 NSR 40 CFR 61 SIP Other

9. MACT Requirements: The source has no future MACT requirements.

10. Referenced Federal Regulations in Permit: The source is not subject to any federal regulations.

II. Regulatory Analysis

- 1. Acid Rain Requirements:** Forth Technologies, Inc. is not subject to the Acid Rain Program.
- 2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Forth Technology Inc. does not manufacture, sell, or distribute any of the listed chemicals. The sources use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- 3. Prevention of Accidental Releases 112(r):** Forth Technologies, Inc. does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the

corresponding specified threshold amount. Therefore, the source is not required to develop and implement a Risk Management Plan pursuant to 40 CFR 68, Subpart G and Regulation 5.15.

4. **40 CFR Part 64 Applicability Determination:** Forth Technologies, Inc. is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.

5. **Basis of Regulation Applicability**

- a. **Plant-wide**

Forth Technologies, Inc. is a potential major source for Total HAPs and the individual HAP POM. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant-wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Regulation 2.17, section 5.1 allows the District to incorporate operational limits into the permit. Forth Technologies, Inc. requested a plant-wide emission limit of 25 tons per year for criteria pollutants, 12.5 tons per year for Total HAPs, and 5 tons per year for individual HAPs.

Regulation 2.17, section 5.2 requires monitoring and record keeping to ensure compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

Regulation 2.17, section 2, requires stationary sources for which a FEDOOP is issued shall submit an annual compliance certification by April 15. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an annual compliance report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

Regulation 2.17, section 5.2 requires testing to ensure compliance with the terms and conditions of the permit.

b. **Emission Unit U1 – Operation Equipment**i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E1: Tray Dyer TD-1	5,000 lb/load	1996	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E2: Tray Dryer TD-2	5,000 lb/load	1996		
E3: Spray Dryer SD-1	165 lb/load	1998		
E3a: Tank #21	1,500 gallons	1998		
E3b: Tank #22	1,500 gallons	1998		
E4: Spray Dryer SD-2	165 lb/load	1996		
E4a: Tank #25	1,500 gallons	1996		
E4b: Tank #26	1,500 gallons	1996		
E7: Attritor, A-1	200 lb/batch	1999	7.08, 7.25	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E8: Attritor, A-2	200 lb/batch	1999		
E9: Attritor, A-5	200 lb/batch	1999	7.08, 7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E10: Attritor, A-7	200 lb/batch	1999		
E11: Attritor, A-8	200 lb/batch	1999		
E12: Attritor, A-9	200 lb/batch	1999		
E13: Tank #31	6,400 gallons	2006	7.12, 7.25	Regulation 7.12 establishes requirements for VOC for storage vessels installed after April 19, 1972; Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E14: Storage Tote	500 gallons	2006	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E15: Tank #35	3,500 gallons	2006		
E16: Tank #36	3,500 gallons	2006		
E17: Reactor, R-30	1,500 gallons	1999	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E18: Monel Reactor, R-33	3,500 gallons	1999		

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E19: Tank #30	2,000 gallons	1999	7.08, 7.25	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976; Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E20: Tank #7	9,300 gallons	2002		
E21: Tank #9	7,500 gallons	1999		
E22: Filter Press #7	120 ft ³	2002		
E23: Filter Press #8	80ft ³	1999		
E24: Tank #10	12,689 gallons	2002		
E25: Tank #11	12,689 gallons	2002		
E26: Reactor 32	2,000 gallons	1999		
E27: Tank #4	9,300 gallons	1999		
E30: Scott Equipment Ribbon Blender	150 ft ³	2005	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E31: IDH Hammermill	3,000 lb/hr	2005		
E32: LIBCO Tote Dumper	20 ft ³	2005		
E33: Separation Vessel	20 ft ³	2005		
E34: JETFLOW Bagging Unit	44 lb/min	2005		
E35: Flusher #1	300 gallons	1999	7.08, 7.25	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976; Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E36: Flusher #2	300 gallons	1998		
E37: Schold Mixing System	500 gallons	1999		
E38: Schold Mixing System	250 gallons	1999		
E39: Schold Mixing System	100 lb/hr	1999		
E40: Homrich/Freudenberg Attritor	750 gallons	2011		
E41: Tank #6	2,500 gallons	2005		
E42: Pioneer Blender	500 lb/hr	2012	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E43: Aaron Equipment Ribbon Blender	2,000 lb/hr	2012		
E44: Custom Ribbon Blender	1,000 lb/hr	2012		
E45: Sigma Blade Mixer	1,000 lb/hr	2012		
E46: Mikropul Hammermill	800 lb/hr	2012		
E48: Complex Filtration Tank	3,000 gallons	2000	7.08, 7.25	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976;
E49: Dye Solution Tank	3,000 gallons	2000		

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E50: Basic Dye Make Tank	5,700 gallons	2000		Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
E51: Dye Filtration Tank	9,300 gallons	2000		
E52: Reactor Vessel (T-33)	2,000 gallons	2000		
E53: Diazotitation Tank (T-36)	5,500 gallons	2000		
E54: Strike Tank FRP	9,300 gallons	2000		
E55: Mikro Hammermill	1,150 lb/hr	2014	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E55a: Bagging Unit	1,150 lb/hr	2014		
E56: Mikro Hammermill	1,150 lb/hr	2014		
E56a: Bagging Unit	1,150 lb/hr	2014		
E57: Ribbon Blender	80 ft ³	2005		
E57a: Bagging Unit	1,150 lb/hr	2014		
E58: Ribbon Blender	250 ft ³	2014		
E58a: Bagging Unit	1,150 lb/hr	2014	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
E59: NIRO Spray Dryer	40 lb/hr	N/A		

ii. **Control Devices**

P/PE	Install Date	Pollutant Controlled
C2: SD-1 Wet Scrubber	1996	PM, PM ₁₀
C4: SD-2 Wet Scrubber	1996	PM, PM ₁₀
C7: Attritor Process Wet Scrubber	1999	VOC
C8: Attritor Process Dust Collector	1999	PM, PM ₁₀
C9: AP Scrubber 1	2006	VOC
C10: Scrubber S-33	1999	VOC
C11: Torit Dust Collector	2005	PM, PM ₁₀
C12: MFA Dust Collector	2005	PM, PM ₁₀
C13: Ceilcote Packed-bed Wet Scrubber	2005	VOC
C14: Activated Carbon Adsorber	2005	VOC

P/PE	Install Date	Pollutant Controlled
C15: Torit Dust Collector	2012	PM, PM ₁₀
C16: Torit Dust Collector	2011	PM, PM ₁₀
C17: Torit Dust Collector	2011	PM, PM ₁₀
C18: Torit Dust Collector	2014	PM, PM ₁₀
C19: Torit Dust Collector	2014	PM, PM ₁₀

iii. **Standards/Operating Limits**

1) **PM/PM₁₀**

- (a) Regulation 2.17, section 5.1 allows the source to set a synthetic limit below the major source threshold. The source selected a synthetic limit of less than 25 tons/year of PM₁₀.
- (b) The emission standard for PM at all emission points, unless otherwise specified, is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 * (\text{process weight, tons/hr})^{0.62}$$
- (c) Construction permit 85-05-C specifies PM standards for emission points E30, E32, E33, and E34.
- (d) Construction permit 312-07-C specifies PM standards for emission points E35 and E36.
- (e) Construction permit 32949-11-C specifies a PM standard for emission point E41.
- (f) The spray dryer SD-1 cannot meet the PM standard uncontrolled, therefore, Regulation 2.03, section 5.1 requires that the wet scrubber for spray dryer SD-1 shall be utilized to meet the emission standards when the equipment is in operation.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20% for this equipment.

3) **NO_x**

Regulation 7.08, section 4.1 establishes an emission standard for the tray dryers and spray dryers.

4) **VOC**

(a) Regulation 7.25, sections 2.1 and 3.1 establish emission standards for processes producing VOC emissions.

(b) Construction permit 165-06-C, effective 6/21/2006, establishes vapor pressure limits for materials stored in Storage Tank #31.

5) **HAP**

Regulation 2.17, section 5.1 allows the source to set a synthetic limit below the major source threshold. The source selected a synthetic limit of less than 12.5 tons/year of Total HAPs and less than 5 tons/year of individual HAPs.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:** There are no records of any issued enforcement actions resulting from the terms of the present or prior construction or operating permits.
6. **Calculation Methodology or Other Approved Method:**

The following equations shall be used to determine emissions unless other methods are approved by the District.

Liquid Materials/Products Loading/Unloading: The following equation shall be used to determine the VOC emissions from the loading and unloading of liquid VOC containing material:

$$E_{VOC} = 12.46 * \frac{S * P * M * Q}{T}$$

Where,

- E_{voc} = VOC Emissions (lb/yr)
- S = Saturation Point
- P = Vapor Pressure (psia)
- M = Vapor Molecular Weight (lb/lb-mole)
- Q = Volume (1,000 gal/yr)
- T = Temperature (°R)

Liquid Materials/Products Mixing/Reaction: The following equation shall be used to determine the VOC emissions from the mixing and reaction processes involving VOC containing material:

$$E_{VOC} = \left[\left(\frac{\sum(P_x)_{T1}}{14.7 - \sum(P_x)_{T1}} \right) + \left(\frac{\sum(P_x)_{T2}}{14.7 - \sum(P_x)_{T2}} \right) \right] / 2 * \Delta n * M_a * CYC$$

Where,

- E_{voc} = VOC Emissions (lb/yr)
- Σ(P_x)_{T1} = initial partial pressure of each VOC species (x) in the vessel headspace at the initial temperature (T1) (psia)
- Σ(P_x)_{T2} = final partial pressure of each VOC species (x) in the vessel headspace at the final temperature (T2) (psia)
- Δn = number of lb-moles of gas displaced (lb-mole/batch)
- M_a = average vapor molecular weight (lb/lb-mole)
- CYC = number of cycles per year (batches/yr)

7. Permit Fee: Permit fees are based on a FEDOOP initial issuance fee of \$2,500.00 in accordance with Regulation 2.08, section 12.

8. Insignificant Activities

Description	Quantity	PTE (tpy)	Basis for Exemption
Natural Gas Boiler	1	3.59 NO _x	Regulation 1.02, Appendix A
Indirect Heat Exchanger	1	0.12 (NO _x)	Regulation 1.02, Appendix A
Propane Internal Combustion Engines (Industrial Trucks)	8	0.8 (NO _x)	Regulation 1.02, Appendix A
Emergency Relief Vents	5	0.0	Regulation 1.02, Appendix A
Laboratory Hoods	3	0.279 (VOC)	Regulation 1.02, Appendix A
Parts Washer equipped with secondary reservoir	1	0.762 (VOC)	Regulation 1.02, Appendix A
Baker/Perkins Flusher	1	0.039 (VOC)	Regulation 1.02, Appendix A
Custom Flusher (5 gal.)	1	1.95x10 ⁻³ (VOC)	Regulation 1.02, Appendix A

Description	Quantity	PTE (tpy)	Basis for Exemption
Custom Flusher (2 gal.)	1	7.81×10^{-4} (VOC)	Regulation 1.02, Appendix A
DH Hammermill	1	0.377 (PM ₁₀)	Regulation 1.02, Appendix A
30" SWECO Screener	1	0.292 (PM ₁₀)	Regulation 1.02, Appendix A
Roll Mills	3	0.0	Regulation 1.02, Appendix A
Post Mixer	1	0.0	Regulation 1.02, Appendix A
Stainless Steel Reactor	1	0.051 (VOC)	Regulation 1.02, Appendix A
Glass Lined Reactor	1	0.051 (VOC)	Regulation 1.02, Appendix A
Rotary Dryer w/ Condenser	1	0.788 (PM ₁₀)	Regulation 1.02, Appendix A
Oil Warmer	1	0.0	Regulation 1.02, Appendix A
Dyno Horizontal Media Mill	1	0.377 (PM ₁₀)	Regulation 1.02, Appendix A
Neutralization Tanks	2	1.88×10^{-5} (VOC)	Regulation 1.02, Appendix A
Wastewater Clarifiers	2	0.106 (VOC)	Regulation 1.02, Appendix A
Sludge Tank	1	6.37×10^{-5} (VOC)	Regulation 1.02, Appendix A
Filter Press #12	1	0.056 (VOC)	Regulation 1.02, Appendix A
Various Filter Presses	9	0.056 (VOC)	Regulation 1.02, Appendix A

- 1) Insignificant Activities identified in District Regulation 1.02 Appendix A may be subject to size or production rate disclosure requirements.
- 2) Insignificant Activities identified in District Regulation 1.02 Appendix A shall comply with generally applicable requirements.
- 3) Activities identified in Regulation 1.02, Appendix A, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the permit.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) In lieu of recording annual throughputs and calculating actual annual emissions, the owner or operator may elect to report the pollutant Potential To Emit (PTE) quantity listed in the Insignificant Activities table, as the annual emission for each piece of equipment.
- 6) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.

- 7) The owner or operator shall submit an updated list of Insignificant Activities whenever changes in equipment located at the facility occur that cause changes to the plant wide emissions.

9. Basis of Regulation Applicability for IA units

a. **Emission Unit IA1 – Natural Gas Combustion**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IA1: Natural Gas Boiler	8.369 MMBTU/hr	N/A	7.06	Regulation 7.06 establishes requirements for PM and SO ₂ for indirect heat exchangers installed after 4/9/1972

ii. **Standards/Operating Limits**

1) **PM**

Regulation 7.06, section 4.1.4 establishes a particulate matter limit of 0.56 pounds per million BTU actual total heat input.

2) **Opacity**

Regulation 7.06, section 3.1.1 establishes an opacity standard of less than 20% for this equipment.

3) **SO₂**

Regulation 7.06, section 4.1.4 establishes a sulfur dioxide limit of 1.0 pounds per million BTU actual total heat input.

b. **Emission Unit IA2 – Small Batch Operation**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IA2: Lab Hood 1	N/A	N/A	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA3: Lab Hood 2	N/A	N/A	7.25	
IA4: Lab Hood 3	N/A	N/A	7.25	

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
IA5: B/P Flusher	100 gal.	N/A	7.08, 7.25	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976; Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA6: 5 gal. Flusher	5 gal.	N/A	7.08, 7.25	
IA7: 2 gal. Flusher	2 gal.	N/A	7.08, 7.25	
IA8: DH Hammermill	287 lb/hr	N/A	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
IA9: Screener	65 lb/hr	N/A	7.08	
IA10: SS Reactor	100 gal.	N/A	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA11: Glass Reactor	100 gal.	N/A	7.25	
IA12: Rotary Dryer	10 gal.	N/A	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after September 7, 1976
IA13: Media Mill 1	287 lb/hr	N/A	7.08	
IA14: Media Mill 2	287 lb/hr	N/A	7.08	
IA15: Neut. Tank 1	1,000 gal.	N/A	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA16: Neut. Tank 2	1,000 gal.	N/A	7.25	
IA17: Clarifier 1	60 ft ²	N/A	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA18: Clarifier 2	36 ft ²	N/A	7.25	
IA19: Sludge Tank	1,000 gal.	N/A	7.25	Regulation 7.25 established requirements for VOC for equipment installed after June 13, 1979
IA20: Filter Press #12	10 ft ²	N/A	7.25	
IA21: Various Filter Presses	10 ft ²	N/A	7.25	

ii. Standards/Operating Limits**1) PM**

The emission standard for PM at these emission points is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 * (\text{process weight, tons/hr})^{0.62}$$

2) Opacity

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20% for this equipment.

3) VOC

Regulation 7.25, sections 2.1 and 3.1 establish emission standards for processes producing VOC emissions.