

Statement of Basis for Franz Seattle Division – 6th Ave. Air Operating Permit

(Formally known as United States Bakery, Franz Northern Division – 6th Avenue)

Administrative Amendment: June 26, 2016

Table of Contents

1.	Purpose of the Statement of Basis	3
1.1	General	3
1.2	Why is Franz 6 th Ave. an Air Operating Permit Source?.....	3
2.	Source Description.....	3
2.1	Facility Background and Process Information.....	3
2.2	Sponge Dough Process.....	3
2.3	Straight Dough Process	5
3.	Review of Air Operating Permit Application	6
3.1	Initial Application	6
3.2	First Renewal.....	6
3.3	Administrative Amendment	7
4.	CAM, NESHAP and NSPS Applicability Review	7
4.1	Compliance Assurance Monitoring (CAM).....	7
4.2	National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63	8
4.3	Standards of Performance for New Stationary Sources, 40 CFR Part 60	9
5.	Compliance History for December 1998 through August 2011	9
5.1	Chronological Compliance History.....	9
6.	Emission Inventory	9
7.	Explanation of Applicable Requirements	10
7.1	How the tables in Section I work	11
7.2	How monitoring methods in Section II of the AOP are determined.....	12
8.	Explanation of Facility-wide Requirements	13
8.1	Requirement 1.A.2 - Opacity	13
8.2	Requirements 1.A.3 and 1.A.4– Particulate Matter	14
8.3	Requirements 1.A.5– Particulate Matter from Combustion Sources.....	15
8.4	Requirements 1.A.6– Sulfur Dioxide.....	15
8.5	Requirements 1.A.7– Hydrochloric Acid.....	16
8.6	Requirements 1.A.8– Nuisance.....	16
8.7	Requirements I.A.9—I.A.10 – Fugitive Dust	17
8.8	Requirement I.A.11 – Maintain Equipment	18
8.9	Requirement I.A.12 – O&M Plan Requirements	18
8.10	Requirement I.A.13 – Odors	19
8.11	Requirement I.A.14 – Deposition of Particulate Matter	19
9.	Explanation of Emission Unit Specific Requirements.....	19

9.1	Emission Unit #1 – Direct Fired Baking Process.....	19
9.2	Emission Unit #2 – Steam Generating Process and Indirect Fired Ovens	20
10.	O&M Plan Requirements.....	20
11.	Prohibited Activities	21
12.	Activities Requiring Additional Approval.....	21
13.	Standard Terms and Conditions.....	21
14.	Basis for Inapplicable Requirements	21
15.	Public Comments	22

1. Purpose of the Statement of Basis

1.1 General

This Air Operating Permit is a renewal of existing Air Operating Permit No. 11285 for Franz Seattle Division – 6th Ave. (Franz 6th Ave.). This statement of basis summarizes the legal and factual bases for the draft permit conditions in Air Operating Permit No. 11285 to be issued under the authority of the Washington Clean Air Act, Chapter 70.94 Revised Code of Washington, Chapter 173-401 of the Washington Administrative Code and Puget Sound Clean Air Agency Regulation I, Article 7. Unlike the permit, this document is not legally enforceable. It includes references to the applicable statutory or regulatory provisions that relate to Franz 6th Ave.'s emissions to the atmosphere. In addition, this statement of basis provides a description of Franz 6th Ave.'s activities and a compliance history.

1.2 Why is Franz 6th Ave. an Air Operating Permit Source?

Franz 6th Ave. is an air operating permit source because of its emissions of volatile organic compounds (VOC). The majority of these VOC emissions come from the emissions of ethanol, which is formed in the dough and vaporizes in the bakery oven.

2. Source Description

2.1 Facility Background and Process Information

Franz 6th Ave. operates a bread baking facility in Seattle, Washington. The facility can potentially operate 24 hours per day, 365 days per year. Currently, however, the plant is operating 1 to 3 shifts per day (depending on the product), around 152 hours per week, 52 weeks per year. The facility Standard Industrial Classification Code is 2051.

Franz 6th Ave. uses sponge dough and straight dough baking processes to manufacture bakery products.

2.2 Sponge Dough Process

In the first mixing stage generally 60-100% of the total flour, minor ingredients and water are brought together with sufficient mixing to yield a stiff homogeneous mass. Bakers refer to this stage as the sponge. After being subjected to fermentation the sponge is brought back to the mixer where the remaining ingredients are added and the second mixing is applied. At this point, the dough is mixed so as to uniformly disperse the ingredients.

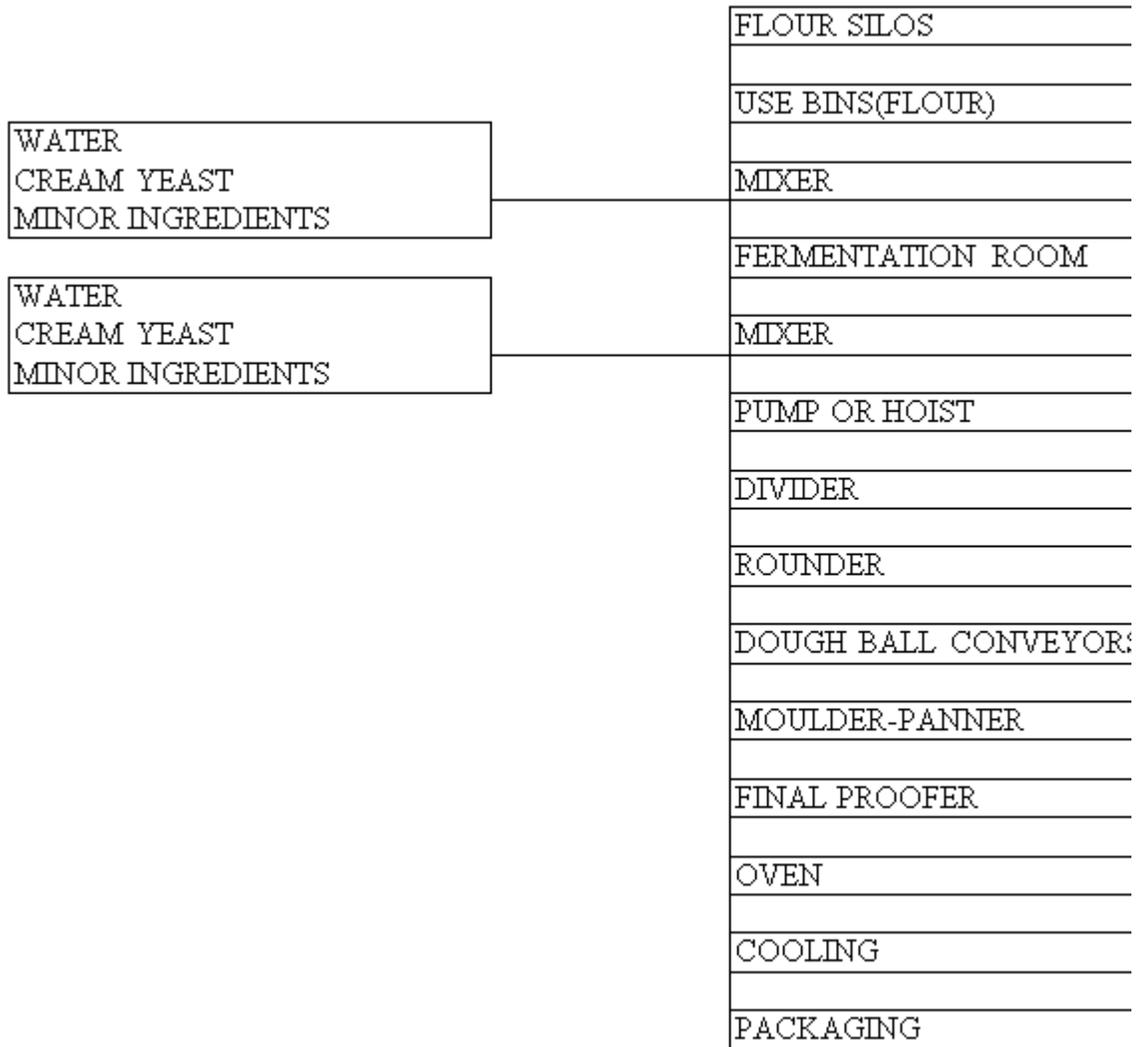
The second fermentation of the dough is referred to as floor time. After being mixed, the dough is allowed to relax or be mechanically developed before dividing can occur. Dough division then occurs and a large mass of dough is divided into smaller pieces of predetermined weight. The dough pieces are then rounded into uniform balls and transferred to the moulding/panning stations.

The dough pieces are run through a set of sheeting rollers, moulded to size and deposited into a pan.

Final proofing will then allow the dough piece to leaven to a desired volume. The proofed product is loaded into the oven and baked to a certain desired color by regulating the time and temperature. The baked product is de-panned and is transferred onto a cooling conveyor or cooling rack where it is allowed to cool. The cooled product is sliced and/or bagged and then staged for distribution.

Figure 1 provides a flow diagram showing the sponge dough process.

FIGURE 1: FLOW DIAGRAM SPONGE DOUGH PROCESS

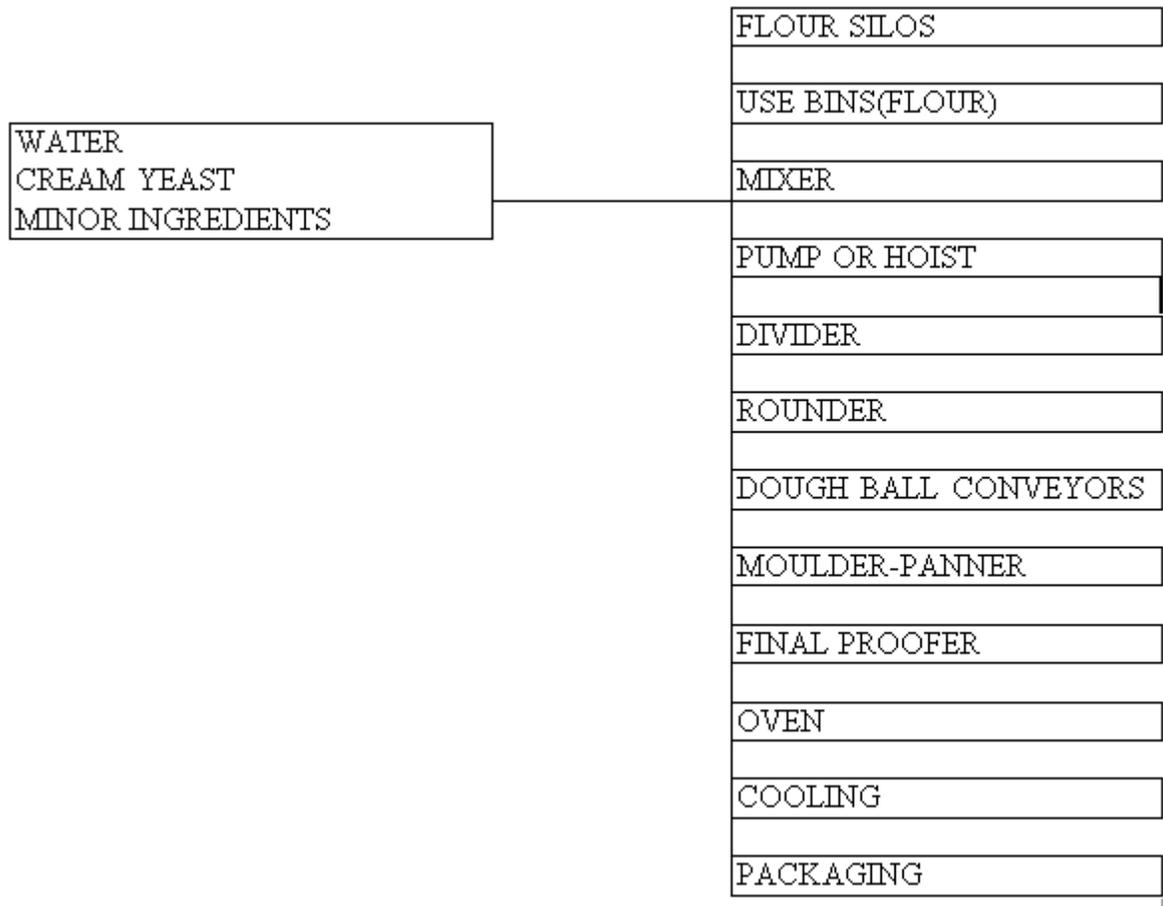


2.3 Straight Dough Process

The straight dough process is a single step mixing process where all the ingredients needed for the dough are placed into a mixer at one time. After mixing, the process is similar to the Sponge Dough Process.

Figure 2 provides a flow diagram showing the sponge dough process.

FIGURE 2: FLOW DIAGRAM STRAIGHT DOUGH PROCESS



3. Review of Air Operating Permit Application

3.1 Initial Application

An air operating permit application was received by Puget Sound Clean Air Agency from Franz 6th Ave. on April 15, 1995 pursuant to WAC 173-401-500(3). The application was acknowledged to be complete in a letter from Puget Sound Clean Air Agency to Franz 6th Ave. dated September 22, 1995. The Puget Sound Clean Air Agency issued Air Operating Permit No. 11285 to Franz 6th Ave. on December 18, 1998.

3.2 First Renewal

An air operating permit renewal application was received by the Agency from Franz 6th Ave. on October 1, 2002. This was received on time with more than one year remaining on the active permit, which expired on December 18, 2003. The Agency reviewed the application and acknowledged it to be complete in an October 25, 2002 letter to Franz 6th Ave. The Agency

issued the first renewal to Air Operating Permit No. 11285 to Franz 6th Ave. on December 18, 2003.

3.3 Administrative Amendment

On January 23, 2004, the Agency finalized an administrative revision to correct the expiration date in the header of the permit and correct an error concerning the date that the first annual report was due (Section V.M., Compliance Certifications).

3.4 Second Renewal

An air operating permit renewal application was received by the Agency from Franz 6th Ave. on August 10, 2007. This was received on time with more than one year remaining on the active permit, which expired on December 18, 2008. The Agency reviewed the application and acknowledged it to be complete in a January 11, 2008 letter to Franz 6th Ave. Franz 6th Ave. operated under the authority of their permit shield from December 19, 2008 until the Agency issued this second renewal to Air Operating Permit No. 11285. [WAC 173-401-640]

4. CAM, NESHAP and NSPS Applicability Review

4.1 Compliance Assurance Monitoring (CAM)

As part of the air operating permit renewal application, an analysis was completed to determine whether a Compliance Assurance Monitoring (CAM) Plan is required for any emission unit at the facility. In accordance with 40 CFR Part 64, any emission unit that meets all three of the following criteria requires a CAM Plan:

1. The unit is subject to an emission limitation or standard for the applicable regulated air pollutant. [40 CFR 64.2(a)(1)]
2. The unit uses a control device to achieve compliance with any such emission limitation or standard. [40 CFR 64.2(a)(2)]
3. The unit has potential pre-control device emissions of the applicable pollutant of at least 100% of the major source amount. [40 CFR 64.2(a)(3)].

The Agency has reviewed the emission units at Franz 6th Ave. and determined that CAM does not apply to any emission units at the facility. The vast majority units at this facility do not meet criteria 2 above as they do not have control devices. The flour silos cannot be excluded based on this criteria as they do have filter controls. Hence, further review is necessary for the silos.

The flour silos at Franz – 6th Ave have bags attached to the top of each silo to control flour emissions. Flour emissions could occur primarily when the silos are filled. The silos are

passively vented, meaning there are no fans to draw air through the filters. For the sake of calculations, we will assume that the silos have fans identical to the ones on the two large flour silos at Franz - Weller Street. Franz- 6th Ave is a sister facility to Franz – Weller St, and operates similar equipment. The Franz- Weller Street flour silos are equipped with baghouses that exhaust at 650 cfm.

Franz – 6th Ave has a number of flour silos, the largest of which have a capacity of 240,000 lb of flour. The emissions from one of these flour silos with a 650 cfm baghouse (and assuming that the baghouse is emitting at the grain load limited in the Agency’s rule) would be:

$$(0.05 \text{ gr/scf}) \times (\text{lb}/7,000 \text{ gr}) \times (650 \text{ ft}^3/\text{min}) \times (60 \text{ min}/\text{hr}) \times (8760 \text{ hr}/\text{yr}) \times (\text{ton}/2000 \text{ lb})$$
$$= 1.22 \text{ tpy}$$

This worst case emission rate for the largest flour silos would not come close to the major threshold of 100 tons/year. Therefore it is clear that none of the silos at Franz – 6th Ave. require a CAM Plan.

4.2 National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63

A review of federal NESHAP was conducted to identify potentially applicable National Emissions Standards for Hazardous Air Pollutants (NESHAP). Based on this review, Franz 6th Ave.’s is not subject to any federal NESHAP.

- 40 CFR Part 63, Subpart DDDDD applies to boilers and process heaters located at facilities that are major sources of hazardous air pollutants (HAPs). Franz 6th Ave. is not a major source of HAP, so the rule is not applicable.
- 40 CFR Part 63, Subpart JJJJJ, applies to some boilers located at HAP area sources (National Emission Standards for Area Sources: Industrial/Commercial/Institutional Boilers and Process Heaters). Franz 6th Ave. is an area source for HAP. Therefore, this NESHAP would apply any boiler operated at the plant met the applicability criteria. However, 40 CFR Section 63.11195 specifies that gas-fired boilers as defined in 40 CFR Section 60.111237 are not subject to this NESHAP. Since Franz 6th Ave. burns only natural gas, the boilers used at the source meet the definition of gas-fired boiler and are not subject to this NESHAP.

4.3 Standards of Performance for New Stationary Sources, 40 CFR Part 60

A review of federal New Source Performance Standards (NSPS) was conducted to identify potentially applicable standards. Based on this review, Franz 6th Ave. is not subject to any federal NSPS.

5. Compliance History for December 1998 through August 2011

The compliance history for Franz 6th Ave. from December 2003 (issuance of the first renewal of Air Operating Permit No. 11285) until the current time is summarized below.

There were no Notices of Violation issued during this time period, and the Puget Sound Clean Air Agency has no open or outstanding Assurances of Discontinuance for Franz 6th Ave. A review of the Agency database found that no complaints have been received about Franz 6th Ave. from June 2003 to March 2011.

Compliance Status Reports (CSRs) issued to Franz 6th Ave. are listed in chronological order. At the time of this review, the Agency considers all matters listed below to be closed and has no open or unresolved enforcement actions with Franz 6th Ave.

5.1 Chronological Compliance History

CSR issued July 20, 2009 with mention of a verbal warning regarding the requirement to submit a Notice of Construction application for new plasma cutters. Franz 6th Ave. decided to return plasma cutters rather than proceed with the Notice of Construction process. Plasma cutters may have been eligible for exemption in accordance with 6.03 (b)(10).

CSR issued June 3, 2008 stating that no violations were observed during the June 3, 2009 inspection.

CSR issued May 10, 2007 stating that no violations were observed during the May 10, 2007 inspection.

CSR issued March 13, 2003 stating that no violations were observed during the February 13, 2003 inspection.

6. Emission Inventory

The latest emission inventory is listed in Attachment A to this Statement of Basis. The attached emission inventory includes a breakdown of the total annual emissions listed by chemical name, CAS number, and the point sources where the emissions originate. Table 1 summarizes the VOCs and ethanol emissions from Franz 6th Ave. for last five years of available data.

**TABLE 1: FRANZ 6TH AVE. REPORTED TOTAL VOC AND ETHANOL EMISSIONS
(TONS PER YEAR)**

Pollutant	2006	2007	2008	2009	2010
Total VOC	60	69	75	69	56
Ethanol	60	69	75	69	56

Tests on bakery ovens show that small amounts of acetate and formate, typically in the low parts per million (ppm) range, are also present in the off-gas. Further, most of the acetate is ethyl acetate, a VOC that contributes to the bakery odor (ethanol does not). By comparison, short-term concentrations during baking of high yeast bread at full operation yielded 1,000 to 4,300 mg/m³ of ethanol and 1 to 5 mg/m³ of the remaining VOC components. The source only reports ethanol emissions to the Agency, although the anaerobic fermentation process in yeast-leavened breads is also known to produce carbon dioxide, and small amounts of other alcohols, esters and aldehydes.

Franz 6th Ave. building and baking ovens are heated by natural gas only. Emissions of criteria pollutants arising from combustion from natural gas-fired units are well below reporting thresholds.

7. Explanation of Applicable Requirements

Applicable requirements are listed in several sections of the operating permit as discussed below. The permit lists only the requirements that the Agency has determined to be within the scope of the definition of “applicable requirements” under the air operating permit program. Franz 6th Ave. is legally responsible for complying with all applicable requirements of the operating permit and other requirements that do not fit the definition of “applicable requirements” found in Chapter 173-401 Washington Administrative Code (WAC).

Some of the applicable requirements contain monitoring, maintenance and recordkeeping that require detailed explanation in this statement of basis. The specific conditions are listed below, along with any necessary explanations in monitoring, maintenance and recordkeeping requirements.

7.1 How the tables in Section I work

Section I.A. contains requirements that are applicable on a facility-wide basis. Section I.B. contains requirements applicable only to specific emission units within the facility. . It should be noted here that all the requirements in Section I.A. apply to the specific emission units as well. If the monitoring, maintenance and recordkeeping method for any requirement in Section I.A. is more extensive for a specific emission unit, that requirement is repeated in Section I.B. with the additional monitoring, maintenance and recordkeeping requirements.

The tables in Section I of the AOP list all the local (Agency), state (Department of Ecology), and federal (EPA) emission limits and emission limiting operational requirements that apply to the facility and emission units within the facility. All requirements are federally enforceable unless they are identified in column two by the words “*STATE ONLY*.”

To simplify the permit, similar applicable requirements are grouped together in the table if the same monitoring and test methods were required. Facility-wide emission limits are not repeated for each emission unit unless a monitoring method is more extensive for a specific emission unit. However, all the requirements in Section I.A. do apply to the specific emission units.

The following information is contained in each column of the tables:

- The first column identifies the requirement. This column is for information only and not enforceable.
- The second column contains the actual rule citation for each individual requirement. This can be an Agency requirement from Regulation I, II, or III, a Department of Ecology requirement (WAC or RCW), or a federal requirement such as a New Source Performance Standard (NSPS) or a National Emission Standard for Hazardous Air Pollutants (NESHAP).
- The third column contains the adoption or effective date of the requirement. In some cases, the effective dates of the Federally Enforceable, or “SIP¹,” requirement and the Non-Federally Enforceable, or “State Only,” requirement are different because either the state has not yet submitted the regulation to the EPA for approval into the SIP or the EPA has not yet approved it. This will be true of recently amended state and local regulations. “*STATE ONLY*” adoption dates are in *italicized* font. When the EPA does approve the new

¹ “SIP” is an abbreviation for “State Implementation Plan” which is a plan for improving or maintaining air quality and complying with the Federal Clean Air Act. The Federal Clean Air Act requires states to submit these plans to the US EPA for its review and approval. This plan must contain the rules and regulations of the state agency or local air authority necessary to implement the programs mandated by Federal law. Once the EPA adopts the plan or elements of it, the plan and its requirements become “federally enforceable” by EPA. New or modified state or local rules are not federally enforceable until they are “adopted into the SIP” by the EPA.

requirement into the SIP, the old requirement will be replaced and superseded by the new requirement. This replacement will take place automatically, with no changes being made to the air operating permit until the next renewal. The new requirement will be enforceable by the EPA as well as the Agency from the date that it is adopted into the SIP, and the old requirement will no longer be an applicable requirement.

- The fourth column paraphrases the requirement. This column is for information only and the information contained in the column is not enforceable. The actual enforceable requirement is embodied in the requirement cited in the second and third columns.
- The fifth column, “Monitoring, Maintenance & Recordkeeping Method,” identifies the methods described in Section II of the permit. Following these methods is required to “reasonably assure continuous compliance”, and is an enforceable requirement of the permit. All inspections, tests, and other actions must be documented (the specific recordkeeping requirement for this is in Section V.O. of the permit).
- The sixth column, “Emission Standard Period,” identifies the averaging time for the emission standard and/or the minimum length of one reference method run.
- The last column, “Reference Test Method,” identifies the reference method associated with an applicable emission limit that is to be used if and when a source test is required. In some cases where the applicable requirement does not cite a test method, but a test method is applicable, one has been added in accordance with WAC 173-401-615 (see discussion of “gap-filling” in Section 7.2 of this document).

In the event of conflict or omission between the information contained in the fourth and sixth columns and the actual statute or regulation cited in the second column, the requirements and language of the actual statute or regulation cited shall govern. For more information regarding any of the requirements cited in the second and third columns, refer to the actual requirements cited.

7.2 How monitoring methods in Section II of the AOP are determined

The permit lists the applicable emissions standards and operating limits in tabular form in Section I of the AOP, with a reference to the applicable monitoring method. A full description of the monitoring method is contained Section II. State and local emission limits listed in the permit either have little or no ongoing monitoring methods included in the regulations. Therefore, “gap-filling” monitoring methods have been developed for these requirements, as provided under WAC 173-401-615(1)(b).

Whenever the Agency uses a “gap-filling” monitoring method, we determine the monitoring frequency using criteria contained in EPA’s April 30, 1999 Draft Periodic Monitoring Technical Reference Document. We consider “the five criteria” listed below in determining how often the facility should perform a monitoring activity: hourly, once per shift, daily, weekly, monthly, quarterly, annually, and so on. These five criteria are:

- **Initial compliance** A facility with history of compliance issues with standards and limits will be required to perform more frequent monitoring.
- **Margin of compliance** The monitoring method and frequency are designed so that the source will identify a problem early and take corrective action before a violation occurs.
- **Variability of process and emissions** A highly variable process may need more frequent watching than one that runs only intermittently, or one that runs continuously well below the maximum rate.
- **Environmental impacts of problems** More frequent inspections may be required for a process for which a maintenance problem is likely to result in emissions that would have a significant environmental impact.
- **Technical considerations** It is a requirement to perform routine maintenance on all equipment in accordance with an acceptable operation and maintenance (O&M) Plan. Frequently, it is sufficient to operate, maintain, and monitor equipment in accordance with manufacturer's instructions. Where such operations, maintenance, and monitoring has been found to be insufficient, the Agency has included gap-filling measures.

Section V.P, Data Recovery, addresses the amounts of data recovery required for monitoring requirements that were developed specifically for the permit. The requirements of the section only apply as noted in Section II of the permit and under no circumstances does this section apply if a specific underlying applicable requirement is more stringent.

In developing the data recovery requirements, the Agency considered the frequency of the monitoring and the nature of the information required to monitor. For monitoring required on a quarterly or less frequent basis, the data recovery requirements are 100%.

8. Explanation of Facility-wide Requirements

Section I.A of the permit contains the facility-wide emission limits. A discussion of the appropriateness of the monitoring method for assuring compliance with the requirements (if needed) and the basis for any grouping of requirements are provided below.

8.1 Requirement 1.A.2 - Opacity

Both WAC 173-400-040(1) and Puget Sound Clean Air Agency Regulation I, Section 9.03 standards are 20% opacity and apply to all stationary sources. Although the permit lists all these requirements together, Franz 6th Ave. must comply with each of these requirements.

The monitoring method is based on monthly visible emission inspections and quarterly facility-wide inspections. If visible emissions other than uncombined water are observed, Franz 6th Ave is required to take corrective action with 24 hours, record the opacity using the reference test method WDOE Method 9A, or shut down the unit or activity until it can be repaired. If Franz 6th Ave. corrects the visible emissions within 24 hours of initial observation or shuts down the

unit or activity within 24 hours until it is repaired or corrected, Franz 6th Ave. does not need to report the deviation under Section V.M. (Compliance Certifications) or Section V.Q. (Reporting). However, if Franz 6th Ave. does not take appropriate action within 24 hours, Franz 6th Ave. must report the incident as a deviation.

Initial compliance: None of the emission units currently at Franz 6th Ave. normally have visible emissions, nor are they likely to generate visible emissions except under the most unusual circumstances. Therefore, the Agency concludes that Franz 6th Ave. is generally in compliance with the opacity requirement and the margin of compliance is large. In addition, the monitoring method is designed so that Franz 6th Ave. will take corrective action before a violation occurs, further enhancing the compliance margin.

Variability of process and emissions: While many of the processes are variable or batch operations, the most likely cause of visible emissions would be a significant change in the process, one that would require approval from the Puget Sound Clean Air Agency, or major equipment failure. The specific emission units that are most likely to fail and have significant visible emissions, such as the fabric filters on flour silos, are addressed elsewhere in the permit.

Environmental impacts of problems: Observed opacity is generally related to emissions of particulate matter or finely divided liquid droplets. The manufacturing activities at Franz 6th Ave. typically do not generate significant quantities of particulate matter. Hence, the environmental impacts of the emissions are small. A maintenance problem is unlikely to result in emissions that would have a significant environmental impact.

Technical considerations: The emission units that are likely to generate visible emissions are addressed elsewhere in the permit.

8.2 Requirements 1.A.3 and 1.A.4– Particulate Matter

Puget Sound Clean Air Agency Regulation I, Section 9.09 limits particulate emissions to 0.05 gr/dscf from equipment used in a manufacturing process. WAC 173-400-060 limits particulate emissions to 0.1 gr/dscf from general process units (i.e., units using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion).

The monitoring method is based on monthly visual inspections of the facility for visible emissions, employing the same monitoring method at the same frequency, for the same reasons, as the opacity requirements in Requirement 1.A.2. The facility does not normally have particulate emissions from any of its equipment. Monitoring for visible emissions would identify particulate emissions, and would lead the facility to look for underlying problems that are causing the emissions. Recording of visible emissions is not necessarily a deviation of the particulate concentration standard because the threshold for observing visible emissions occurs at a particulate concentration of less than 0.05 gr/dscf. However, failure to take timely corrective action, as defined in the permit, is a deviation from the specific permit requirement and must be

reported to the Puget Sound Clean Air Agency.

8.3 Requirements 1.A.5– Particulate Matter from Combustion Sources

WAC 173-400-050(1) limits particulate emissions to 0.1 gr/dscf corrected to 7% O₂ from all combustion units (i.e., units using combustion for steam production or other process requirements, excluding open burning). Franz 6th Ave. burns only pipeline grade natural gas. If fuels are properly burned, Franz 6th Ave. is incapable of violating this standard while complying with the other requirements. Improper fuel burning that would result in high particulate emissions would also likely cause opacity problems and would be detected by the opacity monitoring requirement.

8.4 Requirements 1.A.6– Sulfur Dioxide

Both Puget Sound Clean Air Agency Regulation I, Section 9.07 and WAC 173-400-040(6) are equivalent requirements (SO₂ emissions not to exceed 1000 ppmv²), except for the second paragraph of the WAC, which is not in the Puget Sound Clean Air Agency regulation. The second paragraph of WAC 173-400-040(6), which is not federally enforceable, allows for exceptions to this requirement if the source can demonstrate that there is no feasible method of reducing the SO₂ concentrations to 1000 ppm. Since the Puget Sound Clean Air Agency's rules are more stringent, this exception is not available to Franz 6th Ave. and the second paragraph does not apply to Franz 6th Ave..

Franz 6th Ave. burns only pipeline grade natural gas in all combustion emission units. All the natural gas burned at Franz 6th Ave. must be pipeline quality, the content of which is regulated by the Washington Utilities and Transportation Commission to contain less than 2000 grains of sulfur per million cubic feet. 2000 grains of sulfur per million cubic feet (gr S/ft³ nat gas) is equivalent to approximately 3.4 parts of sulfur per million cubic feet of natural gas on a dry, volumetric basis (ppmdv S), as shown in the following calculation:

² “ppm” means “parts per million on a dry, volumetric basis.” Sometimes this is written as “ppmdv.” Stack gas is usually sampled through a probe placed somewhere in the middle of the stack cross-section. The moisture is removed from the gas stream as part of the sampling process. The stack gas sample is analyzed for the pollutant in question, with the lab results being calculated as cubic feet (or meters) of pollutant per million cubic feet (or meters) of dry stack gas. If you had a stack with 50% moisture that was running right at the 1,000 ppm SO₂ standard, you would have 1,000 cubic feet of SO₂ for every million cubic feet of dry stack gas. You would also have 1,000 cubic foot of SO₂ for every two million cubic feet of “wet” (as is) stack gas, which is 500 ppm. This is why it's important to know how stack sampling is done and why stack sampling and continuous emission monitoring methods are so specific.

$$\frac{2,000 \text{ gr S}}{1,000,000 \text{ ft}^3 \text{ nat. gas}} \times \frac{1 \text{ lb}}{7000 \text{ gr}} \times \frac{385 \frac{\text{ft}^3}{\text{mole S}}}{32 \frac{\text{lb}}{\text{mole S}}} = 3.44 \times 10^{-6} \frac{\text{ft}^3 \text{ S}}{\text{ft}^3 \text{ nat. gas}} \equiv 3.44 \text{ ppmdv S}$$

According to *Perry's Chemical Engineer's Handbook*, each cubic foot of natural gas requires approximately 10 cubic feet of air for combustion, yielding approximately 11 cubic feet of combustion exhaust gases, consisting mostly of nitrogen, water vapor, and carbon dioxide. The sulfur in the natural gas will almost all be converted to sulfur dioxide, with each cubic foot of sulfur producing the same volume of sulfur dioxide. Since each cubic foot of natural gas contains 3.44×10^{-6} cubic foot of sulfur, each cubic foot of stack exhaust will contain approximately 0.31 ppmvd SO₂ as shown below:

$$3.44 \times 10^{-6} \frac{\text{ft}^3 \text{ S}}{\text{ft}^3 \text{ nat. gas}} \times \frac{1 \text{ ft}^3 \text{ SO}_2}{1 \text{ ft}^3 \text{ S}} \times \frac{1 \text{ ft}^3 \text{ nat. gas}}{11 \text{ ft}^3 \text{ stack exhaust}} = 3.13 \times 10^{-7} \frac{\text{ft}^3 \text{ SO}_2}{\text{ft}^3 \text{ stack exhaust}} \text{ or } 0.31 \text{ ppmdv SO}_2$$

This estimated value is less than one-tenth of one percent of the 1,000 ppm SO₂ standard. Therefore, it is reasonable to assume that combustion units that are fired on natural gas cannot exceed the 1,000 ppm SO₂ limits in Puget Sound Clean Air Agency Regulation I, Section 9.07 and WAC 173-400-040(6). The other emission units are not capable of generating SO₂ emissions in excess of the standard as permitted. Therefore, the permit does not contain additional monitoring requirements for the natural gas usage.

8.5 Requirements 1.A.7– Hydrochloric Acid

Puget Sound Clean Air Agency Regulation I, Section 9.10 specifies that hydrochloric acid (HCl) emissions shall not exceed 100 ppm (dry) corrected to 7% O₂ for combustion sources. Since Franz 6th Ave. burns only pipeline grade natural gas, and the other processes do not use chlorine in a form likely to emit HCl, Franz 6th Ave. is incapable of violating this standard while complying with the other requirements in the permit. Therefore, the permit does not contain additional monitoring requirements.

8.6 Requirements 1.A.8– Nuisance

Puget Sound Clean Air Agency Regulation I, Section 9.11, WAC 173-400-040(5), and RCW 70.94.040 are similar requirements that address emissions that may be environmentally detrimental or cause a nuisance. All of these requirements have been grouped together because they are so similar in nature. The monitoring method is based on responding to complaints and general inspections to identify any emissions that are likely to be injurious to human health, plant or animal life, or property, or that unreasonably interfere with enjoyment of life and property. The Agency has determined that the as-needed complaint response in Section II.A.1(b) and quarterly inspections required in Section II.A.1(c) of the permit are sufficient to monitor for changes that would cause a fugitive emission or unexpected buildup of dust on the roadways and plant grounds. The basis for this determination is as follows:

- 1) Initial compliance. The Puget Sound Clean Air Agency has not received any complaints concerning the Franz 6th Ave. facility regarding fugitive dust or odor emissions over the past

five years. Therefore, the Agency concludes that Franz 6th Ave. is generally in compliance with the nuisance requirements.

- 2) Margin of compliance. The Agency has not observed nuisance problems, and the current operations are unlikely to cause nuisance problems. Therefore, the Puget Sound Clean Air Agency has determined that the margin of compliance is sufficient to only require quarterly inspections and response to complaints as necessary. The emission of fugitive dust or odor is unlikely to generate off-site fallout or complaints except under the most unusual circumstances.
- 3) Variability of process and emissions. Franz 6th Ave. does not have emission units that are likely to generate emissions that would cause a nuisance. In addition, Franz 6th Ave. is unlikely to install such emission units during the life of the permit.
- 4) Environmental impacts of problems. Nuisance emissions by their nature do not result in exceedances of federal emissions or ambient standards. By responding quickly to complaints and identifying problems before they cause complaints, the environmental impact of nuisances should be small.
- 5) Technical considerations. Catastrophic failure of a fabric filter attached to a flour silo is the likeliest cause of a nuisance causing a deviation at Franz 6th Ave.. The high efficiency fabric filters at Franz 6th Ave. are monitored at least monthly by Franz 6th Ave. Therefore, the chance of generating emissions that may cause a nuisance is minimized. The monitoring method is designed so that Franz 6th Ave. will take corrective action before a violation occurs. Failure to take timely corrective action, as defined by the monitoring method, is a deviation of the specific permit term. Taking corrective action does not relieve Franz 6th Ave. from the obligation to comply with the nuisance requirement itself.

8.7 Requirements I.A.9—I.A.10 – Fugitive Dust

WAC 173-400-040(3) addresses fugitive dust emissions for some activities, and WAC 173-400-040(8) requires reasonable precautions or reasonably available control technology (RACT) to control fugitive emissions. Agency Regulation I, Section 9.15 requires the use of reasonable precautions for fugitive dust and lists some examples of reasonable precautions. All the fugitive emission regulations have common monitoring methods of responding to complaints and looking for fugitive emissions.

Franz 6th Ave. conducts its manufacturing operations indoor, and all the roads and parking lots are paved. In the past five years, the Agency has not received any complaints about fugitive dust emissions. Therefore, the Agency determined the appropriate monitoring method for this requirement is quarterly fugitive dust and track-out inspections, quarterly facility-wide inspections, and as needed complaint response.

8.8 Requirement I.A.11 – Maintain Equipment

Agency Regulation I, Section 9.20 requires Franz 6th Ave. to maintain equipment in good working order. Section 9.20(a) applies to sources that received a Notice of Construction Order of Approval under Regulation I, Article 6. Section 9.20(b) applies to equipment not subject to Section 9.20(a). The Agency has determined that following the requirements of Section II provides sufficient monitoring criteria for compliance with Section 9.20(a) and 9.20(b). The section identifies both facility-wide criteria and specific criteria for the emission units and activities. In addition, the facility-wide inspections provide monitoring of the general effectiveness of Franz 6th Ave.'s Operation and Maintenance Plan. The Agency chose to list all of Section II as the monitoring method because many parts of Section II apply to several emission units and activities. Where there are specific monitoring requirements for specific emission units, the Agency has listed them in Section II.A.2. However, the Agency reserves the right to evaluate the maintenance of each piece of equipment to determine if it has been maintained in good working order.

8.9 Requirement I.A.12 – O&M Plan Requirements

In accordance with Agency Regulation I, Section 7.09(b), Franz 6th Ave. is required to develop and implement an Operation and Maintenance Plan (O&M Plan) to assure continuous compliance with Agency Regulations I, II, and III. The requirement specifies that the plan shall reflect good industrial practice, but does not define how to determine good industrial practice.

To clarify the requirement, the Agency added that in most instances following the manufacturer's operations manual or equipment operational schedule, minimizing emissions until the repairs can be completed and taking measures to prevent recurrence of the problem may be considered good industrial practice. The Agency also added language establishing criteria for determining if good industrial practice is being used. These may include, but are not limited to, monitoring results, opacity observations, review of operations and maintenance procedures, and inspections of the emission unit or equipment. The Agency added this wording in response to Washington State court decision, *Longview Fibre Co. v. DOE*, 89, Wn. App. 627 (1998), which held that similar wording was not vague and gave sufficient notice of the prohibited conduct.

Agency Regulation I, Section 7.09(b) also requires Franz 6th Ave. to promptly correct any defective equipment. However the underlying requirement in most instances does not define "promptly". For significant emission units and applicable requirements that Franz 6th Ave. has a reasonable possibility of violating or that a violation would cause an air quality problem, the Agency added clarification that "promptly" usually means within 24 hours. For many insignificant emission units and equipment not listed in the AOP, the meaning of "promptly" will vary because the emission sources and suitable pollution control techniques vary widely, depending on the contaminant sources and the pollution control technology employed. However, the permit identifies a means by which to identify if Franz 6th Ave. is following good industrial practice.

Franz 6th Ave. must report to the Agency any instances where it failed to promptly repair any defective equipment. Franz 6th Ave. has the right to claim certain problems were a result of an emergency or unavoidable.

Following these requirements demonstrates that Franz 6th Ave. has properly implemented the O&M Plan, but it does not prohibit the Agency or EPA from taking any necessary enforcement action to address violations of the underlying applicable requirements after proper investigation

8.10 Requirement I.A.13 – Odors

WAC 173-400-040(4) addresses odors. The monitoring method is based on responding to complaints and general inspections of the facility to identify emissions of odor-bearing contaminants. Receiving complaints does not necessarily mean Franz 6th Ave. is in violation of this requirement, since the regulation does not prohibit the emission of odors, but prohibits the emissions of odors if reasonable control measures are not employed. Complaints will trigger action by Franz 6th Ave. to investigate and prevent a violation. The Agency has not received odor complaints concerning Franz 6th Ave. The Agency has determined that responding to complaints within three working days is appropriate.

8.11 Requirement I.A.14 – Deposition of Particulate Matter

WAC 173-400-040(2) prohibits the emission of particulate matter from the facility to be deposited beyond the property line in sufficient quantity as to unreasonably interfere with the use and enjoyment of the property upon which the material is deposited. The monitoring method is based on responding to complaints and general inspections of the facility to identify any particulate emissions or deposition of particulate that may unreasonably interfere with the use and enjoyment of property. Receiving complaints does not necessarily mean Franz 6th Ave. is in violation of this requirement, but triggers action by the source to prevent a violation.

9. Explanation of Emission Unit Specific Requirements

Section I.B of the permit contains requirements that apply to specific emission units cited in the permit. As in Section 8 of this document, the basis for each grouping of requirements and a discussion of the appropriateness of the monitoring method for assuring compliance with the requirements (if needed) are provided below.

9.1 Emission Unit #1 – Direct Fired Baking Process

This emission unit includes the direct fired baking oven used in the baking process. The oven uses natural gas as its only fuel.

1) Natural Gas Fired Baker Perkins 53 Tray Oven (Heat Input Rating = 1,122,000 Btu/Hour),
The oven is not considered to be “fuel burning equipment” per the Regulation I definition of fuel burning equipment, because it does not produce hot air, hot water, steam, or other heated fluids by external combustion of fuel.

The monitoring method is based on visual inspections with the source taking action if visible emissions are noted, and on conducting maintenance as outlined in the facility's O&M Plan. Observing visible emissions is not necessarily a violation of the standard. The permit requires that Franz 6th Ave. take corrective action before a violation occurs and document such action.

9.2 Emission Unit #2 – Steam Generating Process and Indirect Fired Ovens

This emission unit includes boilers used for steam production and indirect fired baking ovens. These units use natural gas as their only fuel. For purposes of defining an “emission unit” in this permit, each unit listed below is considered a separate emission unit.

- 1) Natural Gas Fired Gabriel Boiler (Heat Input Rating = 7,000,000 Btu/Hour)
- 2) Natural Gas Fired Gabriel Boiler (Heat Input Rating = 7,000,000 Btu/Hour)
- 3) Natural Gas Fired Read 32 Tray Oven (Heat Input Rating = 2,250,000 Btu/Hour),
- 4) Natural Gas Fired Peterson 32 Tray Oven (Heat Input Rating = 2,250,000 Btu/Hour)

The monitoring method is based on visual inspections with the source taking action if visible emissions are noted, and on conducting maintenance as outlined in the facility's O&M Plan. Observing visible emissions is not necessarily a violation of the standard. The permit requires that Franz 6th Ave. take corrective action before a violation occurs and document such action.

9.3 Emission Unit #3- Flour Storage and Transfer

This emission unit includes equipment associated with flour storage and transfer.

- 1) Three flour storage silos with fabric breather bags on each flour storage silo.

For purposes of defining an “emission unit” in this permit, each silo with fabric breather bag is considered a separate emission unit.

The monitoring method is based on routine maintenance of the fabric breather bags such as checking for broken or plugged bags, broken ductwork, damaged seals or damaged hoppers. Since the filters are passively vented, they do not have pressure gauges to check.

In addition, the monitoring method is based on visual inspections with the source taking corrective action if any broken or plugged bags are observed, or ductwork, seals or hoppers integrity is found to require repair, or visible emissions are noted. Recording of visible emissions is not necessarily a violation of the grain loading standard. The permit requires that Franz 6th Ave. take corrective action before a violation occurs and document such action.

10. O&M Plan Requirements

Franz 6th Ave.'s O&M Plan shall include equipment operation and maintenance procedures specifying how Franz 6th Ave. will assure continuous compliance with Agency Regulations I, II and III. In most instances, following the manufacturer's operations manual or equipment

operational schedule, minimizing emissions until the repairs can be completed and taking measures to prevent recurrence of the problem may be considered good industrial practice.

Determination of whether good industrial practice is being used will be based on available information such as, but not limited to, monitoring results, opacity observations, review of operations and maintenance procedures, and inspections of the emission unit or equipment. Franz 6th Ave. shall use the results of the inspections required by this permit in its annual review of the O&M Plan.

11. Prohibited Activities

Some of the requirements Franz 6th Ave. identified in the operating permit application are included in Section III as prohibited activities. Since these activities are prohibited, routine monitoring of parameters is not appropriate. Instead, the Agency has listed these activities in this section to highlight that they cannot occur at the facility. Personnel that perform the facility-wide inspections, required in Section II of the permit, should be aware of these requirements and take appropriate action to investigate them and take corrective action if they find any evidence that any of these activities are being conducted.

12. Activities Requiring Additional Approval

Activities that require additional approval are included in Section IV of the permit. For new source review, the permit language has been simplified. Both the state (WAC 173-400-110 and Chapter 173-460 WAC) and Puget Sound Clean Air Agency (Regulation I, Article 6) new source review programs require approval to construct, install, establish, or modify an air contaminant source. All these requirements apply, but the language in these requirements has been incorporated into one section to simplify the permit language.

13. Standard Terms and Conditions

Requirements that are more general in nature are included in Section V, Standard Terms and Conditions. This section also contains the standard terms and conditions specifically listed in WAC 173-401-620.

14. Basis for Inapplicable Requirements

The requirements listed in Section VIII of Franz 6th Ave. air operating permit do not apply to the facility, or to the specific emissions units listed in the permit for the reasons listed below. The permit shield applies to all requirements so identified.

- Puget Sound Clean Air Agency Regulation I Section 9.08(a) is an inapplicable requirement because Franz 6th Ave. does not burn fuel oil and would have to get approval from Puget Sound Clean Air Agency first to do so.

- Puget Sound Clean Air Agency Regulation II is an inapplicable requirement because Franz 6th Ave. does not have any of the affected emission units and must get Puget Sound Clean Air Agency approval before installing any such equipment.
- Chapter 173-490 WAC is an inapplicable requirement because bakeries are not listed as affected sources so the rule does not apply.
- Chapters 173-470, 173-474, 173-475, 173-480 and 173-481 WAC are inapplicable requirements by definition in WAC 173-401-200(4)(xii).

15. Public Comments

The 30-day public comment period for the 2012 Air Operating Permit renewal started February 23, 2012 and ended March 26, 2012. Notices were published on the Agency's website, in the Seattle Times, and in the Daily Journal of Commerce. No public comments were received.

On April 25, 2012 the proposed 2012 Air Operating Permit renewal documents (permit and Statement of Basis) were sent to Laurie Kral, EPA Region 10, for EPA's 45 day review. The 45-day review period ended June 9, 2012. No comments were received.

16. Administrative Modification, June 27, 2016

On June 6, 2016, the Agency received an email requesting changing the responsible official to Rick Roberston. That change has been made.