

LANE REGIONAL AIR PROTECTION AGENCY

1010 Main Street
Springfield, OR 97477

**TITLE V OPERATING PERMIT
REVIEW REPORT**

For

United States Bakeries—dba Franz Family Bakeries, Springfield Division

Source Information:

SIC	2051
NAICS	31182

Source Categories (Part and code)	B - 8
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Compliance and Emissions Monitoring Requirements:

Unassigned emissions	NA
Emission credits	NA
Compliance schedule	NA
Source test [date(s)]	NA

COMS	NA
CEMS	NA
Ambient monitoring	NA

Reporting Requirements

Annual report (due date)	February 15
Emission fee report (due date)	February 15
SACC (due date)	July 30
Quarterly report (due dates)	NA

Monthly report (due dates)	NA
Excess emissions report	Immediately
Other reports	Semi-annual

Air Programs

NSPS (list subparts)	NA
NESHAP (list subparts)	CCCCC
CAM	NA
Regional Haze (RH)	NA
Synthetic Minor (SM)	NA
Part 68 Risk Management	NA
Title V	X
ACDP (SIP)	X

Major HAP source	NA
Federal major source (250 tpy)	NA
New Source Review (NSR)	NA
Prevention of Significant Deterioration (PSD)	NA
Acid Rain	NA
Clean Air Mercury Rule (CAMR)	NA

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LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

AQMA	Air Quality Management Area	MM	million
ASTM	American Society of Testing and Materials	MMBtu	million British thermal units
BDT	bone dry ton	NA	not applicable
CAM	Compliance Assurance Monitoring	NESHAP	National Emission Standard for Hazardous Air Pollutants
CEMS	continuous emissions monitoring system	NO _x	oxides of nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standard
CMS	continuous monitoring system	NSR	New Source Review
CO	carbon monoxide	O ₂	Oxygen
COMS	continuous opacity monitoring system	OAR	Oregon Administrative Rules
DEQ	Oregon Department of Environmental Quality	ORS	Oregon Revised Statutes
dscf	dry standard cubic feet	O&M	operation and maintenance
EF	emission factor	Pb	lead
EPA	United States Environmental Protection Agency	PCD	pollution control device
EU	emissions unit	PM	particulate matter
FCAA	Federal Clean Air Act	PM ₁₀	particulate matter less than 10 microns in size
GDF	gasoline dispensing facility	PM _{2.5}	particulate matter less than 2.5 microns
gr/dscf	grains per dry standard cubic feet	PSD	Prevention of Significant Deterioration
GHG	greenhouse gas	PSEL	Plant Site Emission Limit
HAP	hazardous air pollutant	SACC	Semi Annual Compliance Certification
ID	identification code	SO ₂	sulfur dioxide
I&M	inspection and maintenance	ST	source test
LRAPA	Lane Regional Air Protection Agency	VE	visible emissions
MB	material balance	VMT	vehicle mile traveled
Mlb	1000 pounds	VOC	volatile organic compound

INTRODUCTION

1. This is the review for the issuance of an initial Title V permit for the United States Bakery—dba as Franz Family Bakery, Springfield ("Franz Bakery") facility located at 2000 Nugget Way in Springfield, Oregon. This facility is a new major source for Title V as of September 2010 when it received a modified air contaminant discharge permit (ACDP) that removed the restrictions on its potential to emit. The Title V permit proposed for Franz Bakery will contain emission limits, or plant site emission limits, approved and issued with that ACDP.
2. In accordance with OAR 340-218-0120(1)(f), this review report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.

PERMITTEE IDENTIFICATION

3. Franz Bakery is a commercial bakery whose products are bread, rolls, buns and croutons. It has a Standard ACDP and is now applying to be permitted and operate as a Title V facility.

FACILITY DESCRIPTION

4. The facility equipment is arranged in two (2) breadmaking process lines each equipped with a baking oven. The processes consist of mixing flour, water, sugar and yeast into a dough, allowing it to rise, followed by forming, baking, cooling and packaging of the product. There is also one dryer where bread is dried for croutons but this natural gas-fired device has a heat input of 750,000 Btu/hr, is considered categorically insignificant, and so not further addressed in this document.
5. The use of yeast results in the emission of volatile organic compounds (VOC). The yeast added to the bread dough generates ethanol, a VOC, during the fermentation (rising) stages of breadmaking. This VOC is emitted from the baking ovens. The amount of VOC emitted is directly proportional to the production rate and product mix.
6. Other emission sources are the natural gas combustion in the baking ovens and oil heater, which emit oxides of nitrogen (NOx), carbon monoxide (CO) and trace amounts of hazardous air pollutants (HAPs). Particulate emissions from the flour storage silos and dry ingredient handling are generally considered negligible due to baghouse control and good housekeeping practices.
7. The facility has a gasoline dispensing facility (GDF) with one (1) 10,000 gallon above ground storage tank equipped with submerged fill.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

8. The sources or emissions units (EU) at this facility are the following:

EU-1	Bulk Flour Silos equipped with dust collectors
EU-2	7.5 MMBtu/hr Thermal Oil System, natural gas fired
EU-3	12 MMBtu/hr Bread Oven, Process Line 1
EU-4	6.1 MMBtu/hr Bun Oven, Process Line 2
EU-5	Gasoline Dispensing Facility (GDF)
AI	Aggregate Insignificant Activities consisting of VOC from combustion and GDF

9. Categorically insignificant activities at this facility may include the following:

- Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under OAR Chapter 340, Divisions 200 through 268, excluding Divisions 248 and 262, or less than 0.1% by weight of any carcinogen listed in the U.S. Department of Health and Human Service's Annual Report on Carcinogens when usage of the chemical mixture is less than 100,000 pounds/year
- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene, and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr
- Natural gas and propane burning equipment rated at less than or equal to 2.0 million Btu/hr
- Office activities
- Food service activities
- Janitorial activities
- Personal care activities
- Grounds keeping activities including, but not limited to building painting and road and parking lot maintenance
- On-site recreation facilities
- Instrument calibration
- Maintenance and repair shop
- Automotive repair shops or storage garages
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems
- Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated vacuum producing devices but excluding research and development facilities
- Temporary construction activities
- Warehouse activities
- Accidental fires
- Air vents from air compressors
- Air purification systems
- Continuous emissions monitoring vent lines
- Demineralized water tanks
- Pre-treatment of municipal water, including use of deionized water purification systems
- Electrical charging stations
- Fire brigade training
- Instrument air dryers and distribution
- Process raw water filtration systems
- Fire suppression
- Blueprint making
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids
- On-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet of vehicles
- Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment
- Pressurized tanks containing gaseous compounds

- Fire suppression and training
- Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils
- Health, safety, and emergency response activities
- Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by LRAPA
- Oil/water separators in effluent treatment systems

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING

10. Air Contaminant Discharge Permit (ACDP) Requirements and Conditions: All permit requirements and conditions in the existing ACDP have been included in the Title V permit, except the following condition that will no longer apply:

ACDP Condition 2: "The permittee must obtain a Title V operating permit before increasing emissions above major source emission rate thresholds. [OAR 340-218-0020(3)(c)]"

The issuance of a Title V permit satisfies the above ACDP Condition 2. With a Title V permit, a permittee may emit above the "major source emission rate thresholds" of 100 tons per year. In this case, the Title V permit will allow the permittee to emit up to 137 tons VOC per year. The facility is limited to that level by plant site emission limits in Title V Permit Condition 17.

Facility-wide Requirements:

11. Title V Permit Condition 4 sets 'reasonable precautions' to minimize fugitive dust, visible particulate matter for this facility. Condition 5 requires the permittee to conduct periodic visible emission surveys for the presence of visible particulate and, should visible emissions occur, take corrective action.
- 11.a. Conditions 6 and 7 limit the potential for creating a public nuisance from odors and large-size (fallout) particulate matter. Monitoring for these conditions is the maintenance of a complaint log and complaint response/resolution (Condition 8).

Federal Requirements:

12. Accidental Release Prevention (Part 68): Title V Permit Condition 9 has standard language related to the Federal Risk Management Planning program (40 CFR Part 68). Should the material storage rates at this facility subject this facility to 40 CFR 68, it must satisfy all the applicable risk management requirements, including the development of a risk management plan.
13. National Emission Standards for Hazardous Air Pollutants (NESHAP): The GDF at this facility is subject to and is in compliance with the area source NESHAP regulation for gasoline dispensing facilities in 40 CFR Part 63, Subpart CCCCC. The amount of gasoline dispensed at the GDF is in the region of 1200 gallons per month. The GDF is equipped with a submerged fill pipe as required. Other requirements include good housekeeping and recordkeeping. The applicable NESHAP requirements are in Title V Permit Conditions 13, 14 and 15. (LRAPA 44-170 through 44-290 mirrors the federal requirements).
14. Air Quality Attainment Status for Facility Location: The facility is located in a nonattainment area for PM₁₀. However, no additional requirements apply because actual PM₁₀ emissions are below the 15 tons per year significant emission rate (SER) in LRAPA Title 12 for this pollutant.
- 14.a. Title V Permit Condition 17 has maximum allowable pollutant levels; the facility will be permitted at a potential to emit 137 tons VOC per year. This makes Franz Bakery a major source

for the purposes of Title V. However, because allowable pollutant levels are less than 250 tons per year, and as bakeries are not a listed source category that triggers the federal prevention of significant deterioration (PSD) at 100 tons per year, the facility is not federal major source for PSD.

LRAPA Requirements:

15. Title V Permit Conditions 10 and 11 limit particulate and visible emissions to 20% opacity and 0.1 gr/dscf, respectively. The combustion sources at the facility have low design firing rates and the flour silos are controlled, hence compliance with these limits is expected to continue. The permittee must periodically survey the facility site for visible particulate emissions including EPA Method 22 and Method 9 visible emission observations. Particulate matter source testing is not warranted for the mass of particulate and type of emission units at this facility.

Insignificant activities:

16. The insignificant emission units listed in above item 9 may be present at the facility. The Federal and Oregon Title V programs have determined that these types of units have insignificant emissions and comply with general facility wide requirements listed in the Title V permit.

PLANT SITE EMISSION LIMIT

17. Below is a table that summarizes the baseline emission rate, netting basing and plant site emission limits (PSEL) for this facility. The Title V permit issuance does not result in any emission changes. The values in the summary table are taken from the most recent ACDP, which was issued on September 3, 2010. However, the netting basis is being corrected from that developed in the review report for that ACDP permit. The netting basis for those pollutants set at the Generic PSEL levels should not have been increased, but set to zero. The netting basis is corrected to show the amount of emissions available to the facility from its baseline before determining the increase assessed against a significant emission rate (SER). The corrected values are those shown in the following table.
18. A PM_{2.5} emissions baseline of one (1) tons per year is set for controlled particulate that remains fairly constant regardless of production rate. Hence, for any applicable baseline period the operations at this facility particulate matter (PM, PM₁₀ and PM_{2.5}) emissions are assumed to be one (1) tons per year.

Pollutant	Baseline (tons per year)	Corrected Netting Basis (tons per year)	Annual PSEL issued on September 3, 2010 (tons per year)
VOC	98	98	137
PM	1	1	24
PM ₁₀	1	1	14
PM _{2.5}	1	1	9
SO ₂	0	0	NA
NO _x	0	0	39
CO	0	0	99

19. The "annual" plant site emission limit for VOC applies to any 13 consecutive 4-week periods and the "annual" plant site emission limits for all other pollutants apply to any 12 consecutive calendar month periods.
20. VOC, the principle pollutant emitted from this facility, are estimated based on an EPA empirical emission factor equation derived from testing data of commercial bakeries (yeast-raised bread) (ref. EPA AP-42 section 9.9.6 and EPA 453/R-92-017, Dec. 1992). The Title V Permit Conditions 19 and 20 require the permittee to use this method to calculate its VOC emission for the bread-making operation. The calculation is:

$$\text{VOC emission factor (EF)} = 0.95Y_i + 0.195t_i - 0.51S - 0.86t_s + 1.90$$

where:

VOC EF is in pounds VOC per ton of baked bread (lb/ton)

and:

- Y_i = initial baker's percent of yeast
- t_i = total yeast action time in hours
- S = final (spike) baker's percent of yeast
- t_s = spiking time in hours

21. To demonstrate emission compliance, the facility must track each process parameter needed in the above equation per product type (ex. bread, buns, and rolls). Recordkeeping requires calculation of ongoing emissions on a daily, weekly, and annual basis for each bread type (Title V Permit Condition 22). LRAPA reviews onsite recordkeeping and the annual emissions report submittals for compliance.
22. In addition to the VOC from bread baking, there are emissions from the combustion of natural gas. See attached Emissions Detail Sheet for more detail.

Significant Emission Rate (SER) Analysis:

23. The facility has a 1978 VOC baseline and netting basis of 98 tons per year. At the 137 tons VOC per year PSEL, the net increase in emissions at the facility is 39 tons per year. This remains below the 40 tons VOC per year significant emission rate (SER) (LRAPA Title 12, Table 2 and LRAPA Title 42).
24. The PSEL for all other pollutants are one (1) minus the significant emission rate for that pollutant (Generic PSEL level), hence the significant emission rate for those pollutants have not been exceeded.

HAZARDOUS AIR POLLUTANTS (HAPS)

25. This facility is not a 'major source' of HAPs because estimated HAPs emissions are below 10 tons per year for any single HAP and 25 tons per year for total HAPs. However, the facility is considered an 'area source' under the Federal NESHAPS (see above 13). Emissions factors for estimating HAP emissions are shown in the attached Emission Detail Sheet.

Hazardous Air Pollutants	Potential Emissions (tons per yr)
Acetaldehyde	1.9
Hexane	0.2
Total HAPs	2.1 tons/yr

PERMIT AND COMPLIANCE HISTORY

26. The facility obtained a modified ACDP on September 3, 2010 for the emission rates contained in the Title V permit.
27. This facility is regularly inspected and has been found in compliance with its permit and LRAPA rules. There has been no enforcement action taken against this facility; LRAPA has not issued any violation notices to this facility.

PUBLIC NOTICE

This permit was on public notice from **March 30, 2011** to **April 30, 2011**. No comments were submitted during the comment period. No public hearing was requested by 10 or more individuals or one person representing a group of 10 or more individuals. The proposed permit was sent to EPA for a 45-day review period. LRAPA requested and EPA agreed to an expedited review of 5 days because there were no substantive or adverse comments during the comment period. In any event, the public will have 105 days (45-day EPA review period plus 60 days) from the date the proposed permit was sent to EPA to appeal the permit with EPA. The permit was issued following EPA's review.

SL/cmw
05/25/2011

Natural Gas Throughput

Emission Unit	Max Rate (MMBtu/hr)	Conversion cf/Btu	Max Rate in (cf/hr)	Max hours (hr/yr)	Max Usage (MMcf/yr)
Bread Oven	12	1030	11650.5	8760	102.1
Bun Oven	6.1	1030	5922.3	8760	51.9
Thermal Oil System	7.5	1030	7281.6	8760	63.8
Total	25.6	1030	24854.4	8760	217.7

Natural Gas Combustion - Criteria Pollutants

Pollutant	Emission Factor (lb/MMcf)	Emission Factor ^(a) (lb/therm)	Max Usage (MMcf/yr)	Emission (lb/yr)	Emission (tpy)
PM	2.5	0.00025	218.1	545.3	0.3
PM ₁₀	2.5	0.00025	218.1	545.3	0.3
SO ₂	1.7	0.00017	218.1	370.8	0.2
NOx	100	0.010	218.1	21810.0	10.9
CO	84	0.0084	218.1	18320.4	9.2
VOC	5.5	0.00055	218.1	1199.6	0.6

Emission Factors Ref. AP-42, Table 1.4-3
 therm = 100 cf

^(a) conversion to therms provided for the purposes for Permit Condition 14; therms are units of a natural gas utility bill

Natural Gas Combustion - Greenhouse Gas (GHG)

Emission Unit	Max Rate (MMBtu/hr)	Emission Factor ^(a) (kg CO ₂ e/MMBtu)	Conversion (metric ton/kg)	Max hours (hr/yr)	GHG (metric ton/yr)
Bread Oven	12	53	0.001	8760	5571.4
Bun Oven	6.1	53	0.001	8760	2832.1
Thermal Oil System	7.5	53	0.001	8760	3482.1
Total	25.6	53	0.001	8760	11885.6

Emission Factor Ref. EPA Reporting Rule Draft

^(a) conversion to therms provided for the purposes of Permi Condition 14; therms are units of a natural gas utility bill
 53 kg CO₂e/MMBtu = 0.0053 metric tons CO₂e/therm

Gasoline Dispensing Facility (GDF) - VOC

VOC Emission Factor AP-42 and CARB
Submerged Fill (above ground tank)

10.0 lb/1000 gals
7.5 lb/1000 gals
10.0 lb/1000 gals
0.7 lb/1000 gals
28.2 lb/1000 gals (or 28.2 lbs/Mgal)

Williams Bakery Throughput = 1700 gals/mo (or 1.7 Mgals/mo)
12 mo/yr
20400 gals/yr (or 20.4 Mgals/yr)

VOC emissions (tpy) = $28.2 \text{ lbs/Mgal} * 20.4 \text{ Mgals/yr} / 2000 \text{ tons/lb} = 0.3 \text{ tpy}$

Hazardous Air Pollutant assume worst case, 2% vapor content benzene

GDF Benzene $0.3 \text{ tpy} * 0.02 = 0.01 \text{ tpy}$ (or 20 lb/yr)

Total HAPS

	Total HAPS (tpy)
Natural Gas Combustion	0.2
Breadmaking	1.9
GDF	0.01
Total	2.1

VOC the Criteria Air Pollutant from Bread Making

VOC emissions using the following EPA emission factor calculation (ref. EPA AP-42 section 9.9.6 and EPA 453/R-92-017, Dec. 1992):

$$\text{VOC emission factor (EF)} = 0.95Y_1 + 0.195t_1 - 0.51S - 0.86t_s + 1.90$$

where:

VOC EF is in pounds VOC per ton of baked bread (lb/ton)

and:

- Y₁ = initial baker's percent of yeast
- t₁ = total yeast action time in hours
- S = final (spike) baker's percent of yeast
- t_s = spiking time in hours

SVOC_b = [VOC EF_b (from above calculation)] * [tons baked_b] where "b" represents each batch of bread/bun made
 VOC emissions from bread baking not to exceed 136 tpy when considering the VOC from natural gas combustion

Hazardous Air Pollutants - Bread Making*

Pollutant	Emission Factor		Emission	
	(lb/lb VOC)	(tpy)	lb/yr	(tpy)
Acetaldehyde	0.014	136	3808	1.9

* HAP emission factor reference is San Diego Air Pollution Control District, Baking Operations, non-combustion emission from fermentation, uncontrolled, B01, 1999

Particulate Emissions - Bulk Silos - Material Transfer*

Emission Unit	Max Exhaust		Emission Factor		Conversion Factors		PM ₁₀ (lb/yr)	PM ₁₀ (tpy)
	(acfm)	Number of Exhaust Points	(gr/acf)	(lb/gr)	(min/hr)	(hr/yr)		
Flour Silos (7)	1060	7	0.01	1/7000	60.00	8760	5571.4	2.8

* PM₁, PM_{2.5} = PM₁₀ assumption based on the use of collection device