

217/785-1705

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - NSPS and NESHAP SOURCE -
REVISED

PERMITTEE

FONA International, Inc.
Attn: William Churchwell
1900 Averill Road
Geneva, Illinois 60134

Application No.: 08050037

I.D. No.: 089035ACB

Applicant's Designation:

Date Received: July 24, 2012

Subject: Food Flavoring

Date Issued: October 9, 2012

Expiration Date: October 20, 2015

Location: 1900 Averill Road, Geneva, Kane County, 60134

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of:

Seven (7) Spray Dryers Controlled by Scrubbers and a Regenerative Thermal Oxidizer (RTO) (1, 2, 3, 5, 6, SDA, and SDB);
One (1) Ribbon Blender with Dust Collector;
One (1) Blending Mixing System;
Four (4) Blending Tanks;
Two (2) Blending Reactors;
One (1) Shear Mixer Tank;
Two (2) Blending Tanks;
One (1) Gum Compounding Process Controlled by Dust Collector; and
One (1) 1462 HP Natural Gas-powered Non-Emergency Generator (Generator 1)

pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for Volatile Organic Material (VOM)). As a result, the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to initial issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permit(s) for this location.

- 2a. Generator 1 is subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines, 40 CFR Part 60, Subparts A and JJJJ. The Illinois EPA is administering the NSPS in Illinois on behalf of the United States EPA under a delegation agreement. Pursuant to 40 CFR 60.4230(a), the provisions of 40 CFR 60 Subpart JJJJ are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in 40 CFR 60.4230(a)(1) through (6).
- i. For the purposes of 40 CFR 60 Subpart JJJJ, the date that construction commences is the date the engine is ordered by the owner or operator. Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:
 - A. on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or
 - B. on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).
 - ii. The provisions of 40 CFR 60.4236 are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.
- b. Pursuant to 40 CFR 60.4233(e), owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to 40 CFR 60 Subpart JJJJ for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to 40 CFR 60 Subpart JJJJ, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

Table 1 to Subpart JJJJ of PART 60- NO_x, CO, AND VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission Standards ^a					
			g/HP-Hour			ppmvd at 15% O ₂		
			NO _x	CO	VOC ^d	NO _x	CO	VOC ^d
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP ≥ 500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60

- ^a Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O₂.
- ^d For purposes of 40 CFR 60 Subpart JJJJ, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.
- c. Pursuant to 40 CFR 60.4233(h), owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in 40 CFR 60.4233(e).
- d. Pursuant to 40 CFR 60.4236(a), after July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in 40 CFR 60.4233.
- 3. This permit is issued based on Generator 1 being subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63 Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c)(1), a new or reconstructed stationary RICE located at an area source must meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR Part 60 Subpart IIII, for compression ignition engines or 40 CFR Part 60 Subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under 40 CFR Part 63.
- 4a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.
- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
- c. Pursuant to 35 Ill. Adm. Code 212.321(a), except as further provided in 35 Ill. Adm. Code Part 212, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process

emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).

5. Pursuant to 35 Ill. Adm. Code 214.301, except as further provided by 35 Ill. Adm. Code Part 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.
- 6a. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G (Use of Organic Material) shall apply only to photochemically reactive material.
- b. Pursuant to 35 Ill. Adm. Code 218.302(a), emissions of organic material in excess of those permitted by 35 Ill. Adm. Code 218.301 are allowable if such emissions are controlled by flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water.
- c. The seven spray dryers and the flavor mixing and blending process are subject to 35 Ill. Adm. Code 218 Subpart TT (Other Emission Units). Pursuant to 35 Ill. Adm. Code 218.986, every owner or operator of an emission unit subject to 35 Ill. Adm. Code 218 Subpart TT shall comply with the requirements of 35 Ill. Adm. Code 218.986(a), (b), (c), (d), or (e) below:
 - i. Emission capture and control equipment which achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit; or
 - ii. For coating lines, the daily-weighted average VOM content shall not exceed 0.42 kg VOM/l (3.5 lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied during any day. Owners and operators complying with 35 Ill. Adm. Code 218.986 are not required to comply with 35 Ill. Adm. Code 218.301.
 - iii. Any leaks from components subject to the control requirements of 35 Ill. Adm. Code 218 Subpart TT shall be subject to the following control measures by March 15, 1995:

Repair any component from which a leak of VOL can be observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found, unless the leaking component cannot be repaired until the next process unit shutdown, in which case the leaking component must be repaired before the unit is restarted.

7. This permit is issued based on Generator 1 not being subject to the requirements of 35 Ill. Adm. Code Part 217 Subpart Q (Stationary Reciprocating Internal Combustion Engines And Turbines) because the potential to emit for NO_x from this source is less than 100 tons per year.
8. Pursuant to 35 Ill. Adm. Code 218.980(d), no limits under 35 Ill. Adm. Code 218 Subpart TT shall apply to emission units with emissions of VOM to the atmosphere less than or equal to 2.3 Mg (2.5 tons) per calendar year if the total emissions from such emission units not complying with 35 Ill. Adm. Code 219.986 does not exceed 4.5 Mg (5.0 tons) per calendar year.
9. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 10a. Pursuant to 40 CFR 60.4234, owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine.
 - b. Pursuant to 40 CFR 60.4243(b), if you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in 40 CFR 60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in 40 CFR 60.4243(b) (1) and (2).
 - i. Purchasing an engine certified according to procedures specified in 40 CFR 60 Subpart JJJJ, for the same model year and demonstrating compliance according to one of the methods specified in 40 CFR 60.4243(a).
 - ii. Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in 40 CFR 60.4233(d) or (e) and according to the requirements specified in 40 CFR 60.4244, as applicable, and according to 40 CFR 60.4243(b) (2) (i) and (ii).

If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial

performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

- c. Pursuant to 40 CFR 60.4243(e), owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233.
 - d. Pursuant to 40 CFR 60.4243(g), it is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.
- 11a. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
- b. The regenerative thermal oxidizer (RTO) shall be in operation at all times when any of the associated dryers are in operation and complying with 35 Ill. Adm. Code 218.986(a).
 - c. The regenerative thermal oxidizer combustion chamber shall be preheated to the temperature at which compliance was demonstrated during the most recent performance test or to at least the manufacturer's recommended temperature of 1,400°F in the absence of a compliance test. This temperature shall be maintained during operation of the associated dryers.
 - d. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the scrubbers and the regenerative thermal oxidizer such that the scrubbers and the regenerative thermal oxidizer are kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
 - e. The dryers (except Spray Dryer No. 2), the regenerative thermal oxidizer, and Generator 1 shall only be operated with natural gas as the fuel. The use of any other fuel in the dryers, the regenerative thermal oxidizer, or Generator 1 requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 12a. Emissions and operation of the flavoring equipment (except for the gum compounding process) shall not exceed the following limits:

i. Production rate and material usage:

<u>Emission Unit</u>	Process Rate/Usage		
	<u>(Lbs/Hr)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Dryer 1	100.0	43.8	438
Dryer 2	25.0	11.0	110
Dryer 3	150.0	65.7	657
Dryers 5 and 6 (Combined)	600.0	262.8	2,628
Blending	1,025.6	320.0	3,200
Dryers SDA and SDB (Combined)	50.0	22.0	220

ii. PM and VOM emissions:

<u>Emission Unit</u>	PM Emissions			VOM Emissions		
	<u>(Lb/Hr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>	<u>(Lb/Hr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Dryer 1	0.55	0.24	2.41	0.48	0.21	2.10
Dryer 2	0.25	0.11	1.08	0.13	0.06	0.57
Dryer 3	0.64	0.28	2.79	0.69	0.30	3.02
Dryers 5 & 6	1.34	0.59	5.85	0.59	0.29	2.58
Blending	1.78	0.56	5.55	0.23	0.10	1.01
Dryers SDA & SDB	0.55	0.24	<u>2.41</u>	0.26	0.11	<u>1.14</u>
		Totals:	<u>20.09</u>			<u>10.42</u>

The limits on PM emissions are based on the maximum hourly production rate at the maximum hours of operation (8,760 hours/year for the dryers and 6,240 hours for the blending operation) and the allowable PM emission rates pursuant to 35 Ill. Adm. Code 212.321. The limit for VOM emissions are based on the latest stack test of the dryers prior to the RTO, and overall reduction of VOM emissions by at least 90% (capture system and destruction of VOM by the RTO).

b. Emissions and operation of the fuel combustion emission units (dryers and the RTO) shall not exceed the following limits:

i. Natural Gas Usage: 7.89 mmscf/month, 78.84 mmscf/year.

ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(Lbs/mmscf)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84.0	0.33	3.31
Nitrogen Oxides (NO _x)	100.0	0.39	3.94
Particulate Matter (PM)	7.6	0.03	0.30
Sulfur Dioxide (SO ₂)	0.6	0.01	0.02
Volatile Organic Material (VOM)	5.5	0.02	0.22

These limits are based on the maximum fuel usage and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Emissions from and operation of Generator 1 shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(lb/mmscf)</u>	<u>(lbs/hr)</u>	<u>(Ton/Yr)</u>
Carbon Monoxide (CO)	415.7	4.73	4.73
Nitrogen Oxides (NO _x)	242.6	2.76	2.76
Particulate Matter (PM)	9.9871	0.11	0.11
Sulfur Dioxide (SO ₂)	0.588	0.01	0.01
Volatile Organic Material (VOM)	28.1	0.32	0.32

These limits are based on the maximum fuel use (22.754 mmscf/year), 2,000 hours/year of operation, the manufacturers test data for NO_x(2.76 lbs/hr), CO (4.73 lbs/hr) and VOM (0.32 lbs/hr), and standard emission factors (Table 3.2-2, AP-42, Fifth Edition, Volume I, Supplement F, August 2000) for PM, and SO₂.

- d. This permit is issued based on negligible emissions of particulate matter from the gum compounding process controlled by dust collector. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- e. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
13. This permit is issued based on the Potential to Emit (PTE) for Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act from the source being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program (CAAPP) Permit.
- 14a. Pursuant to 40 CFR 60.8(a), at such other times as may be required by the Illinois EPA or USEPA under section 114 of the Clean Air Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Illinois EPA or USEPA a written report of the results of such performance test(s).
- b. Pursuant to 40 CFR 60.8(b), performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart of 40 CFR Part 60 unless the Illinois EPA or USEPA:
- i. Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology;
 - ii. Approves the use of an equivalent method;

- iii. Approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance;
 - iv. Waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Illinois EPA's or USEPA's satisfaction that the affected facility is in compliance with the standard; or
 - v. Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Illinois EPA's or USEPA's authority to require testing under section 114 of the Clean Air Act.
- c. Pursuant to 40 CFR 60.8(c), performance tests shall be conducted under such conditions as the Illinois EPA or USEPA shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Illinois EPA or USEPA such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- d. Pursuant to 40 CFR 60.8(d), the owner or operator of an affected facility shall provide the Illinois EPA or USEPA at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Illinois EPA or USEPA the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Illinois EPA or USEPA as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Illinois EPA or USEPA by mutual agreement.
- e. Pursuant to 40 CFR 60.8(e), the owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:
- i. Sampling ports adequate for test methods applicable to such facility. This includes:
 - A. Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test 1 methods and procedures; and

- B. Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
 - ii. Safe sampling platform(s).
 - iii. Safe access to sampling platform(s).
 - iv. Utilities for sampling and testing equipment.
- f. Pursuant to 40 CFR 60.8(f), unless otherwise specified in the applicable subpart of 40 CFR Part 60, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard under 40 CFR Part 60. For the purpose of determining compliance with an applicable standard under 40 CFR Part 60, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Illinois EPA's or USEPA's approval, be determined using the arithmetic mean of the results of the two other runs.
- 15a. Pursuant to 40 CFR 60.4244, owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in 40 CFR 60.4244(a) through (f).
 - b. Pursuant to 40 CFR 60.4244(a), each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in 40 CFR 60.8 and under the specific conditions that are specified by Table 2 to 40 CFR 60 Subpart JJJJ.
 - c. Pursuant to 40 CFR 60.4244(b), you may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.
 - d. Pursuant to 40 CFR 60.4244(c), you must conduct three separate test runs for each performance test required in 40 CFR 60.4244, as specified in 40 CFR 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.
 - e. Pursuant to 40 CFR 60.4244(d), to determine compliance with the NO_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 1 of 40 CFR 60.4244.

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 1})$$

Where:

ER = Emission rate of NO_x in g/HP-hr.

C_d = Measured NO_x concentration in parts per million by volume (ppmv).

1.912×10⁻³ = Conversion constant for ppm NO_x to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

- f. Pursuant to 40 CFR 60.4244(e), to determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of 40 CFR 60.4244.

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 2})$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164×10⁻³ = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

- g. Pursuant to 40 CFR 60.4244(f), for purposes of 40 CFR 60 Subpart JJJJ, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of 40 CFR 60.4244.

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \quad (\text{Eq. 3})$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C_d = VOC concentration measured as propane in ppmv.

1.833×10⁻³ = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

- h. Pursuant to 40 CFR 60.4244(g), if the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of 40 CFR 60.4244. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of 40 CFR 60.4244.

$$RF_i = \frac{C}{C_{Ai}} \quad (\text{Eq. 4})$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

C_{Mi} = Measured concentration of compound i in ppmv as carbon.

C_{Ai} = True concentration of compound i in ppmv as carbon

$$C_{i\text{corr}} = RF_i \times C_{i\text{meas}} \quad (\text{Eq. 5})$$

Where:

C_{i_{corr}} = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C_{i_{meas}} = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{\text{Eq}} = 0.6098 \times C_{i\text{corr}} \quad (\text{Eq. 6})$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

- 16a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Conditions 17 and 18 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
17. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
18. Pursuant to 35 Ill. Adm. Code 218.988(a), when in the opinion of the Illinois EPA it is necessary to conduct testing to demonstrate compliance with 35 Ill. Adm. Code 218.986, the owner or operator of a VOM emission unit subject to the requirements of 35 Ill. Adm. Code 218 Subpart TT shall, at his own expense, conduct such tests in accordance

with the applicable test methods and procedures specified in 35 Ill. Adm. Code 218.105.

- 19a. Pursuant to 35 Ill. Adm. Code 218.105(d)(2)(A)(i), an owner or operator that uses an afterburner or carbon adsorber to comply with any Section of 35 Ill. Adm. Code Part 218 shall use Illinois EPA and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use except as provided in 35 Ill. Adm. Code 218.105(d)(3). The continuous monitoring equipment must monitor for each afterburner which does not have a catalyst bed, the combustion chamber temperature of each afterburner.
- b. Pursuant to 35 Ill. Adm. Code 218.105(d)(2)(B), an owner or operator must install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured in degrees Celsius or $\pm 0.5^{\circ}\text{C}$, whichever is greater.
- 20a. Pursuant to 40 CFR 60.7(b), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- b. Pursuant to 40 CFR 60.7(f), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.
- 21a. Pursuant to 40 CFR 60.4245(a), owners and operators of all stationary SI ICE must keep records of the information in 40 CFR 60.4245(a)(1) through (4):
 - i. All notifications submitted to comply with 40 CFR 60 Subpart JJJJ and all documentation supporting any notification.
 - ii. Maintenance conducted on the engine.
 - iii. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90 and 1048, 1054, and 1060, as applicable.

- iv. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a) (2), documentation that the engine meets the emission standards.
22. Pursuant to 40 CFR 63.10(b) (3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to Section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b) (3) and to record the results of that determination under 40 CFR 63.10(b) (3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
23. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- 24a. Pursuant to 35 Ill. Adm. Code 218.986(e) (2), for any leak which cannot be readily repaired within one hour after detection, the following records, as set forth below in 35 Ill. Adm. Code 218.986(e) (2), shall be kept. These records shall be maintained by the owner or operator for a minimum of two years after the date on which they are made. Copies of the records shall be made available to the Illinois EPA or USEPA upon verbal or written request.
- i. The name and identification of the leaking component;

- ii. The date and time the leak is detected;
 - iii. The action taken to repair the leak; and
 - iv. The date and time the leak is repaired.
- b. Pursuant to 35 Ill. Adm. Code 218.991(a)(2), any owner or operator of a VOM emission unit which is subject to the requirements of 35 Ill. Adm. Code 218 Subpart PP, QQ, RR or TT and complying by the use of emission capture and control equipment shall comply with the following: on and after a date consistent with 35 Ill. Adm. Code 218.106, or on and after the initial start-up date, the owner or operator of a subject VOM source shall collect and record all of the following information each day and maintain the information at the source for a period of three years:
- i. Control device monitoring data;
 - ii. A log of operating time for the capture system, control device, monitoring equipment and the associated emission source;
 - iii. A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- c. Pursuant to 35 Ill. Adm. Code 218.991(b)(2), any owner or operator of a coating line which is subject to the requirements of 35 Ill. Adm. Code 218 Subpart PP or TT and complying by means of the daily-weighted average VOM content limitation shall comply with the following: on and after a date consistent with 35 Ill. Adm. Code 218.106, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
- i. The name and identification number of each coating as applied on each coating line;
 - ii. The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line; and
 - iii. The daily-weighted average VOM content of all coatings as applied on each coating line as defined in 35 Ill. Adm. Code 218.104.
- 25a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
- i. Records addressing use of good operating practices for the scrubbers and the regenerative thermal oxidizer:

- A. Records for periodic inspection of the scrubbers and the regenerative thermal oxidizer with date, individual performing the inspection, and nature of inspection; and
 - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- ii. A log for inspection/maintenance repair records for each engine;
 - iii. Natural gas usage for the dryers, the regenerative thermal oxidizer, and Generator 1 (mmscf/month and mmscf/year);
 - iv. Amount of raw material used in the each dryer and blender (tons/month and tons/year);
 - v. Hours of operations for each permitted equipment (hours/month and hours/year); and
 - vi. Monthly and annual emissions of CO, NO_x, PM, SO₂, and VOM emissions from the source with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
- 26a. Pursuant to 40 CFR 60.7(a), any owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Illinois EPA or USEPA written notification or, if acceptable to both the Illinois EPA or USEPA and the owner or operator of a source, electronic notification, as follows:
- i. A notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
 - ii. A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
 - iii. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR

60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Illinois EPA or USEPA may request additional relevant information subsequent to this notice.

- b. Pursuant to 40 CFR 60.4245(d), owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed.
27. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- 28a. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.
- b. Pursuant to 35 Ill. Adm. Code 218.991(a)(3), any owner or operator of a VOM emission unit which is subject to the requirements of 35 Ill. Adm. Code 218 Subpart PP, QQ, RR or TT and complying by the use of emission capture and control equipment shall comply with the following: On and after a date consistent with 35 Ill. Adm. Code 218.106, the owner or operator of a subject VOM emission source shall notify the Illinois EPA:
 - i. Of any violation of the requirements of 35 Ill. Adm. Code 218 Subpart PP, QQ, RR or TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation;
 - ii. At least 30 calendar days before changing the method of compliance with 35 Ill. Adm. Code 218 Subpart PP or TT from the use of capture systems and control devices to the use of complying coatings, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.991(a)(1) above. Upon changing the method of compliance with 35 Ill. Adm. Code 218 Subpart PP or TT from the use of capture systems and control devices to the use of complying coatings, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.991(b).

- c. Pursuant to 35 Ill. Adm. Code 218.991(b), any owner or operator of a coating line which is subject to the requirements of 35 Ill. Adm. Code 218 Subpart PP or TT and complying by means of the daily-weighted average VOM content limitation shall comply with the following: On and after a date consistent with 35 Ill. Adm. Code 218.106, the owner or operator of a subject coating line shall notify the Illinois EPA:
 - i. Of a violation of the requirements of 35 Ill. Adm. Code 218 Subpart PP or TT by sending a copy of any record showing a violation to the Illinois EPA within 30 days following the occurrence of the violation;
 - ii. At least 30 calendar days before changing the method of compliance with 35 Ill. Adm. Code 218 Subpart PP or TT from the use of complying coatings to the use capture systems and control devices, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.991(a)(1). Upon changing the method of compliance with 35 Ill. Adm. Code 218 Subpart PP or TT from the use of complying coatings to the use capture systems and control devices, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.991(a).
- 29a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
- b. Two (2) copies of required reports and notifications shall be sent to:
 - Illinois Environmental Protection Agency
 - Division of Air Pollution Control
 - Compliance Section (#40)
 - P.O. Box 19276
 - Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

 - Illinois Environmental Protection Agency
 - Division of Air Pollution Control
 - 9511 West Harrison
 - Des Plaines, Illinois 60016

It should be noted that this permit has been revised so as to include operations of the equipment described in construction permit #12070048.

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If you have any questions on this, please call German Barria at 217/785-1705.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:GB:jws

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the food flavoring facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (e.g., 100 tons/year for VOM) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	E M I S S I O N S (Tons/Year)				
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>
Dryer 1			2.41		2.10
Dryer 2			1.08		0.57
Dryer 3			2.79		3.02
Dryers 5 & 6			5.85		2.58
Blending			5.55		1.01
Dryers SDA & SDB			2.41		1.14
Gum Compounding Process			0.44		
Natural Gas-Fired Generator 1	4.73	2.76	0.11	0.01	0.32
Natural Gas-Fired Dryers & RTO	<u>3.31</u>	<u>3.94</u>	<u>0.30</u>	<u>0.02</u>	<u>0.22</u>
TOTAL	8.04	6.70	21.04	0.03	10.96