

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- RENEWAL

PERMITTEE

Griffith Laboratories U.S.A., Inc.
Attn: James Swanson
12200 South Central Avenue
Alsip, Illinois 60803-3495

<u>Application No.:</u> 75060048	<u>I.D. No.:</u> 031600CBW
<u>Applicant's Designation:</u>	<u>Date Received:</u> April 9, 2007
<u>Subject:</u> Food Ingredients Manufacturing Facility	
<u>Date Issued:</u> February 27, 2009	<u>Expiration Date:</u> February 27, 2014
<u>Location:</u> 1437 West 37th Street, Chicago, Cook County, 60609	

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

Three Natural-Gas-Fired Boilers;
Two Storage Silos Controlled by Baghouses;
Pneumatic Unloading System Controlled by Baghouse;
Two Hoppers Controlled by Dust Collector;
Two Batch Cookers with Condensers and Two Hydrochloric Acid Storage Tanks
Controlled by One Chemical Scrubber;
One Spray Dryer, Six Product Recovery Cyclones and Packaging System,
Controlled by One Venture Scrubber, Two Ionizing Wet Scrubbers and One
Regenerative Thermal Oxidizer (RTO);
Three Decolorizing Tanks Controlled by Wet Cyclone;
Two Vacuum Filters and Three Vacuum Pumps;
One Phosphoric Acid Storage Tank;
One sludge storage tank;
Six Hydrolyzed Vegetable Protein (HVP) Storage Tanks;
Three Blenders Controlled by a Baghouse; Two Sifters; Two Spray Dryers
Controlled by Two Scrubbers; Four Reactors; Four Kettles; Equipment
Associated with the Flavors Operation; and
One Product Water Evaporator Controlled by a Condenser

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

This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/yr for particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), 10 tons/year for a single Hazardous Air Pollutants (HAP) and 25 tons/year of any combination of such HAPs). As a result, the source is excluded from the requirements 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.

- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. 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 the requirements of 35 Ill. Adm. Code 212.122, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
- b. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the emission source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 Ill. Adm. Code 212.301 and 212.314.
- c. Pursuant to 35 Ill. Adm. Code 212.306, all normal traffic pattern access areas surrounding storage piles specified in 35 Ill. Adm. Code 212.304 and all normal traffic pattern roads and parking facilities which are located on mining or manufacturing property shall be paved or treated with water, oils or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program required by 35 Ill. Adm. Code 212.309, 212.310 and 212.312.
- d. Pursuant to 35 Ill. Adm. Code 212.307, all unloading and transporting operations of materials collected by pollution control equipment shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods.
- e. Pursuant to 35 Ill. Adm. Code 212.309(a), the emission units described in 35 Ill. Adm. Code 212.304 through 212.308 and Section 212.316 shall be operated under the provisions of an operating program, consistent with the requirements set forth in 35 Ill. Adm. Code 212.310 and 212.312, and prepared by the owner or operator and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions.
- f. Pursuant to 35 Ill. Adm. Code 212.310, as a minimum the operating program shall include the following:
 - i. The name and address of the source;
 - ii. The name and address of the owner or operator responsible for execution of the operating program;
 - iii. A map or diagram of the source showing approximate locations of storage piles, conveyor loading operations, normal traffic

pattern access areas surrounding storage piles and all normal traffic patterns within the source;

- iv. Location of unloading and transporting operations with pollution control equipment;
 - v. A detailed description of the best management practices utilized to achieve compliance with 35 Ill. Adm. Code 212 Subpart K, including an engineering specification of particulate collection equipment, application systems for water, oil, chemicals and dust suppressants utilized and equivalent methods utilized;
 - vi. Estimated frequency of application of dust suppressants by location of materials; and
 - vii. Such other information as may be necessary to facilitate the Illinois EPA's review of the operating program.
- g. Pursuant to 35 Ill. Adm. Code 212.321(a), 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 subsection (c) of 35 Ill. Adm. Code 212.321.
3. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.
- 4a. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Agency according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with 35 Ill. Adm. Code 218.108, or unless such tank is a pressure tank as described in 35 Ill. Adm. Code 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).
- b. Pursuant to 35 Ill. Adm. Code 218.122(c), if no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.122 shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psi) or greater at 294.3°K (70°F).
- c. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) 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 shall only apply to photochemically reactive material.

- 5a. Pursuant to Paragraph 17 of Administrative Consent Order EPA-5-04-113(a)-09-IL, after installation and startup of the RTO, all controlled emission limits referenced in Paragraph 18 apply at all times, except as otherwise set forth in this paragraph. During periods of regeneration, Griffith will not process HVP product through the HVP spray dryer. For purposes of this Order, "Regeneration" means the removal of organic particulates from the ceramic heat recovery media beds in the RTO. To the extent practicable, Griffith shall shut down any process units venting to the RTO during periods of startup, shutdown, or malfunction to minimize emissions.
- b. Pursuant to Paragraph 18 of Administrative Consent Order EPA-5-04-113(a)-09-IL, following installation of the RTO, emissions of VOM from the HVP spray dryer shall be reduced by at least 95 percent (measured as total organic carbon except for those compounds and substances excluded from the definition of VOM per federal and State of Illinois laws and regulations) or have total hydrocarbon emissions of less than 10 parts per million (ppm) (measured as total organic carbon) based upon its operation as established after initial performance testing.
- 6. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the baghouses, scrubbers, wet cyclone, and the regenerative thermal oxidizer (RTO) such that the baghouses, scrubbers, wet cyclone, and the regenerative thermal oxidizer (RTO) are kept in proper working condition and not cause a violation of the Environmental Protection Act or regulations promulgated therein.
- 7a. Operation and emissions of the plant shall not exceed the following limits:

i. Raw Materials Throughput:

Bulk Protein Materials: 2,450 tons/month, 28,800 tons/year
 Hydrochloric Acid (35% concentration): 1,350 tons/month, 16,000 tons/year
 Sodium Hydroxide (50% concentration): 740 tons/month, 8,700 tons/year

ii. Emissions:

<u>Pollutant</u>	<u>Emission Factor (Lbs/Ton)</u>	<u>Emissions</u>	
		<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Particulate Matter (PM)	1.00	2.27	26.75
Volatile Organic Materials (VOM)	0.42	0.95	11.24
Hydrogen Chloride (HCl)	--	0.71	8.40

These limits define the potential emissions of PM₁₀, VOM and HAP (Hydrogen Chloride) and are based on the actual emissions determined from the maximum production rate, stack test data for PM₁₀ and VOM, at least 95% of Hydrogen Chloride being neutralized in the reactor and control efficiency of scrubber system 97% for Hydrogen Chloride emission.

- b. This permit is issued based on negligible emissions of PM₁₀ from the bulk protein raw materials storage silos, process and storage tanks, packaging system, ribbon blender and flavors operation. For this purpose, emissions from each group of emission sources shall not exceed a nominal emission rate of 0.1 lb/hour and 0.44 ton/year.
- c. Operation and emissions of the natural gas firing equipment (combined) shall not exceed the following limits:
 - i. Natural Gas Usage: 32.5 mmscf/month, 390 mmscf/year
 - ii. Emissions:

<u>Pollutant</u>	<u>Emission</u>	
	<u>Factor</u> <u>(lbs/mmscf)</u>	<u>Emissions</u> <u>(Tons/Mo) (Tons/Yr)</u>
Nitrogen Oxides (NO _x)	100	1.63 19.50
Carbon Monoxide (CO)	84	1.37 16.38
Particulate Matter (PM)	7.6	0.12 1.48
Sulfur Dioxide (SO ₂)	0.6	0.01 0.12
Volatile Organic Materials (VOM)	5.5	0.09 1.07

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

- d. This permit is issued based on negligible emissions of particulate matter (PM), volatile organic materials (VOM), and hydrogen chloride (HCl) from the product evaporator. For this purpose, emissions of each pollutant shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- e. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 2.25 tons/month and 22.5 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.
- f. 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).

- 8a. 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 Condition 10 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 9a. Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR Part 60, Appendix A, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301.
- b. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken

at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.

- c. Pursuant to 35 Ill. Adm. Code 212.110(a), measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E.
 - d. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
 - e. 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.
- 10a. Pursuant to 35 Ill. Adm. Code 218.105(d)(2)(A)(i), an owner or operator that uses an afterburner 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 +/- 0.5° C, whichever is greater.
11. The control devices shall be equipped with monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications. The monitoring equipment must continuously monitor and record the temperature of the inlet cooling water to the condensers and the combustion chamber temperature of the afterburner.
12. 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.

13. 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.
14. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified in 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.
- 15a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
 - i. The Permittee shall maintain general records of all public inquiries or complaints directed to the plant regarding operations related to emissions or odors, including date, time, individual (if identified), summary of discussion, summary of response, assessment of corresponding operating conditions and involved plant personnel.

- ii. Records addressing use of good operating practices for the baghouses, scrubbers, wet cyclone, and the regenerative thermal oxidizer (RTO):
 - A. Records for periodic inspection of the baghouses, scrubbers, wet cyclone, and the regenerative thermal oxidizer (RTO) 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.
 - iii. The number of batches begun (batches/day and batches/year);
 - iv. Amount of Hydrochloric acid used (lbs/batch);
 - v. Concentration of hydrochloric acid used in each batch (weight %);
 - vi. Amount of sodium and potassium hydroxide used (lbs/batch);
 - vii. Concentration of sodium and potassium hydroxide used in each batch (weight %);
 - viii. pH of the solution entering the spray dryer for each batch;
 - ix. Emission calculation for Hydrochloric acid (lbs/batch) based on the actual acid usage and concentration, the percentage of HCl being neutralized in the reactor and scrubber system efficiency.
 - x. Usage of raw materials:
 - A. Protein sources (tons/month and tons/year);
 - B. Hydrochloric acid (tons/month and tons/year);
 - C. Concentration of hydrochloric acid used (weight %);
 - D. Sodium hydroxide (tons/month); and
 - E. Concentration of sodium hydroxide used (weight %).
 - xi. Natural gas usage (mmscf/month and mmscf/year); and
 - xii. Monthly and annual emissions of CO, NO_x, PM₁₀, VOM, and HAPs (tons/month, tons/year) with supporting calculations;
- 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) 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.

16. 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.
- 17a. On a quarterly basis, the Permittee shall submit to the Illinois EPA copies of records required pursuant to condition 16(a)(i) of any odor complaint(s) that have been received at the plant (including copies of compliant(s) that have been forwarded to the Permittee by the City of Chicago, Department of Environment). The Permittee shall submit copies of relevant records for the time period(s) of interest to the Illinois EPA, accompanied by such additional narrative explanation as the Permittee elects to provide. For this purpose, such information shall include the following data as the Permittee believes that such data is significant to disputing or understanding the alleged incident: meteorological data, data identifying deviations from proper operation of units, and data confirming proper operation of units.
 - b. Quarterly reports shall be submitted to the Illinois EPA's Compliance Section in Springfield, Illinois no later than 30 days after the preceding calendar quarter.
18. 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 and Enforcement Section (#40)
P.O. Box 19276
Springfield, IL 62794-9276

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

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

If you have any questions on this permit, please call Valeriy Brodsky at 217/782-2113.

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

Date Signed:

ECB:VJB:psj

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions from the Food Ingredient Manufacturing Facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Agency used the annual operating scenario which results in maximum emissions from such a plant. This is usage of 16,000 tons of Hydrochloric acid (concentration 35 %) and 28,800 tons of protein containing raw material per year. The resulting maximum emissions are below the levels (e.g., 100 tons per year of PM₁₀, 10 tons per year for a single HAP, and 25 tons per year for totaled HAP) 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 material is handled, and control measures are more effective than required in this permit.

<u>Process</u>	Emissions (tons/year)					Single <u>HAP</u>	Total <u>HAP</u>
	<u>CO</u>	<u>NO_x</u>	<u>PM₁₀</u>	<u>SO₂</u>	<u>VOM</u>		
HVP Production	----	----	26.75		11.24	8.40	
Material Storage and Handling	----	----	1.32		----	----	
Fuel Combustion Equipment	16.38	19.50	1.48	0.12	1.07	----	
Product evaporator	----	-----	<u>0.44</u>	----	<u>0.44</u>	<u>0.44</u>	----
Total	<u>16.38</u>	<u>19.50</u>	<u>29.99</u>	<u>0.12</u>	<u>12.75</u>	<u>9.00</u>	<u>22.5</u>

VJB:psj