

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY  
NEPA DETERMINATION**



**RECIPIENT:** Superbrewed Food, Inc

**STATE:** DE

**PROJECT TITLE :** Upgrading of Stillage Syrup into Single Cell Protein for Aquaculture Feed

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001689	DE-EE0008251	GFO-0008251-002	GO8251

**Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:**

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

**A9 Information gathering, analysis, and dissemination** Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

**B3.6 Small-scale research and development, laboratory operations, and pilot projects** Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Superbrewed Food, Inc (formerly White Dog Labs) to produce a single-celled protein (SCP) and butyrate feed additive from cellulosic ethanol fermentation streams. The final butyrate enhanced product would be used to conduct feeding trials to determine nutritional quality.

Previously, DOE reviewed all 3 budget periods (project formerly titled "Upgrading of Stillage Syrup into Single Cell Protein for Aquaculture Feed") and issued a final NEPA determination (GFO-0008251-001, CXs A9 and B3.6, 12/1/2017). Since that time, the recipient has proposed a change in the subject of feeding trials and the location in which those would take place. This NEPA determination reviews the change of scope and location. Feeding trials would be conducted on broiler chickens instead of salmon. Single-cell protein (SCP) would be sent to contractor AHPharma in Hebron, MD instead of the Center for Aquaculture Technologies in Prince Edward Island, Canada. Feeding trials would be conducted at AHPharma's purpose-built facility for research and development of agriculture and food safety industries.

In the original project proposal, SCP would be produced using product supplied by POET DSM Liberty Plant in Emmetsburg, IA. This has been replaced with fermentation streams supplied by Ace Ethanol in Stanley, WI. Ace Ethanol would send these streams to Superbrewed Food to produce the butyrate enhanced feed. This would be used to conduct feed trials with broiler chickens at AHPharma to determine nutritional quality. Activities at AHPharma would include feed formulation (starter, grower, and finisher phase) and a 42-day nutritional evaluation to determine the effects of the formulated feed on body weight, feed consumption, digesta viscosity, meat quality measurements, histopathology, and blood chemistry. Data analysis would also occur at this facility.

Diets would be formulated to closely approximate nutrient requirements of a commercial broiler diet set forth by the University of California, Davis Guide to Feed Mixing. Approximately 6,912 kg of broiler chicken feed would be produced. Feeding trials would be split into three different phases using three different formulations. The starter phase would be 0-21 days of age, the grower phase would be 22-35 days of age, and the finisher phase would be 36-42 days of age. The different concentrations of butyrate would be analyzed for effect on changes in weight, feed intake, and mortality.

Because this project involves work with live animals, all experimental procedures including stocking density and feeder/water space would comply with the Guide for the Care and Use of Agricultural Animals in Research and

Teaching and would be previously approved by the Institute of Animal Care and Use Committee (IACUC) of AHPharma, Inc. Diets and husbandry procedures would meet or exceed the nutrient requirements and management guide for Cobb-500 broilers. Euthanasia would be performed under the American Veterinary Medical Association Guidelines for the Euthanasia of Animals by trained personnel only.

Ammonia, odor, and dust air emissions are expected to be generated from poultry manure. AHPharma does not allow ammonia levels inside chicken houses to reach levels detectible by the human nose. This is achieved through proactive litter management, including windrowing/composting between flocks and maintaining proper heat and ventilation during grow-out. It is estimated that approximately 1582 kg of poultry manure and 4200 kg of broiler chicken carcasses would be produced which would be composted on-site. Superbrewed Food would use best practices for composting manure, chicken carcasses, and excess feed. No changes in the use, mission, or operation of existing facilities would be required as part of this project and no additional permits would be required in order to conduct any of the work activities.

## NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Bioenergy Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Shaina Aguilar on 11/19/21.

## FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

## SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

  
NEPA Compliance Officer

Date: 11/22/2021

## FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_