ENVIRONMENTAL
LAND MANAGEMENT LLC
waste byproduct landspreading specialists

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Minneapolis, MN 55405

tel. 612-353-6388
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Tuesday March 11, 2025

Theresa Stiner
Iowa Department of Natural Resources
Land Quality Bureau
502 E 9th Street
Des Moines, IA 50319-0034

Re: Eagle Gove Cooperative, Eagle Grove, IA: Permit # 99-SDP-06-19
Land Application Permit Renewal Application

Ms. Stiner,

Enclosed is an application for a land application permit renewal for Eagle Grove Cooperative (formerly Prestage Foods of Iowa) in Eagle Grove, IA: Permit # 99-SDP-06-19. For this permit renewal there are two items of note:

1. Facility name change to Eagle Grove Cooperative from Prestage Foods of Iowa
2. Updated Closure Cost Estimate
3. Updated Letter of Credit will be sent as soon as increase has been completed

Please contact us with any question you have for the application.

Sincerely,

M Klema

Michael Klema
Environmental Land Management, LLC

Cc: IDNR FO #2, 2300 15th St SW, Mason City, IA 50401

Iowa Department of Natural Resources

Solid Waste Land Application Permit Application Form

Application for a solid waste land application must be accompanied by the plans, specifications and additional information required by the applicable solid waste rules under Iowa Administrative Code 567 Chapter 121.

Send completed applications with attached information to:

Iowa Department of Natural Resources
Land Quality Bureau
Solid Waste Section
502 E 9th St
Des Moines, IA 50319-0034

For questions concerning this application please contact the Department at (515) 725-8315.

☐ New Permit
☒ Permit Renewal # 99 -SDP- 06 - 19 -LAN

Section 1. Contact Information

Solid Waste Generator Name: Eagle Grove Cooperative Phone: 515-448-2700
Address: 3183 Highway 17 City, State, Zip: Eagle Grove, IA 50533
Email: - Fax: -

Physical Location of Generating Facility:
Address: 3183 Highway 17 City, State, Zip: Eagle Grove, IA 50533

Responsible Official Name: Jere Null Phone: 515-448-2904
Address: 3183 Highway 17 City, State, Zip: Eagle Grove, IA 50533
Email: jtnull@wholestonefarms.com Fax: -

Certified Professional Agronomist Name: Jim Nesseth Phone: 507-662-5005
Address: 507 Milwaukee Street City, State, Zip: Lakefield, MN 56150
Email: info@extendedag.com License #: 17118 Fax: 507-662-5105

Consultant Name (if any): Michael Klema, Environmental Land Management Phone: 612-353-6388
Address: PO Box 50004 City, State, Zip: Minneapolis, MN 55405
Email: michaelklema@landspread.com Fax: 612-284-8909

Section 2. Waste Type

Does the material to be land applied contain free liquids[1]? ☐ Yes ☒ No

If the material is a sludge, is it generated by a:

- ☒ Commercial or industrial wastewater treatment facility
- ☐ Water supply treatment facility
- ☐ Air pollution control facility
- ☐ Other; Please elaborate:

Expected weight (tons) of solid waste to be land applied per year by the facility: 7,000

[1] The presence of free liquids is determined by the paint filter test. The paint filter test is done by placing a 100-milliliter or 100-gram representative sample of the material into a standard mesh number 60 (fine mesh size) conical paint filter for five minutes. Any free liquid visible below the funnel indicates sample failure.

Section 3. Permit Application Checklist

The following items must be attached. If the permit is being renewed and there is no change from what was submitted with previous applications, the Doc Id# may be listed in lieu of resubmitting the document. Analytical results and a cost closure estimate (for facilities storing material at the application sites) must be submitted with each renewal. Checking the appropriate boxes below certifies that the documents submitted in conjunction with this application form are complete and in compliance with the applicable chapters of Iowa Administrative Code. If an application is found by the DNR to be incomplete, it may be denied and returned to the applicant.

Required Documents		Attached or Doc Id#	
Executive Summary *(permit renewals only)* • Summary of each special provision of the current permit to determine if it is to remain the same, be revised or be removed. • Summary of each permit amendment, if any, that occurred during the current permit cycle to determine if it shall be included with the renewed permit, be revised or be removed. • Provide documentation and certification as required for new permit amendment requests and new variance requests from Iowa Administrative Code, if any.			NA
Description of the material including source, quantity and method of treatment prior to land application	567 IAC 121.7(1)"a"(11)	☒	
Description of the land application process, including method of application, when application will take place, and equipment to be used	567 IAC 121.7(1)"a"(13) 567 IAC 121.7(1)"a"(14)	☒	
Analytical results	567 IAC 121.7(1)"a"(12)	☒	NA
Evidence waste application will not cause adverse effects	567 IAC 121.7(1)"a"(15) through 567 IAC 121.7(1)"a"(17)	☒	
Site Operation Plan	567 IAC 121.7(1)"a"(18)	☒	
Emergency Response and Remedial Action Plan	IAC 567 102.14	☒	
Site Closure Plan	IAC 567 102.12(10)	☒	
Proof of financial assurance and closure cost estimate (only if material will be stored at application sites)	567 IAC 121.8	☒	NA
Table of land application sites. Include the following for each application site: • Site ID • County and township • Legal description of site • Total acres in site • Acres eligible for land application • Name of landowner	567 IAC 121.7(1)"a"(4)	☒	
For each <u>new</u> application site, include the following:			
Aerial photograph with the application area(s) designated	567 IAC 121.7(1)"a"(1)	☒	NA
Soil map	567 IAC 121.7(1)"a"(2)	☒	NA
Water table levels	567 IAC 121.7(1)"a"(10)	☒	NA
Location of wells within one mile of the site	567 IAC 121.7(1)"a"(5)	☒	NA
Evidence of Natural Resources Conservation Service (NRCS) review and soil loss information	567 IAC 121.7(1)"a"(3) 567 IAC 121.7(1)"a"(6) through 567 IAC 121.7(1)"a"(8)	☒	NA
Site soil testing	567 IAC 121.7(1)"a"(9)	☒	NA
Proof of ownership or legal entitlement to use the site (agreement with the land owner)	567 IAC 121.7(1)"b"(6)	☒	NA

Section 4. Applicant Certification

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I further certify that the construction and operation of the above described facility will be in accordance with the plans, specifications, reports and related communications accepted by the Iowa Department of Natural Resources and on file in its office; and in accordance with conditions imposed in the permit issued by the Iowa Department of Natural Resources.

Signature: Jere T. Null Date: 3/10/2024

Printed Name: Jere Null Title: CEO

Eagle Grove Cooperative – Eagle Grove, IA
Permit # 99-SDP-06-19
Iowa DNR Land Application Permit Application
Application Checklist

▪ Executive Summary

- **Summary of Modifications to Facility**
  - No new modifications to facility

- **Summary of Special Provisions**
  - Special Provisions 1-10 are listed below as they are in the current permit. All requested revisions and changes are listed in bold type following each item.

1. The permit holder is authorized to land apply up to 6 wet tons (2.08 dry tons) per acre per year of industrial sludge generated at Prestage Foods of Iowa in Eagle Grove, Iowa as indicated in the permit application dated March 4, 2022 (Document ID #102495).

2. The permit holder shall operate in accordance with IAC 567 Chapter 121 and the approved operations plan dated March 4, 2022 (Document ID #102495) as submitted by Environmental Land Management. No provision in this permit or the approved site operation plan submitted constitutes a waiver or variance from 567 IAC 121 or the Code of Iowa. Any conflict between a provision of the permit or reference document and Iowa rules or statutes shall be resolved in favor of the duly adopted rules and statutes.

3. The permit holder is authorized to land apply only on DNR approved sites as shown on the attached Table 1 and the attached maps. Application will not take place on slopes greater than 9%. Application on drainage pathways where erosion would be likely to occur rainfall and snowmelt is prohibited.

4. At no time may land application occur on sites which will not normally sustain a crop or other soil-stabilizing vegetation or on land for which there is no intent to plant, cultivate and harvest a crop either the same year during the growing season or the year following land application activities. Neither Prestage Foods, nor the application contractor, nor the land owners are authorized to land apply wastes, or allow the application of wastes on land which will lie fallow the following growing season.

5. Land application sites shall have the pH of the surface horizon or plow layer adjusted to and maintained at or above 5.5.

6. Prestage Foods industrial sludge must not be applied within 200 feet of occupied residences without written approval from the landowner of that residence. A 50

foot buffer must be maintained from a stream, drainange channel, waterway, tile-line surface inlet, or shoreline of a pond.

7. The permit holder is required to have a Certified Professional Agronomist perform an annual inspection of all sites utilized in the particular year to ensure soil properties and constituents being applied are suitable and will meet agronomic rates for the crop that will be produced during that current year. The Agronomist will review soil test results to ensure that the application of the waste will not cause buildup of nutrients in the soil. The results of this inspection shall be submitted to the DNR Main Office by April 1st of each year.

8. The permit holder is required to maintain records of the total amounts land applied at each application site. These records must be made available to the DNR upon request. An annual report summarizing the land application at each site shall be submitted to the DNR Main Office using Form 542-3276LAN. The report will be for July through June and due October 1st.

9. If applicable, manure management plans must be followed to ensure compliance with Iowa manure regulations. Nutrients from Prestage Foods industrial sludge must be added into the rate calculations of the current Manure Management Plan.

10. Prestage Foods is hereby authorized to be stored at approved land application sites as indicated on the maps attached to this permit. Storage of Prestage Foods industrial sludge is subject to the following conditions:

- The maximum amount of stored Prestage Foods industrial sludge at a land application site must not exceed the amount that is to be land applied at that particular land application site.
- Storage of Prestage Foods industrial sludge shall not exceed 270 days at any one time. Prestage Foods is required to maintain records, including dates and daily volume of material hauled and deposited at the land application site on those dates to show compliance of the above requirement. Volume removed and spreading dates must also be tracked. Records must be available for inspection by the DNR upon request.
- Odor from the stockpiling of Prestage Foods industrial sludge must be controlled at all times. When odor is evident, measures must be taken to remediate odor from the stockpiles. If odor of the stockpile is not remediated, the stockpile must be removed from the property and disposed of at a permitted Iowa sanitary disposal project (SDP) or hauled out of state on a schedule determined by the DNR.

11. The closure cost estimates dated January 17, 2022 in the amount of $79,375 as prepared by Thomas K. Madden, P.E., of SEH and initial proof of establishment of a financial assurance mechanism in the amount of $79,375 are hereby approved. The permit holder shall maintain irrevovable standby letter of credit 020-091-473153-72 dated February 24, 2022 (doc# 102495) established at Cape Fear Farm Credit, Kenansville as its financial assurance mechanism and agrees to

comply with the requirement of all subrules within IAC 567 Chapter 121.8 (455B, 455D) "Financial assurance requirements for land application of wastes."

- **Summary of Each Permit Amendment**

1. Permit Amendment #1, 11/10/2022

a. Amend Special Provision #1 as follows:
   1. The permit holder is authorized to land apply up to ~~6~~ 7 wet tons (~~2.08~~ 2.4 dry tons) per acre, per year of industrial sludge generated at Prestage Foods of Iowa in Eagle Grove Iowa as indicated in the permit application dated March 4, 2022 (Document ID #102495) and the permit amendment request dated November 7, 2022, (Document ID #104542), as submitted by Environmental Land Management.

2. Permit Amendment #2, 10/3/2023

a. In accordance with the September 26, 2023 request submitted by Environmental Land Management, the permit holder is authorized to add the following site(s). All information submitted, including plat and soil maps (Doc # 107763), is hereby incorporated as provisions of the permit. See attached Table 1 for complete information.
   1. Harmon Newark 24
   2. Harmon Newark Troy 13-18

3. Permit Amendment #3, 12/8/2023

a. In accordance with the December 7, 2023 request submitted by Environmental Land Management, the permit holder is authorized to add the following site(s). All information submitted, including plat and soil maps (Doc# 108400), is hereby incorporated as provisions of the permit. See attached Table 1 for complete information.
   1. Harmon Wagner
   2. Harmon Sparboe NW

4. Permit Amendment #4, 2/20/2025

a. In accordance with the February 10, 2025 request submitted by Environmental Land Management, the permit holder is authorized to add the following site(s). All information submitted, including plat and soil maps (Doc# 112255), is hereby incorporated as provisions of the permit. See attached Table 1 for complete information.
   1. Durschmidt Blairsburg East
   2. Durschmidt Blairsburg North
   3. Durschmidt Blairsburg South

4. Durschmidt Dows
5. Harmon Davis

- **Summary of Permit Amendment and New Variance Requests**
  - Facility name change to Eagle Grove Cooperative from Prestage Foods of Iowa

- **Description of Material**

Eagle Grove Cooperative (Formerly Prestage Foods) has a wastewater pretreatment plant at their pork processing facility. The wastewater flows through a screen (solids removed), followed by a non-chemical DAF to grit classifier, then to a flocculator with chemicals, then to a second DAF, and finally to a tri-canter (a centrifuge with three exits) to remove the final solids, water and grease. After the non-chemical DAF the bulk of the solids are dewatered by one of two decanters before filling the dump truck. Treated water flows to covered anaerobic lagoons before exiting the property via force main by the city of Eagle Grove to their municipal wastewater plant. The grease is returned to rendering. These two solids removal processes generate approximately 2/3 of the byproduct material that will be land applied. The other process will be from the farm and livestock truck wash facility. That truck wash handles all of the swine bedding removed from the trucks that haul livestock into the processing facility (only those trucks). The bedding will be primarily sawdust material and livestock manure.

- **Description of the Disposal Process and Equipment**

Environmental Land Management (ELM) performs the hauling as well as the land application work associated with the land application program. Typical hauling will consist of 1-2 loads per day out of the plant using dump trucks, at roughly 15 tons of material per load. Material will be hauled to permitted field sites for temporary stockpiling until enough material has been delivered to spread the desired acreage or seasonal limitations allow. After stockpiling, the material will be loaded into a spreader and that field site will be spread using a pull-type rear discharge spreader at appropriate agronomic rates as recommended by Extended Ag Services.

- **Analytical Results**

Attached are the most recent analytical results from Midwest Labs and the most recent agronomist's recommendation of that analysis performed by Extended Ag Services.

- **Evidence That Waste Application Will Not Cause Adverse Affects**

The industrial sludge and bedding byproducts do not contain any toxic materials. Proper land application processes will be adhered to in order to minimize any chance of adverse effects. To reduce the chance of runoff, land application will be suspended when precipitation is imminent or during other adverse weather conditions. All specific setbacks will be adhered to during stockpiling and spreading operations. Recommended

application rates will be followed and adjusted according to the agronomic limits of the particular sites. Cumulative metal loading rates have been analyzed in the agronomist recommendations. Therefore, no adverse effects are anticipated from the land application program.

- **Site Operation Plan**

See attached Operation Plan.

- **Emergency Response and Remedial Action Plan (ERRAP)**

See attached ERRAP.

- **Site Closure Plan**

During the life of a specific site, setbacks and application rates guidelines will be followed. By applying the material at appropriate agronomic rates the crops will utilize the nutrients within a year or shortly thereafter as it breaks down and no over fertilization will occur. However, upon the closing of a site, we will notify with Department in writing. We will also monitor that site if the integrity of the site is deemed compromised and take any corrective measures to return that site normalcy which will be detailed in annual reports.

- **Proof of Financial Assurance and Closure Cost Estimate**

Thomas Madden, P.E., of SEH in Mason City, IA has completed the closure cost estimate attached with the permit application. Eagle Grove Cooperative will provide updated proof of financial assurance by way of a letter of credit or surety bond for the estimated amounts.

- **Table of Land Application Sites (Table 1)**

See attached Table 1 for site-specific information.

- **Site Maps and Aerial Photographs**

See all submitted site maps for all sites listed on Table 1.

- **Soil Maps**

See all submitted soil maps for permitted sites on Table 1.

- **Site Water Table Levels**

See all submitted water table information for permitted sites on Table 1.

- **Well Specifications**

An Iowa DNR well search has been completed for all sites on Table 1. See all submitted well search information for each site on Table 1.

- **Evidence of NRCS Review & Soil Loss Information**

Jim Nesseth, Certified Professional Agronomist, along with Andrew Nesseth, Environmental Consultant, of Extended Ag Services, have reviewed the site information and have summarized their findings in reviews submitted for all permitted sites on Table 1. See all submitted soil loss information for permitted sites on Table 1.

- **Site(s) Soil Testing**

Initial site soil sampling has or will be completed for all sites on Table 1 in which application will take place for the upcoming cropping season. Soil test results will be further examined and discussed for sites applied to in the annual agronomist report.

- **Proof of Ownership/Local Zoning Requirements**

See Table 1 identifying farmers and land operators. See submitted consent forms for all approved sites on Table 1.

Midwest Laboratories
13611 B Street
Omaha, NE 68144
P 402-334-7770
F 402-334-9121
www.midwestlabs.com

ENVIRONMENTAL LAND MGMT LLC - 16041
PO BOX 50004
MINNEAPOLIS, MN 55405

Project: Prestege Foods

Project Manager: LEE HANSEN

Reported:
2024-05-28 08:36

Sample ID: Industrial Sludge
Laboratory ID: 1602590-01
Sampled Date/Time: 2024-05-09 09:00

Analyte	Dry Weight Result	Reporting Limit	Units	As Received Result		Method	Prepared	Analyzed	Analyst	(Container) / Notes
Total Metals										
Arsenic	<	1.1	mg/kg dry	<	mg/kg	EPA 6020	2024-05-14	2024-05-16	nto7	(C)
Barium	6.0	0.5	mg/kg dry	1.3	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Cadmium	0.9	0.2	mg/kg dry	0.2	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Calcium	11580	21.4	mg/kg dry	2594	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Chromium	48.0	1.1	mg/kg dry	10.8	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Copper	209.0	1.1	mg/kg dry	46.8	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Iron	56800	5.3	mg/kg dry	12730	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Lead	<	5.3	mg/kg dry	<	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Magnesium	470.3	5.3	mg/kg dry	105.4	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Manganese	101.8	1.1	mg/kg dry	22.8	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Mercury	<	0.11	mg/kg dry	<	mg/kg	EPA 7471	2024-05-15	2024-05-17	mab7	(C)
Molybdenum	6.0	1.1	mg/kg dry	1.3	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Nickel	6.4	1.1	mg/kg dry	1.4	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Phosphate (P2O5)	44570	24.5	mg/kg dry		mg/kg	Calculation	2024-05-14	2024-05-15	ras7	
Phosphorus	19460	10.7	mg/kg dry	4362	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Potash (K2O)	1644	12.8	mg/kg dry		mg/kg	Calculation	2024-05-14	2024-05-15	ras7	
Potassium	1370	10.7	mg/kg dry	307.0	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Selenium	1.8	1.1	mg/kg dry	0.4	mg/kg	EPA 6020	2024-05-14	2024-05-16	nto7	(C)
Silver	<	1.1	mg/kg dry	<	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Sodium	847.8	10.7	mg/kg dry	190.0	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Sulfur	8661	16.0	mg/kg dry	1941	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Zinc	496.2	2.1	mg/kg dry	111.2	mg/kg	EPA 6010D	2024-05-14	2024-05-15	ras7	(C)
Environmental Chemistry										
Ammonia-N	22900	223	mg/kg dry	5130	mg/kg	SM 4500-NH3 C-2011	2024-05-14	2024-05-14	pes0	(A)
Chloride	1830	446	mg/kg dry	410	mg/kg	SM 4500-CL-E-2011	2024-05-15	2024-05-15	nam7	(B)
Hexane Extractable Material (HEM)	522000	3570	mg/kg dry	117000	mg/kg	EPA 9071B	2024-05-20	2024-05-20	gas9	(B)
Total Kjeldahl Nitrogen	74900	1120	mg/kg dry	16800	mg/kg	PAI-DK 01	2024-05-14	2024-05-14	pes0	(A)
Nitrate/Nitrite Nitrogen	1.0	1.0	mg/kg dry	0.2	mg/kg	EPA 353.2	2024-05-16	2024-05-16	akn1	(D)
Organic Nitrogen	52000	1120	mg/kg dry		mg/kg	Calculation	2024-05-14	2024-05-14	pes0	
pH @ 19.7°C			S.U.	6.59	S.U.	EPA 9045D	2024-05-14	2024-05-14	cvn2	(B)
Percent Solids		0.01	%	22.41	%	SM 2540 G-2015	2024-05-16	2024-05-17	ppj2	(B)
Percent Volatile Solids	84.63	0.01	%	84.63	%	SM 2540 G-2015	2024-05-16	2024-05-17	ppj2	(B)
Total Carbon	65.05	0.45	% dry	14.58	%	ASTM D5373-08(mod)	2024-05-14	2024-05-14	rpk5	(A)

Work Order: 1602590

EXTended Ag Services, Inc.

202 South Highway 86
Lakefield, MN 56150
507.662.5005 phone
507.662.5105 fax
info@extendedag.com

February 17, 2025

Environmental Land Management

1602 11th Drive NE

Austin, MN 55912

RE: Review of Industrial Byproduct for Land Application

Michael,

We have completed your request for an updated review of the waste by-product generated by Eagle Grove Cooperative, formerly operated under the name Prestage Foods of Iowa – Eagle Grove, Iowa. Eagle Grove Cooperative has a wastewater pretreatment plant at their pork processing facility. The wastewater flows through a screen (solids removed), followed by a non-chemical DAF to grit classifier, then to a flocculator with chemicals, then to a second DAF, and finally to a tri-canter to remove the final solids and grease. Treated water flows to covered anaerobic lagoons before exiting the property via force main by the city of Eagle Grove, to the municipal wastewater plant. The grease is returned to rendering. The extent of our review focused on nine (9) lab analysis of the byproduct conducted by Midwest Laboratories, Inc from April 24, 2019, to May 28, 2024.

The analysis indicates that the product will be handled as a solid material with approximately 32.8% moisture. The product has approximately 33.6 lbs. of Nitrogen per Wet Ton. The measured Phosphorus was about 13.5 lbs. per Ton, Potassium measured about 0.5 lbs. per Ton. Sulfur measured about 0.6 lbs. per Ton and Zinc measured about 0.4 lbs. per Ton.

Nutrient availability depends on application methods and environmental conditions (soil pH, temperature and precipitation). Estimates for nutrient availability are historically derived from research conducted by the Land Grant college system. Little research exists on the typical nutrient availability of biosolids. However, due to the similarity in how nutrients become available through mineralization in the soil, using crop available nutrient estimates for liquid manure is acceptable. The University of Nebraska and Iowa State University are used as references for estimating plant available nutrients for the Prestage by-product.

We would expect 70-80% of the Phosphorus to be immediately available for plant use and 70-90% of the Potassium to be available in the first year.

Determining nitrogen availability is complex. The sooner the material is incorporated into the soil the profile, the higher the expected plant available nitrogen (other nutrient availabilities will remain the same). Ammonium Nitrogen (NH_{4+}) in the byproduct will be protected from volatilization by assimilating it with negatively charged clay particles in the soil profile. However, the Organic Nitrogen availability is subject to environmental conditions that influence its conversion to Ammonium Nitrogen or Nitrate (NO_3^-), namely soil temperature, soil moisture, aeration, drainage management and microbial activity. Iowa State University[1] and University of Nebraska-Lincoln[2] estimate that approximately 25-50% of total Nitrogen in solid manure will be plant available in year one. Due to the ratio of Ammonium Nitrogen and Organic Nitrogen in the material, a conservative estimate of total Nitrogen availability – if incorporated within 24 hours – would be approximately 45% in the first year.

Sodium applications should be limited to less than 170 lbs. per year to avoid toxicity. Sodium loading must be managed to preclude a reduction in infiltration (surface crusting), dispersion and migration of clay particles into soil pores, swelling of expandable clays, and a reduced ability of a cover crop to take up water. Sodium is considered de-stabilizing with respect to soil structure. The sodium adsorption ratio (SAR) is the ratio between sodium and calcium, plus magnesium in the effluent. For fine to medium textured soils, a SAR above 8.5 in the effluent can negatively affect the soil structure and/or infiltration rates of the soil. In these instances, calcium and magnesium (gypsum) should be added to reduce the SAR. The Cargill by-product has a SAR value of 0.79. In addition, the electrical conductivity of the soils should be monitored to maintain less than 4 mmhoms/cm. *If land applications follow recommendations by appropriately managing frequency and rate of application, no sodium issues are likely.*

The density of Nitrogen is the limiting factor in determining the application rate. Our recommendation of this material is to land apply it at a rate of approximately 7.0 Wet Tons per acre with immediate incorporation. This translates to approximately 2.3 dry tons per acre. A first-year plant available analysis of 112 – 173 – 4 – 6 – 1.5 lbs. /acre (N-P2O5-K2O-SO4-Zn) can be expected based on this rate. An estimated 35% of the total organic nitrogen and 80% of the ammonia nitrogen applied will be available to plants in the first year. If the material is applied at the same rate without incorporating within 48 hours, we estimate plant availability at of 96 – 173 – 4 – 6 – 1.5 lbs. /acre (35% of organic and 50% ammonia nitrogen). We estimate that 25% of the total organic nitrogen will be available to plants in the 2nd year following application and 15% would be available in the 3rd year following any application. The remaining amount would be lost to volatilization or leaching. If applications will be made in successive years, proper crediting of residual nitrogen should be employed based on crop removal, application rate, timing and total pounds applied.

[1] Sawyer, J.E., Mallarino, A.P. (2016). Using Manure Nutrients for Crop Production. PMR 1003. Pages 1-8. https://store.extension.iastate.edu/Product/Using-Manure-Nutrients-for-Crop-Production-PDF

[2] Shapiro, C. A., Johnson, L., Millmier, A., Koelsch, R.K. (2015). Determining Crop Available Nutrients from Manure. NebGuide. G1335. Pages 1-6. http://extensionpublications.unl.edu/assets/pdf/g1335.pdf

This recommended application rate will supply a significant portion of the Nitrogen of non-legume crop needs (depending on actual Nitrogen mineralization rates). Therefore, nitrogen from other sources should be managed accordingly. If the land application site has soil tests exceeding the very high range for phosphorus, applications at the recommended rate should be limited to once every two or three years. Fields with Phosphorus soil tests below the very high range can be applied at an annual basis if crop yields warrant it. Based on the analysis, the land application rate will not exceed the cumulative loading rates outlined in the Region VIII EPA's Biosolids Management Handbook for determining compliance with 40 CFR Part 503.

The material has a favorable nutrient density and as such, it can be utilized on a wide range of soils but should be targeted on soils testing in the very low to Optimum range for Phosphorus when planning annual land applications to achieve the greatest agronomic benefit. Supplemental phosphorus applications should follow Iowa State University Guidelines in PM 1688. Adequate soil conservation measures should be utilized to prevent phosphorus movement offsite in addition to following allow required setbacks and best management practices for application. Regular soil testing should be conducted following applications to monitor changes in soil characteristics.

This review is independent of any restrictions pertinent to specific field conditions (slope, erosion potential, etc.) and should be considered as such. Specific conditions in each land application site may require lower application rates to protect the public health, safety and welfare. Please refer to any land application site reviews for further recommended land application restrictions.

This product has the potential to provide significant agronomic benefit to landowners. Please feel free to contact us with any questions or concerns. Thank you for the opportunity to provide our input on your Project.

Sincerely,

Jim Nesseth

Certified Agronomist/CCA

License#: 17118

Andrew Nesseth

Environmental Consultant

Eagle Grove Cooperative – Eagle Grove, IA
99-SDP-06-19

Land Application Site Operation Plan

February 26, 2025

Land Application Permit Application Checklist Item 'P'
IDNR 567, Chapter 121.7(1)

a. Operation Plan Outline

1) See submitted aerial maps and well search maps.
2) See submitted soil maps.
3) See submitted review of sites by Extended Ag Services.
4) See submitted master site list table for site acres.
5) See submitted well search reports.
6) See submitted soil map tables and reviews.
7) See submitted soil map tables and reviews.
8) See submitted soil map tables and reviews.
9) Site soil sampling will be completed at each specific site used for land application in a season. Soil data will be analyzed and discussed in the annual agronomist reports.
10) See submitted soil map tables.
11) See attached Permit Renewal Application form, and Permit Renewal Application Checklist: Description of Material.
12) See attached analytical report from Midwest Labs.
13) See attached Permit Renewal Application form, Permit Renewal Application Checklist: Description of Disposal Process and Equipment, and byproduct review from Extended Ag Services.
14) See attached Permit Renewal Application form, Permit Renewal Application Checklist: Description of Disposal Process and Equipment, and byproduct review from Extended Ag Services.
15) See byproduct review by Extended Ag Services. Annual agronomist reports will discuss site soil information.
16) See byproduct review by Extended Ag Services. See analytics from Midwest Labs.
17) See submitted aerial and soil maps along with land application site reviews.
18) **Operational requirements of 121.7(1) "c" & "d".**
    c. Operating requirements for land application sites
        1) The general public and livestock will not be given access to the land application sites for two months after application, unless the Department grants variance to this rule.

2) Land application sites will be soil tested and those results will be analyzed and discussed by the agronomist in the annual agronomist report.
3) Land application will cease prior to a rain event or other runoff possibility.
4) Land application sites will not be used when frozen or snow covered conditions prohibit unless precautions are taken to avoid runoff.
5) If the department requires, a groundwater-monitoring program could be implemented.
6) In the event of significant leachate, the department will be notified and a plan for controlling that leachate will be submitted.
7) Sludge sampling will be performed annually at a minimum for all constituents required by the permit application. Additional sampling will be done as necessary.
8) All site application records will be maintained and submitted to the department on quarterly report forms and will be discussed further on annual agronomist reports.
9) If sites are no longer in use, the department will be notified to remove them from the Table 1.
10) If the department requires, closed sites will be monitored.

d. Additional operating requirements for land application. If any of the following additional operating items are required by the department, all efforts will be made to comply with those requests:
   1) Telephone on site.
   2) Sanitary facilities on site.
   3) Fence to control access to site.
   4) Permit copy on site.
   5) Signage containing name, permit number, closed to public and the owner's name and phone number.

Emergency Response and Remedial Action Plan for Eagle Grove Cooperative – Eagle Grove, IA & Environmental Land Management

A. Facility Information

***Permitted Agency**:* Eagle Grove Cooperative – Eagle Grove, IA

***DNR Permit Number**:* 99-SDP-06-19P-LAN

***Facility Description**:* Environmental Land Management (ELM) land applies industrial sludge generated by Eagle Grove Cooperative in Eagle Grove, IA. Land application site locations are on agricultural land in Wright County, Webster County, and Hamilton County, IA.

Responsible Official and Contact Information:
Jere Null, CEO, Eagle Grove Cooperative: 515-448-2904
Michael Klema, Director, ELM: 203-506-1814

***Project Location*:** Land application sites in Wright, Webster and Hamilton Counties, IA.

***Site and Environs Map**:* See submitted maps for sites listed on Table 1.

B. Regulatory Requirements: Eagle Grove Cooperative is seeking to renew a permit to operate an industrial sludge land application project at different spreading sites in Iowa in accordance with Chapter 455B of the code. This ERRAP has been developed by Environmental Land Management and is being submitted with other permit application documentation.

C. Emergency Conditions – Response and Remedial Action

1. Failure of Utilities: During the land application process, there is no reliance upon natural gas, liquid propane or electricity. All of the trucks and spreaders operate on gas or diesel engines.

2. Weather Related Events: In the case of violent weather or a natural disaster event (tornado, flood, intense rainfall), delivery of the material to land application sites would cease for the duration of the event and no land application would take place during such an event. If stockpiled material were moved by a tornado, all efforts would be made to recoup and re-pile the moved material. In the case of windstorms, material may be delivered to a land application site since the material would be heavy enough to resist blowing conditions, however, spreading activity would be limited, if any. If stockpiled material were eroded and moved by intense rainstorms, machinery would be used to push up and re-pile that material after the rainfall event was over. If stockpiled material were struck by lightning a stockpile

could catch fire, in which case water truck, loader and/or bulldozer would be dispatched to the stockpile for mitigation. Stockpiling in flood zones would be minimal and flood affects should also be minimal. However, if a flood affected a stockpile, any material that eroded away from the stockpile would be pushed up and re-piled after the flood recedes. In all weather conditions and events we can discontinue spreading or delivery until conditions improve or the event is over.

3. **Fire and Explosions**: The by-products do not have any history of catching on fire or exploding and they do not contain anything flammable or toxic. All trucks are equipped with fire extinguishers and radios/cell phones to summon assistance. If there was a disabled vehicle on the road, the truck can be towed back to the facility where the by-product can be transferred to a working vehicle. There are no fuels or utilities associated with this waste material. The material is loaded is loaded and unloaded outside and all working areas are outside, there are no indoor facilities associated. The by-product is cool when it leaves the production site and there are no gases associated with the by-products. There are no buildings associated with the transportation or stockpiling of this material so there are no evacuation procedures.

4. **Regulated Waste Spills and Releases:** The by-product materials consists of dewatered wastewater pretreatment solids. Unless there was a heavy rain event, there is typically minimal leachate present at a stockpile site. If there is leachate it is typically contained within 50 feet of the stockpile and cleaned up when loading the spreaders. There are no gases associated with theses by-products. It will be transported daily in a dump truck and deposited on approved land for storage until weather or seasonal conditions permit land application. There is no litter or airborne particulates associated with this material. There are no drainage systems associated with the land application sites. If an off-site release occurred during transport, equipment and personnel are in place for timely clean up and transfer. The IDNR spill response team as well as Eagle Grove Cooperative personnel will be notified in a timely manner.

5. **Hazardous Material Spills and Releases:** The by-products are not hazardous.

6. **Mass Movement of Land and Waste:** In the event of an earthquake, delivery would be ceased until conditions normalized. An earthquake should not affect an existing stockpile. Slope failure should not affect a stockpile of material due to the limitation of a stockpile being on a slope of 9% or less. If waste were to shift or subside due to an earthquake, slope failure, sinkhole, etc., machinery (excavators, loaders, or bulldozer) can be employed to recapture any material shifted.

7. **Emergency and Release Notifications and Reporting**:
   Jere Null, Eagle Grove Cooperative: 515-448-2904
   Dan Norman, Eagle Grove Cooperative: 515-448-2828
   Lee Hansen, ELM: 507-438-1580
   Michael Klema, ELM: 203-506-1814

David Klema, ELM: 617-461-2395
Local Fire Department: 911
Local Police Department: 911
Theresa Stiner, Iowa DNR: 515-725-8315
Iowa DNR Office #2: 641-424-4073
Iowa DNR Spill Response: Tel. 515-725-8694
Iowa DNR Spill Response notification due within 6 hours of spill/release
Iowa DNR Spill Report due within 30 days of spill/release

8. Emergency Waste Management Procedures: All transportation machinery is equipped with radios and/or operator cell phones and can immediately make contact for assistance in an emergency. There are multiple delivery sites and typically multiple route options in place for matters of weather and other circumstances. Deliveries to land application sites can be ceased at any time if necessary or wastes can be diverted to secondary options.

9. Primary Emergency Equipment Inventory: The trucks are equipped with communication devices, first aid and fire extinguishers. Heavy machinery and are also readily available if needed. Other water sources and hydrants will be available in certain locations.

10. Emergency Aid: Truck and machinery operators are equipped with communication devices if emergency aid is needed. In a medical emergency local emergency services would be contacted through 911.

11. ERRAP Training Requirements: Annual ERRAP training will be provided to personnel involved in the hauling and spreading activities by ELM management and attendees will be recorded. Training will include proper handling of the byproduct from the plant to the eventual land application site as well as emergency operations.

12. Reference Tables, Figures and Maps: Table 1 maps show the locations of the sites. Primary contacts are listed in the "Emergency and Release Notifications and Reporting".

Building a Better World for All of Us®

February 18, 2025

RE: Environmental Land Management
Engineer's Opinion of Probable Cost For
Industrial Sludge By-Product Disposal Land
Application Project – Eagle Grove Cooperative
Foods
Eagle Grove, IA
Wright, Hamilton and Webster County, Iowa

Theresa Stiner
IDNR Land Quality Bureau
6200 Park Ave
Suite 200
Des Moines, Iowa 50321

Dear Ms. Stiner:

The following engineer's estimate is to be used for the basis of financial assurance as required in IAC 567-121.8. The costs detailed below are based on a third-party land application of stored solid waste due to the permit holders failure to properly land apply wastes in accordance with 567-121.7. We have taken into consideration location, materials and the volume of storage available based on the information provided by Environmental Land Management.

The Eagle Grove Cooperative (formally Prestage Food) Pork Processing Facility in Eagle Grove, Iowa, is a pork processing facility. The facility produces an industrial sludge by-product which consists of dewatered wastewater pretreatment biosolids and animal bedding from the transport trailers. The maximum estimated storage volume of material is limited to approximately 5,250 tons stockpiles over a typical growing season (270 days). Annual material production is approximately 7,000 tons

The disposal area consists of 27 distinct sites: 17 sites in Webster County, 4 sites in Wright County, 4 sites in Hamilton County and 2 sites which span both Webster and Wright Counties.

Based on the production volume and the reporting and auditing requirements, it seems unlikely that vast amounts of material could accumulate without intervention. It is reasonable to assume that it is possible for a full growing seasons worth of material stockpile to accumulate. The following opinion of cost is based on the information above, and the notes on the following page:

Engineer's Estimate of Probable Cost

Item	Quantity	Cost	Total
Mobilization[1]	1 LS	$14,000	$14,000
Material Application[2]	5,250 TON	$16.50	$86,625
Management[3]	1 LS	$5,000	$5,000
TOTAL			$105,625

[1] Mobilization includes all costs associated with transportation of equipment, material and workers to multiple sites. Costs also include obtaining land, easements and soil tests necessary for application.
[2] Application includes loading and spreading costs are based on information submitted by Environmental Land Management and review of recent bids for land application of biosolids.
[3] Management includes all reporting requirements.

Please call if you have any questions.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Thomas K. Madden, PE
Project Engineer

c: Mike Klema, Environmental Land Management, 1602 – 11th Drive NE, Austin, MN 55512

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Thomas K. Madden, PE _____ 2/18/2025 (Date)

My License renewal date is: December 31, 2026
License Number: P15573
Responsible for the following sections:
All sections

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Prestage Foods Table 1 Master Land Application Site List: Permit # 99-SDP-06-19P

Site Name	Legal Description	Section	Township	Tier, Range	County	State	Acreage	Farmer Name
Durschmidt Hammer	SW 1/4 and W 1/2 of SE 1/4	8	Webster	T87N, R26W	Hamilton	IA	189	Jason Durschmidt
Durschmidt Blairsburg East	SE 1/4 of NE 1/4 & NE 1/4 of SE 1/4	19	Williams	T89N, R23W	Hamilton	IA	81	Jason Durschmidt
Durschmidt Blairsburg North	SE 1/4 of SW 1/4	18	Williams	T89N, R23W	Hamilton	IA	38	Jason Durschmidt
Durschmidt Blairsburg South	W 1/2 of NW 1/4 & NW 1/4 of SW 1/4	19	Williams	T89N, R23W	Hamilton	IA	122	Jason Durschmidt
Durschmidt Dows	SE 1/4	22	Vernon	T90N, R23W	Webster	IA	152	Jason Durschmidt
Harmon Davis	NW 1/4 of NW 1/4 & E 1/2 of NW 1/4 & N 1/2 of SE 1/4 & SE 1/4 of NE 1/4	18	Newark	T90N, R27W	Webster	IA	198	Sean Harmon
Harmon Newark 13	SW 1/4	13	Newark	T90N, R27W	Webster	IA	155	Sean Harmon
Harmon Newark 24	E 1/4 of NE 1/4 Sec 23; 1/2 of the NW 1/4 Sec 24	23, 24	Newark	T90N, R27W	Webster	IA	90	Sean Harmon
Harmon Newark 25-26-27	W 1/2 of NW 1/4 Sec 25; N 1/2 and N 1/2 of SW 1/4 Sec 26; NE 1/4 Sec 27	25, 26, 27	Newark	T90N, R27W	Webster	IA	573	Sean Harmon
Harmon Newark Troy 12-7	SE 1/4 Sec 12; SW 1/4 Sec 7	12, 7	Newark, Troy	T90N, R27W; T90N, R26W	Wright, Webster	IA	300	Sean Harmon
Harmon Newark Troy 13-18	SE 1/4 of SE 1/4 Sec 13; S 1/2 of SW 1/4 Sec 18	13 - Newark; 18 - Troy	Newark, Troy	T90N, R27W; T90N, R26W	Webster, Wright	IA	116	Sean Harmon
Harmon Sparboe NW	SW 1/4	16	Troy	T90N, R26W	Wright	IA	101	Sean Harmon
Harmon Troy 17-18	NW 1/4 Sec 17; E 1/2 NE 1/4 Sec 18	17, 18	Troy	T90N, R26W	Wright	IA	227	Sean Harmon
Harmon Troy 21	SW 1/4 and NE 1/4	21	Troy	T90N, R26W	Wright	IA	286	Sean Harmon
Harmon Troy 14	NE 1/4 and E 1/2 of NW 1/4	14	Troy	T90N, R26W	Wright	IA	228	Sean Harmon
Harmon Wagner	E 1/2 of SE 1/4, S 1/2 of NE 1/4	4	Newark	T90N, R27W	Webster	IA	155	Sean Harmon
Stanek Elkhorn 27-28	NW 1/4 Sec 27; E 1/2 of NE 1/4 Sec 28	27, 28	Elkhorn	T88N, R29W	Webster	IA	270	Jeff Stanek
Stanek Elkhorn 28-29-32	NW 1/4 of SW 1/4 Sec 28; SE 1/4 Sec 29; N 1/2 of SE 1/4 Sec 32	28, 29, 32	Elkhorn	T88N, R29W	Webster	IA	257	Jeff Stanek
Stanek Elkhorn 33	E 1/2 of NW 1/4 and W 1/2 of NE 1/4	33	Elkhorn	T88N, R29W	Webster	IA	136	Jeff Stanek
Pliner Allard 11	E 1/2 of NW 1/4	11	Douglas	T89N, R29W	Webster	IA	35	Alex Pliner
Pliner Gerken 5	NE 1/4 of NE 1/4	5	Clay	T87N, R29W	Webster	IA	27	Alex Pliner
Pliner Gerken 22	NE 1/4	22	Elkhorn	T88N, R29W	Webster	IA	131	Alex Pliner
Pliner Katnik 15	NE 1/4	15	Elkhorn	T88N, R29W	Webster	IA	127	Alex Pliner
Pliner Kendal 2	S 1/2 of NW 1/4	2	Clay	T87N, R29W	Webster	IA	65	Alex Pliner
Pliner Kendal 23	NW 1/4	23	Elkhorn	T88N, R29W	Webster	IA	149	Alex Pliner
Pliner Kendal 33	SW 1/4	33	Elkhorn	T88N, R29W	Webster	IA	144	Alex Pliner
Pliner Stinnett 11	SW 1/4	11	Elkhorn	T88N, R29W	Webster	IA	84	Alex Pliner

Farmer Name	Address	Phone
Sean Harmon - Harmon Farms	3510 NW 18th St, Ankeny, IA 50023	(515) 249-6555
Jeff Stanek	2703 Indiana Ave, Callender, IA 50523	(515) 351-9656
Alex Pliner	2510 Kansas Ave, Fort Dodge, IA 50501	(515) 570-2620
Jason Durschmidt	832 N 2nd St, Fort Dodge, IA 50501	515-570-6322