



PO Box 50004
Minneapolis, MN 55405

tel. 203.506.1814
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Wednesday April 15, 2026

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

Re: PB Leiner USA, Permit # 23-SDP-19-14P-LAN
Land Application of Solid Waste Permit Renewal Application

Ms. Stiner,

Enclosed is a land application permit renewal application for PB Leiner USA located in Dav-
enport, IA. Please note the following items about the permit renewal application package:

- The closure cost estimate has been revised to \$58,375. A copy of the updated surety bond rider is attached.
- There is one new land application site that has been added to the permit renewal application package: Kohnert Bowers. This site will be soil sampled in the coming weeks.

Please let us know if you require additional information for the permit renewal application.

Sincerely,

Michael Klema
Environmental Land Management, LLC

Cc: IDNR FO #6, 1023 W. Madison, Washington, IA 52353



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 # 23 -SDP- 19 - 14P -LAN

Section 1. Contact Information

Solid Waste Generator Name: PB Leiner USA Phone: 563-386-8040
 Address: 7001 North Brady Street City, State, Zip: Davenport, IA 52806
 Email: - Fax: 563-391-1138

Physical Location of Generating Facility:
 Address: 7001 North Brady Street City, State, Zip: Davenport, IA 52806

Responsible Official Name: Brenda Thornton Phone: 563-386-8040
 Address: 7001 North Brady Street City, State, Zip: Davenport, IA 52806
 Email: brenda.thornton@pbleiner.com Fax: 563-391-1138

Certified Professional Agronomist Name: Jim Nesseth, Extended Ag Services 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: 203-506-1814
 Address: PO Box 50004 City, State, Zip: Minneapolis, MN 55405
 Email: michaelklema@landspread.com Fax: -

Section 2. Waste Type

Does the material to be land applied contain free liquids¹? 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: Diatomaceous earth filter cake

Expected weight (tons) of solid waste to be land applied per year by the facility: 3,000 wet tons

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 (<i>permit renewals only</i>) <ul style="list-style-type: none"> 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)	<input checked="" type="checkbox"/>	
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)	<input checked="" type="checkbox"/>	
Analytical results	567 IAC 121.7(1)"a"(12)	<input checked="" type="checkbox"/>	NA
Evidence waste application will not cause adverse effects	567 IAC 121.7(1)"a"(15) through 567 IAC 121.7(1)"a"(17)	<input checked="" type="checkbox"/>	
Site Operation Plan	567 IAC 121.7(1)"a"(18)	<input checked="" type="checkbox"/>	
Emergency Response and Remedial Action Plan	IAC 567 102.14	<input checked="" type="checkbox"/>	
Site Closure Plan	IAC 567 102.12(10)	<input checked="" type="checkbox"/>	
Proof of financial assurance and closure cost estimate (only if material will be stored at application sites)	567 IAC 121.8	<input checked="" type="checkbox"/>	NA
Table of land application sites. Include the following for each application site: <ul style="list-style-type: none"> 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)	<input checked="" type="checkbox"/>	
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)	<input checked="" type="checkbox"/>	NA
Soil map	567 IAC 121.7(1)"a"(2)	<input checked="" type="checkbox"/>	NA
Water table levels	567 IAC 121.7(1)"a"(10)	<input checked="" type="checkbox"/>	NA
Location of wells within one mile of the site	567 IAC 121.7(1)"a"(5)	<input checked="" type="checkbox"/>	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)	<input checked="" type="checkbox"/>	NA
Site soil testing	567 IAC 121.7(1)"a"(9)	<input checked="" type="checkbox"/>	NA
Proof of ownership or legal entitlement to use the site (agreement with the land owner)	567 IAC 121.7(1)"b"(6)	<input checked="" type="checkbox"/>	NA

PB Leiner USA Davenport, IA
Permit # 23-SDP-19-14P
Iowa DNR Land Application Permit Application
Application Checklist

▪ **Executive Summary**

• **Summary of Modifications to Facility**

- There have been no new modifications to the facility for the current permit period.

• **Summary of Special Provisions**

- Special Provisions 1-11 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 15 wet tons per acre, per year of PB Leiner USA by-product generated at the PB Leiner USA facility in Davenport, Iowa as indicated in the permit application dated April 20, 2023 (Doc# 106414).
 - 2) The permit holder shall operate in accordance with IAC 567 Chapter 121 and the approved Operations Plan dates April 20, 2023 (Doc# 106414). 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 referenced documents 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. Application will not take place on slopes greater than 9%. Application on drainage pathways where erosion would be likely to occur during precipitative weather events 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. PB Leiner USA, 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) PB Leiner USA by-product must not be applied within 200 feet of occupied residences without written approval from the landowner of the residence. A 50

foot buffer must be maintained from a stream, drainage channel, waterway, tileline surface inlet, or shoreline of a pond. The by-product may be stored or applied up to 200 feet from a well at the Schurr Garlyn application site (see Permit Amendment #1).

- 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 result of this inspection shall be submitted to the DNR Main Office by April 1st 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 on October 1st.
- 9) If applicable, Manure Management Plans must be followed to ensure compliance with Iowa manure regulations. Nutrients from PB Leiner USA by-product must be added into the rate calculations of the current Manure Management Plan.
- 10) PB Leiner USA by-product is hereby authorized to be stored at approved land application sites as indicated on the maps attached to this permit. Storage of PB Leiner USA by-product is subject to the following conditions.
 - a) The maximum amount of stored PB Leiner USA by-product at a land application site must not exceed the amount that is to be land applied at that particular land application site.
 - b) Storage of PB Leiner USA by-product shall not exceed 270 days at any one time. PB Leiner USA 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.
- 11) The closure cost estimate dated April 18, 2023 in the amount of \$47,250 as prepared by Thomas K. Madden, P.E., of SEH and initial proof of establishment of a financial assurance mechanism in the amount of \$47,250 are hereby approved. The permit holder shall maintain Surety Bond #022023068 dated April 20, 2023 (Doc# 106465) established at Liberty Mutual Insurance Company, Eagan MN, as its financial assurance mechanism and agrees to comply with the requirements 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, July 25, 2023:

- a. Amend Special Provision #6 as follows:

6. PB Leiner USA by-product must not be applied within 200 feet of occupied residences without written approval from the landowner of the residence. A 50 foot buffer must be maintained from a stream, drainage channel, waterway, tileline surface inlet, or shoreline of a pond. The by-product may be stored or applied up to 200 feet from a well at the Schurr Garlyn application site.

- **Summary of Permit Amendment and New Variance Requests**

1. Additional Land Application Site Request:

- a. Kohnert Bowers

- i. See the attached additional site documents attached to this permit renewal application.

- **Description of Material**

The byproduct is a filtration material made up of diatomaceous earth and perlite used to filter impurities from gelatin. A description of the process and materials used is as follows: Cellulose, diatomaceous earth and perlite are added to filters with a series of small mesh screens. These materials build a mat on the surface of the screens that pulls out impurities. Over time, these filters get plugged and must be cleaned. Hot water is used to sluice off the filters. Cellulose, diatomaceous earth and perlite are filtered from the sluice and dumped into roll-off boxes for removal.

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

The equipment that will be used for transportation from the PB Leiner facility to the land application sites will be a roll-off container and truck. The material will be stockpiled until seasonal limitations allow or there is enough material to land-apply a specific location. From there the byproduct will be loaded into a pull-type spreader. The byproduct will be surface applied at appropriate agronomic rates and incorporated into the soil during normal cultivation times of the year. Land application of the byproduct will occur throughout the year except when precipitation is imminent and when crops being grown at the site prevent immediate application. The sites will produce primarily corn and soybeans, but alfalfa and/or wheat may be grown on any given year. The byproduct will be applied 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 filtration by-product does 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, the Department will be notified 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 most recent closure cost estimate, which is attached to this application. PB Leiner USA will provide a surety bond for the estimated amounts and a copy of the previous rider has been attached. The rider will be updated to reflect the updated current closure cost estimate.

- **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 previously submitted well search maps for permitted sites 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 previously submitted for all permitted sites and have done a new review for all new sites attached to this permit application. See all submitted soil loss information for permitted sites on Table 1.

- **Site(s) Soil Testing**

Initial site soil sampling 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 previously attached consent forms for all previously approved sites.



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: PB Leiner

Project Manager: LEE HANSEN

Reported:
 2025-06-16 09:25

Sample ID: DE
Laboratory ID: 1615987-01
Sampled Date/Time: 2025-05-28 13:00

Analyte	Result	Qualifier	MDL	Reporting		Method	Prepared	Analyzed	Analyst/ Container
				Limit	Units				
Total Metals									
Arsenic	<		1.1	mg/kg dry	EPA 6020	2025-05-30	2025-06-03	nto7 / (C)	
Barium	14.1		0.6	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Cadmium	<		0.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Calcium	411.4		30.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Chromium	2.2		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Copper	1.9		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Iron	1227		12.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Lead	<		6.0	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Magnesium	130.7		12.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Manganese	11.2		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Mercury	<		0.06	mg/kg dry	EPA 7471	2025-05-30	2025-06-04	mab7 / (C)	
Molybdenum	<		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Nickel	<		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Phosphate (P2O5)	382.3		27.6	mg/kg dry	Calculation	2025-05-30	2025-06-02	erw9	
Phosphorus	166.9		12.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Potash (K2O)	556.9		29.0	mg/kg dry	Calculation	2025-05-30	2025-06-02	erw9	
Potassium	464.0		24.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Selenium	<		1.1	mg/kg dry	EPA 6020	2025-05-30	2025-06-03	nto7 / (C)	
Silver	<		1.2	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Sodium	2345		24.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Sulfur	738.2		18.1	mg/kg dry	EPA 6010D	2025-05-30	2025-06-02	erw9 / (C)	
Zinc	9.5		2.4	mg/kg dry	EPA 6010D	2025-05-30	2025-06-05	erw9 / (C)	

Environmental Chemistry

Work Order: 1615987

The result(s) issued on this report only reflect the analysis of the sample(s) submitted. For applicable test parameters, Midwest Laboratories is in compliance with NELAC requirements. Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.



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 PO BOX 50004
 MINNEAPOLIS, MN 55405

Project: PB Leiner

Project Manager: LEE HANSEN

Reported:
 2025-06-16 09:25

Sample ID: DE
Laboratory ID: 1615987-01
Sampled Date/Time: 2025-05-28 13:00

Analyte	Result	Qualifier	Reporting			Method	Prepared	Analyzed	Analyst/ Container
			MDL	Limit	Units				
Environmental Chemistry									
Ammonia-N	70.6		25.1	mg/kg dry	SM 4500-NH3 C-2021	2025-05-30	2025-05-30	pes0 / (B)	
Chloride	187		125	mg/kg dry	SM 4500-Cl- E-2021	2025-06-03	2025-06-03	kjp4 / (A)	
Hexane Extractable Material (HEM)	62900		2000	mg/kg dry	EPA 9071B	2025-06-05	2025-06-05	atk5 / (A)	
Total Kjeldahl Nitrogen	39700		501	mg/kg dry	PAI-DK 01	2025-05-30	2025-05-30	pes0 / (B)	
Nitrate/Nitrite Nitrogen	1.2		1.0	mg/kg dry	EPA 353.2	2025-05-30	2025-05-30	NAM7 / (D)	
Organic Nitrogen	39700		501	mg/kg dry	Calculation	2025-05-30	2025-05-30	pes0	
pH @ 19.1°C	4.80			S.U.	EPA 9045D	2025-06-02	2025-06-02	cvn2 / (A)	
Percent Solids	39.91		0.01	%	SM 2540 G-2015	2025-05-29	2025-05-30	kpl8 / (A)	
Percent Volatile Solids	17.94		0.01	%	SM 2540 G-2015	2025-06-02	2025-06-03	kpl8 / (A)	
Total Carbon	11.73		0.25	% dry	ASTM D5373-08(mod)	2025-06-03	2025-06-03	krq0 / (B)	



507 Milwaukee St.
Lakefield, MN 56150-1177
507.662.5005 phone
507.662.5105 fax
info@extendedag.com

April 4, 2026

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 a review of the by-products generated by PB Leiner – Davenport. The analysis of the material was conducted by Keystone Laboratories, Inc and Midwest Laboratories from 2013 through 2025. A total of twelve samples were included in the review.

It is our understanding that the by-product is from a gelatin production facility. Gelatin is a purified protein derived from the selective hydrolysis of collagen. The by-product mix is made up of a cellulose, diatomaceous earth and perlite which are used to purify the collagen in the making of gelatin. The analysis from Keystone Laboratories, Inc indicates that the product will be handled as a solid material with approximately 37% moisture. The product is relatively low in nutrients of any kind, measuring 5.8 lbs. per Wet Ton of Nitrogen, 0.15 lbs. per Wet Ton of Phosphorus and 0.45 lbs. per Wet Ton of Potassium, respectively.

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. Research is being conducted on the typical nutrient availability of biosolids, however it is still somewhat limited. Due to the similarity in how nutrients become available through mineralization in the soil, using crop available nutrient estimates for dry manure is acceptable. The University of Nebraska and Iowa State University are used as references for estimating plant available nutrients for the Novozymes by-product.

We would expect 70-80% of the Phosphorus to immediately available for plant use and 70-90% of the Potassium to be available in the first year. The estimated Zinc and Sulfur availability in the first year would be approximately 60%.

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 (NH₄₊) 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 (NO₃⁻), namely soil temperature, soil moisture, aeration, drainage management and microbial activity. Iowa State University¹ and University of Nebraska-Lincoln²³ 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 40% in the first year.

Sodium applications should be limited to less than 170 lbs. per year to avoid toxicity (31 lbs applied at recommended rate). 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. An evaluation of this material indicates an adjusted SAR value of 9.61 on an as-received basis. 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 nitrogen content of this by-product consists primarily of Organic nitrogen. Application rates and frequency should balance crop removal rates with the nutrients applied from the by-product. Our recommendation of this material is a maximum land application rate of **15 wet Tons** per acre (5.6 Dry Tons). As such, a first year, plant available analysis of 35 – 4 – 7 lbs. per acre (N-P2O5-K2O) can be expected based on this rate. If the material is applied at the same rate without incorporating within 48 hours, we estimate plant availability at approximately 27 – 4 – 7 per acre (31% first year nitrogen availability). The following year, regardless of application method, approximately another 25% of the total applied nitrogen will be plant available and about 15% would be available in the 3rd year following an application. The remaining amount would likely be lost to volatilization. Actual availabilities are dependent on numerous factors and soil nitrogen should be determined by a representative soil test.

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>

³ Millmier-Schmidt, A., Wortmann, C., Iqbal, J., Koelsch, R. Proposed Changes to Nebraska Recommendations for Manure Nitrogen Credit. Website. <https://water.unl.edu/article/manure-nutrient-management/proposed-changes-nebraska-recommendations-manure-nitrogen-credit#ftn1> (Retrieved 4/4/2023)

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 above the very high range for phosphorus, applications at the recommended rate should be limited to *once every two years*. 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 can be targeted on soils testing in the high to very high range for Phosphorus⁴ when planning annual land applications. 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.

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

⁴ Iowa State University. A General Guide for Crop Nutrient and Limestone Recommendations.PM 1688 (Reprinted April 2011).

PB Leiner – Davenport, IA
Permit # 23-SDP-19-14

Land Application Site Operation Plan

April 8, 2026

Land Application Permit Application Checklist
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 reviews of sites.
- 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 annual 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
Environmental Land Management, LLC &
PB Leiner USA – Davenport, IA**

A. Facility Information

Permitted Agency: PB Leiner USA

DNR Permit Number: 23-SDP-14-19P-LAN

Facility Description: Environmental Land Management (ELM) manages land application of a filter cake byproduct generated by PB Leiner USA in Davenport, IA. Land application activity will occur on agricultural land in Clinton and Scott Counties.

Responsible Official and Contact Information:

Brenda Thornton, Plant Director, PB Leiner USA: 563-386-8040

Michael Klema, Director, ELM: 203-506-1814

Project Location: Various sites in Clinton County and Scott County, Iowa.

Site and Environs Map: See submitted maps for all sites on permit Table 1.

B. Regulatory Requirements: PB Leiner USA is seeking to renew a permit to operate an filter cake land application project at different spreading sites in Iowa in accordance with Chapter 455B of the code. This ERRAP has been developed by ELM and is being submitted with other permit renewal 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 our 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, there could be a chance of a stockpile catching fire, in which case water truck, loader

and/or bulldozer could 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 material consists of solids captured from a filtration process. Unless there was a heavy rain event, there is typically little 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 is transported daily in dump trucks 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 PB Leiner 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.

Emergency and Release Notifications and Reporting:

Brenda Thornton, PB Leiner USA: (563) 386-8040

Maybe Lopes Goncalves, PB Leiner USA: (563) 526-6609

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 Field Office #6: (319) 653-2135
Iowa DNR Spill Response: t. (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 should be 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:** Heavy machinery and water truck could be made 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:** ERRAP training will be provided to personnel involved in the 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®

April 8, 2026

RE: Engineer's Opinion of Probable Cost for
Industrial Wastewater Solids
Disposal Land Application Project – PB
Leiner, Davenport, Iowa
Clinton County, Iowa
Permit Number 23-SDP-19-14P
Environmental Land Management
Austin, Minnesota
SEH No. ENVLM 189512

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 holder's 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 PB Leiner Facility in Davenport, Iowa is a gelatin production facility. The facility utilizes diatomaceous earth, cellulose and perlite to filter the gelatin product. The filter material, along with the filtered impurities are to be land applied. It is our understanding that the material stockpile volumes associated with the crop growing season (9 months) is what needs to be considered for developing closure cost estimates. With this in mind, the estimated stockpile volume for the material accumulation is approximately Annual by-product production is approximately 2,250 tons. Based on the Facility's annual production of approximately 3,000 tons, this stockpile represents approximately 75% of the annual amount estimated to be applied in Iowa.

The disposal area consists of 5 distinct sites with a total of approximately 702 acres.

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 Cost⁴

<u>Item</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Mobilization ¹	1 LS	\$12,500	\$12,500
Material Application ²	2,250 TON	\$17.50	\$39,375
Management ³	1 LS	\$6,500	<u>\$6,500</u>
	TOTAL		\$58,375

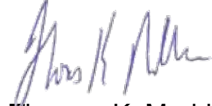
Notes:

- 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.
- ³ Management includes all reporting requirements.
- ⁴ The basis for determining the Engineer's Estimate of Probable Cost includes information from previous projects, bid results, input from contractors and engineering judgment. The Engineer's Estimate of Probable Cost is not to be taken as a bid or offer to perform the work at the costs noted. Actual costs can and will vary depending on timing, market conditions and contractor availability.

Please call if you have any questions.

Sincerely,


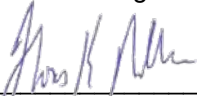
SHORT ELLIOTT HENDRICKSON INC.



Thomas K. Madden, PE
Project Manager

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

x:\aee\envl\m\189512\5-final-dsgn\55-reg-app\lpb leiner closure cost estimate .docx

	<p>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.</p> <p> _____ Thomas K. Madden, PE</p> <p>4/8/2026 _____ (Date)</p> <p>License Number P15573 My License renewal date is: December 31, 2026.</p> <p>Responsible for the following sections:</p> <p>All sections</p>
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GENERAL SURETY RIDER

To be attached and form a part of

Bond No. 022023068
 For IA Land Application of Wastes Bond
 Dated effective 04/23/2014 (MONTH, DAY, YEAR)
 Executed by PB Leiner USA Corp., as Principal, (PRINCIPAL)
 And by Liberty Mutual Insurance Company, as Surety, (SURETY)
 And in favor of State of Iowa (OBLIGEE)

In consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

INFORMATION	FROM	TO
Bond Amount	\$34,000.00	\$58,375.00

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective

04/23/2026

(MONTH, DAY, YEAR)

Signed and Sealed

04/08/2026

(MONTH, DAY, YEAR)



BY

Courney S. [Signature]

PB Leiner USA Corp.
PRINCIPAL

TITLE

Liberty Mutual Insurance Company
SURETY

BY

Kristin D. Thurber

Kristin D. Thurber, ATTORNEY-IN-FACT



POWER OF ATTORNEY

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint Kristin D. Thurber all of the city of Kansas City, state of MO its true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the following surety bonds, undertakings, recognizances, contracts of indemnity, and all other surety obligations related thereto, the execution of which shall be binding upon the Companies as if it had been duly signed and executed by its own officers:

Principal Name: PB Leiner USA Corp.

Obligee Name: State of Iowa

Surety Bond Number: 022023068

Bond Amount: See Bond Form

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 8th day of April, 2026.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: Nathan J. Zangerle
Nathan J. Zangerle, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 8th day of April, 2026, before me personally appeared Nathan J. Zangerle, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2029
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes Nathan J. Zangerle, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 8th day of April, 2026.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.


For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

PB Leiner USA - Permti # 23-SDP-19-14: IDNR Land Application Master Site List - Table 1

Site Name	Legal Description	Section	Township	Township	County	State	Acreage	Farmer Name	Landowner	Suitable Acres
Schurr1	E1/2 of SW1/4 & SE1/4	22	Grant	82 N, 2 E	Clinton	IA	231	Gary Schurr	Gary Schurr	231
Schurr2	N1/2 of NW1/4	26	Grant	82 N, 2 E	Clinton	IA	76	Gary Schurr	Gary Schurr	76
Schurr 3	N 1/2 of SW 1/4 & SW 1/4 of NW 1/4	26	Bloomfield	83 N, 3 E	Clinton	IA	75	Gary Schurr	Gary Schurr	75
Schurr Garlyn	SE 1/4 of NW 1/4 & SW 1/4 of NE 1/4 & W 1/2 of SE 1/4 & E 1/2 of SW 1/4	15	Bloomfield	83 N, 3 E	Clinton	IA	175	Gary Schurr	Garlyn Ag	175
Kohnert Bowers	SW 1/4	23	Grant	82 N, 2 E	Clinton	IA	142	Bob Kohnert	Connie Bowers	142

Farmer Name	Address	Phone
Gary Schurr	1982 200th Ave, Grand Mound, IA 52751	(563) 370-5420
Bob Kohnert	2018 200th Ave, Grand Mound, IA 52751	(563) 357-3854



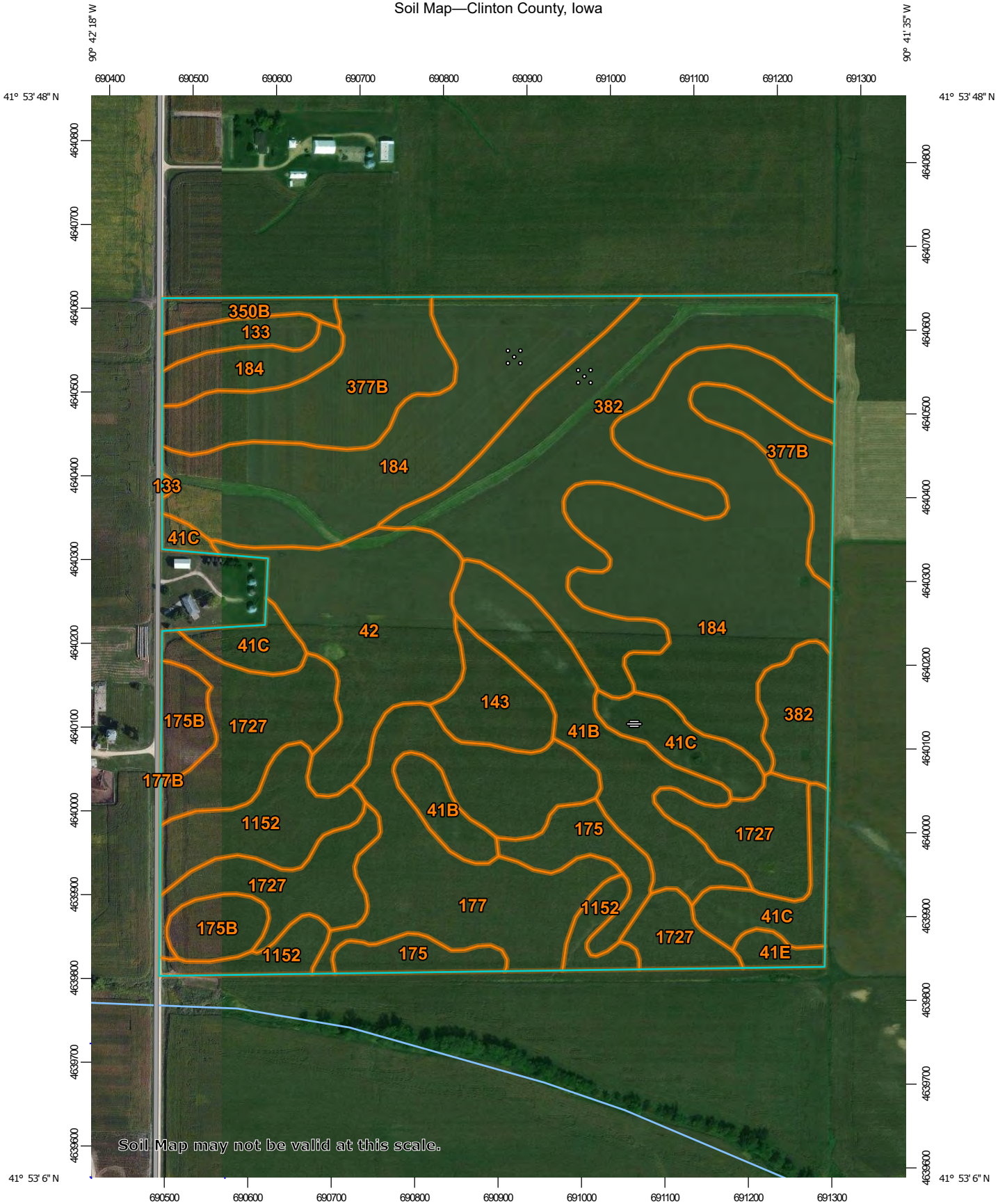
 Unsuitable for Land Application

Bob Kohnert Phone: (563)357-3854 Spreadable Acres: 142 Deliverable Tons: 1417

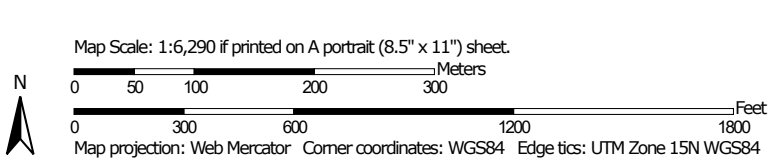
I certify I have followed all stockpiling and spreading rules provided by ELM.

Signature _____ Date _____

Soil Map—Clinton County, Iowa




Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clinton County, Iowa

Survey Area Data: Version 26, Jun 10, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 31, 2011—Jul 20, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
41B	Sparta loamy fine sand, 2 to 5 percent slopes	10.4	6.6%
41C	Sparta loamy fine sand, 5 to 9 percent slopes	7.6	4.8%
41E	Sparta loamy fine sand, 9 to 18 percent slopes	0.9	0.6%
42	Granby fine sandy loam, 0 to 2 percent slopes	11.2	7.1%
133	Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded	1.8	1.1%
143	Brady sandy loam, 1 to 3 percent slopes	3.2	2.0%
175	Dickinson fine sandy loam, 0 to 2 percent slopes	4.7	3.0%
175B	Dickinson fine sandy loam, 2 to 5 percent slopes	3.7	2.4%
177	Saude loam, 0 to 2 percent slopes	14.5	9.2%
177B	Saude loam, 2 to 5 percent slopes	0.0	0.0%
184	Klinger silt loam, 1 to 4 percent slopes	40.3	25.6%
350B	Waukegan silt loam, 2 to 5 percent slopes	1.4	0.9%
377B	Dinsdale silt loam, 2 to 5 percent slopes	11.4	7.2%
382	Maxfield silty clay loam, 0 to 2 percent slopes	22.4	14.2%
1152	Marshan clay loam, 0 to 2 percent slopes, rarely flooded	7.7	4.9%
1727	Udolpho loam, 0 to 2 percent slopes	16.4	10.4%
Totals for Area of Interest		157.5	100.0%

T Factor

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
41B	Sparta loamy fine sand, 2 to 5 percent slopes	5	10.4	6.6%
41C	Sparta loamy fine sand, 5 to 9 percent slopes	5	7.6	4.8%
41E	Sparta loamy fine sand, 9 to 18 percent slopes	5	0.9	0.6%
42	Granby fine sandy loam, 0 to 2 percent slopes	5	11.2	7.1%
133	Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded	5	1.8	1.1%
143	Brady sandy loam, 1 to 3 percent slopes	5	3.2	2.0%
175	Dickinson fine sandy loam, 0 to 2 percent slopes	3	4.7	3.0%
175B	Dickinson fine sandy loam, 2 to 5 percent slopes	3	3.7	2.4%
177	Saude loam, 0 to 2 percent slopes	3	14.5	9.2%
177B	Saude loam, 2 to 5 percent slopes	3	0.0	0.0%
184	Klinger silt loam, 1 to 4 percent slopes	5	40.3	25.6%
350B	Waukegan silt loam, 2 to 5 percent slopes	3	1.4	0.9%
377B	Dinsdale silt loam, 2 to 5 percent slopes	5	11.4	7.2%
382	Maxfield silty clay loam, 0 to 2 percent slopes	5	22.4	14.2%
1152	Marshan clay loam, 0 to 2 percent slopes, rarely flooded	3	7.7	4.9%
1727	Udolpho loam, 0 to 2 percent slopes	3	16.4	10.4%
Totals for Area of Interest			157.5	100.0%

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
41B	Sparta loamy fine sand, 2 to 5 percent slopes	>200	10.4	6.6%
41C	Sparta loamy fine sand, 5 to 9 percent slopes	>200	7.6	4.8%
41E	Sparta loamy fine sand, 9 to 18 percent slopes	>200	0.9	0.6%
42	Granby fine sandy loam, 0 to 2 percent slopes	0	11.2	7.1%
133	Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded	0	1.8	1.1%
143	Brady sandy loam, 1 to 3 percent slopes	30	3.2	2.0%
175	Dickinson fine sandy loam, 0 to 2 percent slopes	>200	4.7	3.0%
175B	Dickinson fine sandy loam, 2 to 5 percent slopes	>200	3.7	2.4%
177	Saude loam, 0 to 2 percent slopes	>200	14.5	9.2%
177B	Saude loam, 2 to 5 percent slopes	>200	0.0	0.0%
184	Klinger silt loam, 1 to 4 percent slopes	30	40.3	25.6%
350B	Waukegan silt loam, 2 to 5 percent slopes	>200	1.4	0.9%
377B	Dinsdale silt loam, 2 to 5 percent slopes	122	11.4	7.2%
382	Maxfield silty clay loam, 0 to 2 percent slopes	0	22.4	14.2%
1152	Marshan clay loam, 0 to 2 percent slopes, rarely flooded	0	7.7	4.9%
1727	Udolpho loam, 0 to 2 percen slopes	0	16.4	10.4%
Totals for Area of Interest			157.5	100.0%

Well Search



Print | Help |

Well Search Report Site: Kohnert Bowers

Included in search	No. of wells	Database
X	4	IGS well database General well database maintained by IGS, location accuracy varies 3,730 to 25 ft., last updated 8/2005.
X	0	Public wells Municipal and nonmunicipal public well databases maintained by IGS, location varies 3,730 to 25 ft., under development.
X	0	SDWIS public wells Public well database developed from the Safe Drinking Water Information System database maintained by IDNR, estimated locational accuracy varies from 15m. to 3300m. Created from 5/2005 data.
X	17	Private well tracking system IDNR database management system for Grants-to-counties-covered wells. Locational accuracy unknown, assumed to be +/- 17 m., Last update 7/2005.
X	7	Wells registered for testing Wells tested under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	1	Permitted private wells Wells permitted under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	3	Registered abandoned wells Wells abandoned under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	0	Water use facilities Wells used by facilities permitted to withdraw >25,000 gallons per day, locational accuracy is +/-20m to 1150 m. Created from 7/2005 data.
X	0	Municipal wells and intakes Locational accuracy 220 m., last updated 8/96.
X	0	Ag drainage wells Locational accuracy 100 m., last updated 4/98.

Well Search Detail

Subject: XY UTM Coordinates: 690883/4640232
Search Radius (mi): 1

IGS Well Database

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
364926	42304	T82N, R2E, 23, SE NE SE	Calc. +/- 470 ft.	1104 (m)	182	5/1/1996	Diercks, Bob	Bedrock Depth: 87 Well Type: Private
364352	63810	T82N, R2E, 27, NE NE SE SE NW	Unknown	870 (m)	245	2/20/2007	Kohnert, Bob	Bedrock Depth: 40 Well Type: Private
364187	60116	T82N, R2E, 22, SE SE NE	Calc. +/- 470 ft.	523 (m)	260	4/12/2005	Schurr, Gary	Bedrock Depth: 23 Well Type: Private
364411	11161	T82N, R2E, 27, SE NE NW	Calc. +/- 470 ft.	(m)	98	6/10/1959	Wilslef, Laura	Bedrock Depth: 25 Well Type: Private

Public Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
No records found from this data source								

SDWIS public wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
No records found from this data source								

Private Well Tracking System

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
364261	2198085	T82N, R2E, S23	nom. +/- 25m.	361 (m)	150	1/1/1970	BALSTER, DENISE	Status: Active
363439	2128737	T82N, R2E, S22	nom. +/- 25m.	(m)	75	1/9/1958	BERNER, KEN	Status: Active
364739	2132967	T82N, R2E, S14	nom. +/- 25m.	(m)	150	1/1/1988	BURZLAFF, DON	Status: Active
364955	2038471	T82N, R2E, S23	nom. +/- 25m.	1197 (m)	182	5/1/1996	DIERCKS FAMILY FARMS, LTD	Status: Active
364981	2094447	T82N, R2E, S24	nom. +/- 25m.	1254 (m)	155	1/1/1950	DIERCKS, ROBERT	Status: Active
365224	2105864	T82N, R2E, S25	nom. +/- 25m.	1489 (m)	150	6/1/1960	DIERCKS, TOM	Status: Active
364547	2198272	T82N, R2E, S26	nom. +/- 25m.	1406 (m)	195	12/5/2017	GOODELL, MATHIAS	Status: Active

364446	2174573	T82N, R2E, S27	nom. +/- 25m.	(m)	175	4/14/2014	HUSTON, BRITTANY	Logged Status: Active Logged
364527	2151391	T82N, R2E, S26	nom. +/- 25m.	1210 (m)	195	12/8/2010	IRVING, DAVID	Status: Active Logged
364831	2170049	T82N, R2E, S24	nom. +/- 25m.	1566 (m)	100	1/1/1960	KNUDSEN, MARY	Status: Active
364403	2126099	T82N, R2E, S27	nom. +/- 25m.	1033 (m)	35	1/9/1950	KOHNERT, BOB	Status: Plugged
364398	2124976	T82N, R2E, S27	nom. +/- 25m.	1050 (m)	245	2/20/2007	KOHNERT, ROBERT	Status: Permitted
364520	2080540	T82N, R2E, S26	nom. +/- 25m.	1148 (m)	100	1/1/1955	SCHOOP, ROBERT	Status: Active
364299	2107767	T82N, R2E, S22	nom. +/- 25m.	570 (m)	260	4/12/2005	SCHURR, GARY	Status: Active
364201	2081697	T82N, R2E, S22	nom. +/- 25m.	518 (m)	139	1/1/1960	SCHURR, GARY	Status: Active
364171	2144993	T82N, R2E, S23	nom. +/- 25m.	624 (m)	125	1/1/1960	WULF, LEROY	Status: Active
363311	2102922	T82N, R2E, S15	nom. +/- 25m.	(m)	260	8/20/2004	WULFCREST FARM INC.	Status: Active

Wells Registered For Testing

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
364837	12262	T82N, R2E, Sec. 23, NE, SE, SE	Calc. +/- 140m.	1210 (m)	182	1996	Diercks, Bob	Drilling method: Drilled;
365212	45837	T82N, R2E, Sec. 25, NW, NW, SW	Calc. +/- 140m.	1471 (m)	unkn	unkn	Dierckx, Tom	Drilling method: Drilled; Well depth is uncertain
364065	37061	T82N, R2E, Sec. 14, SW, SW, NE	Calc. +/- 140m.	(m)	unkn	unkn	Schnack, Janet	
364071	55578	T82N, R2E, Sec. 14, SW, SW, NE	Calc. +/- 140m.	1527 (m)	120	unkn	Schnack, Janet	Drilling method: Unknown; Known well depth
364072	33614	T82N, R2E, Sec. 14, SW, SW, NE	Calc. +/- 140m.	1537 (m)	unkn	unkn	Schnack, Janet	Drilling method: Drilled; Well depth is uncertain
364252	55120	T82N, R2E, Sec. 22, SE, SE, SE	Calc. +/- 140m.	590 (m)	280	unkn	Schoop, Robert	Drilling method: Drilled; Known well depth

364556	76290	T82N, R2E, Sec. 26, NW, SW, SE	Calc. +/- 285m.	1028 (m)	unkn	unkn	Schoop, Robert	Drilling method: Unknown; Well depth is uncertain
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Permitted Private Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
364924	28621	T82N, R2E, Sec. 23, SE, NE, SE	Calc. +/- 140m.	(m)	200	4/26/1996	Diercks Family Farms, Ltd	Primary use: household

Abandoned Wells (plugged)

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
364923	24145	T82N, R2E, Sec. 23, SE, NE, SE	Calc. +/- 140m.	1099 (m)	170	n.a.	Diercks, Family Farms Ltd	Well plugged: 5/16/1996; Well type: < 18" dia.
365014	24146	T82N, R2E, Sec. 24, SW, NW, SW	Calc. +/- 140m.	1312 (m)	100	n.a.	Diercks, Louise	Well plugged: 5/16/1996; Well type: < 18" dia.
365236	15345	T82N, R2E, Sec. 25, NW, NW, NW	Calc. +/- 140m.	1513 (m)	100	n.a.	Diercks, Louise	Well plugged: 9/1/1992; Well type: < 18" dia.

Water Use Facilities

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
No records found from this data source								

Municipal Wells And Intakes

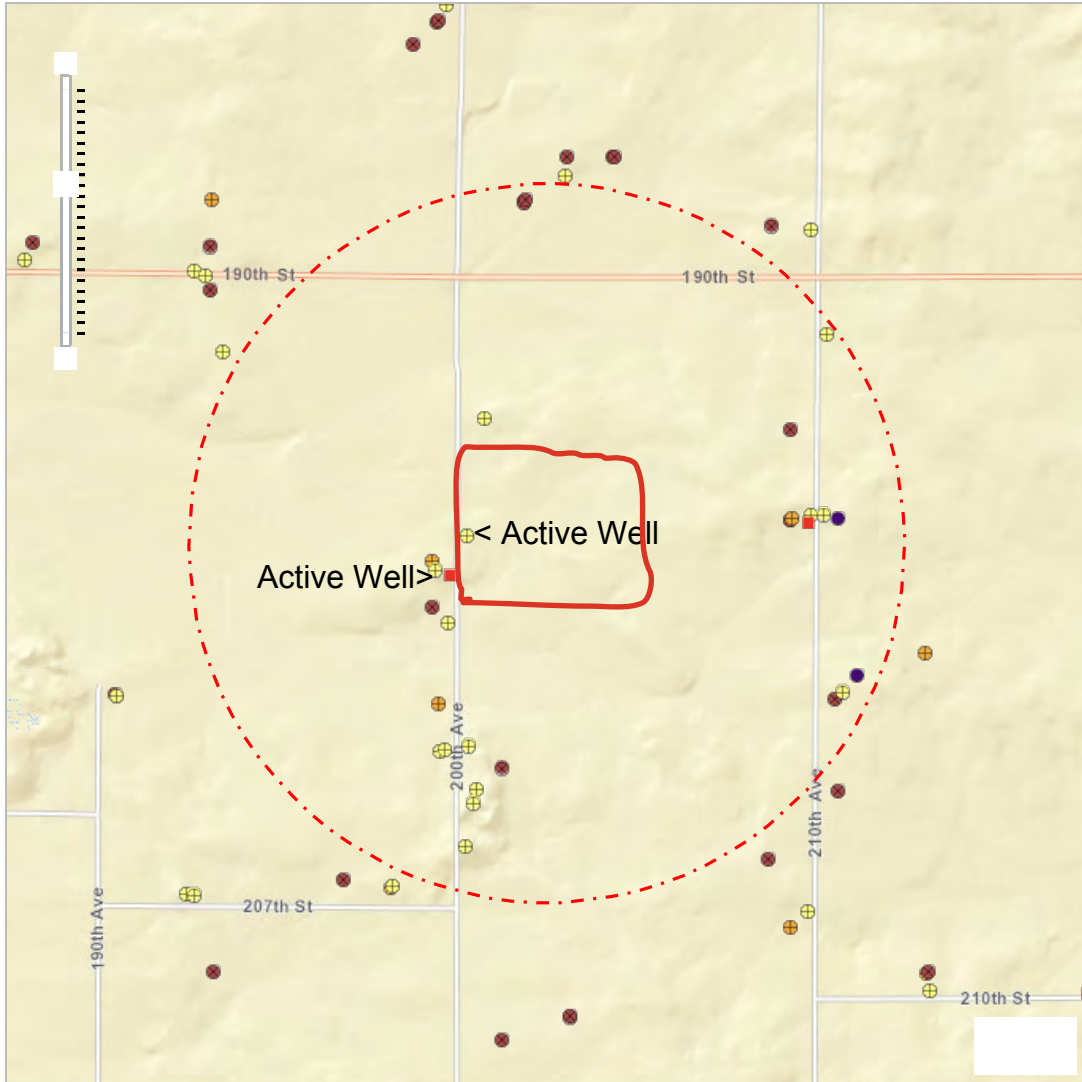
Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
No records found from this data source								

Ag Drainage Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
No records found from this data source								

Well Search Buffered Map

Subject: XY UTM Coordinates: 690883/4640232
Search Radius (mi): 1



Map Notes:

- UST
- ★ LUST
- ★ Wells

Please refer to the Accuracy column in Well Search Detail.

Since multiple points can be at the same spot (as those located to the center of a quarter section), points were randomly dispersed within 10 meters around that spot so all points can be seen.



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info@extendedag.com

April 2, 2026

Environmental Land Management

1602 11th Drive NE

Austin, MN 55912

RE: Review of Land Application Sites for Industrial Byproduct: PB Leiner

Michael,

We have completed our review of the proposed land application site for the PB Leiner facility. Thank you for the opportunity to provide our input on this project.

The following fields were included in this review, all acres are approximate:

Field Name	Acres
Kohnert Bowers	156.84
Grand Total	156.84

Imagery provided by the National Ag Imagery Program (2019) was utilized to determine whether land application sites were in crop production, pasture/hay or non-farmed land. Overall the land application sites have few limitations in regards to slope steepness, slope length and general erosion potential.

There are approximately 156.8 acres available for land application of the industrial by-product. The land application sites are a mix of soil textures, ranging from silty clay loams to clay loams with a significant amount of loamy fine sands/fine sandy loams, and sandy loams. Approximately 40.0 acres of soil are classified as loamy fine sand or a very fine sandy loam. Those soils should be investigated to determine if they have an acceptable soil texture for land application.

Approximately 99% of the tillable acres having acceptable slopes for the land application the PB Leiner byproducts (0-9%). According to the NRCS soil survey, 90.9% of the soils are classified as having slight erosion potential and the remainder are classified as having little to no erosion potential. Approximately 1.4% of the soils investigated are classified as Highly Erodible. Field specific planning and/or residue management should be utilized when applying the byproduct to reduce the potential for movement offsite, on all sites. Application can and should still be limited to areas with the lowest slope first and then be

directed to areas with structural controls in place to control soil erosion. The application of the byproduct is not expected to conflict with any Conservation Plans associated with the observed soils. A summary of slope ratings for all the potential land application sites is included below:

Slope Range	Acres
0-2%	81.56
1-3%	41.66
2-5%	24.38
5-9%	7.80
9-18%	1.45
Grand Total	156.84

Approximately 7.5% of the soils identified for potential land application are listed by the NRCS soil survey as frequently flooded. It is assumed that agricultural drain tile has been installed, to varying degrees, on soils with poor or somewhat poor drainage. Flooding frequency is not expected to be a limiting factor for land application. However, land application on saturated soils should be avoided at all times. Further, land application on fields with higher slope ranges and predicted rainfall within 24 hours should be limited. A complete breakdown of flooding frequency and drainage classes are shown below:

Flooding Frequency: Drainage Class	Acres
NONE	133.7
Poor	20.5
Somewhat poor	59.1
Well	25.9
Somewhat excessive	8.5
Excessive	19.7
OCCASSIONAL	11.3
Poor	11.3
FREQUENT	11.8
Poor	11.8
Grand Total	156.8

Determining appropriate land application rates for any by-product is dependent on the most restrictive variable. This can be either slope, erosivity, flooding potential, soil fertility levels, soil texture or byproduct characteristics, to name a few. The recommendations given herein are independent of any byproduct reviews and only consider the known field characteristics discussed in this review.

Application rates of approximately 12 Wet Tons per acre are appropriate for the slope conditions of the land application sites discussed in this review. Appropriate measures should be taken to ensure minimal movement of the waste respect to adequate setbacks from sensitive features (surface water, karst features, conduits to water and high slopes) and land application rates. Special care should be given to applying wastes no less than 48 hours prior to rainfall events of greater than 0.5 inches. Wastes should be incorporated whenever possible, if such practices do not conflict with existing NRCS conservation plans.

Applications of organic by-products can result in improved soil fertility, tilth and structure, if properly managed. The soils and parent material on the proposed land application site are naturally acidic to pH neutral in nature. Agricultural lime should be used to ensure the soil pH is above 6.0 prior to land application of any byproducts.

Summary

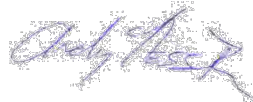
The specified land application material should be evaluated for constituents that pose a risk to the general health and welfare of the public. In general, land utilized for the land application of solid waste containing nutrients needed for pasture or crop production will benefit from such applications. Careful consideration should be taken to ensure nutrients are not applied at levels greater than crop need, once soils have reached the high fertility range as defined by Iowa State University.

In summary, we believe the field conditions are very suitable for land application of solid wastes done in accordance with all applicable rules, permits and laws. If you have any questions, please do not hesitate to contact us.

Sincerely,



Jim Nesseth
Certified Agronomist
License #: 17118



Andrew Nesseth
Environmental Consultant
NRCS Technical Service Provider

Contractual Consent of Landowner

Landowner, Lessee and/or Landoperator:

Robert Kohner

Description of byproduct to be stored and land applied on site(s): PB Leiner USA is a gelatin production facility in Davenport, IA. During the gelating production process diatomaceous earth and perlite are used to filter impurities from the gelatin to create the resulting filter cake byproduct.

Byproduct is generated from: PB Leiner USA - Davenport, IA

Analysis of byproduct on a "dry" basis:

***Analysis is not guaranteed for agronomic value. Byproduct output will be variable.

***Percentages based off of an average. Mg/kg are most recent sample results.

Total Solids	37.3 %	Arsenic	none detected
pH	6.6	Barium	14.1 mg/kg
Tot.Kjeldahl Nitrogen	0.80 %	Cadmium	none detected
Ammonia Nitrogen	0.09 %	Chromium	2.2 mg/kg
Phosphorus	0.02 %	Copper	1.9 mg/kg
P2O5	0.05 %	Manganese	11.2 mg/kg
Potassium	0.06 %	Mercury	none detected
K2O	0.07 %	Molybdenum	none detected
Chloride	0.01 %	Nickel	none detected
Sodium	0.287%	Selenium	none detected
Zinc	9.5 mg/kg	Silver	none detected
		Lead	none detected

***Check with your Agronomist to verify that these nutrients and other constituents are not harmful to the crops you are growing during the coming year.

I have reviewed this information and am authorized to hereby give permission to PB Leiner and Environmental Land Management, LLC to store and land apply byproduct on the spreading sites. If, in the future, I decide not to allow PB Leiner and Environmental Land Management, LLC to store and land apply the aforementioned byproduct on these sites, I will inform them before it is delivered to the sites.

Signed:

Robert Kohner

Date:

3-24-26