



ProAg Engineering, Inc.

Nicholaus J. Rowe, P.E.
77402 U.S. Highway 71
P.O. Box 181
Jackson, MN 56143
507-849-7200
nic@proageng.com

Justin D. Sprague, P.E.
302 Broadway Street
Audubon, IA 50025
712-563-2168
justin@proageng.com

2 September 2022

Ms. Theresa Stiner
IDNR
502 E. 9th Street
Des Moines, IA 50319

RE: Skunk River Compost
Proposed Compost Facility
Jasper County, Iowa
ProAg Project No. 21-123

Ms. Stiner:

On behalf of Mr. Randy Vankooten and Skunk River Compost, we are now submitting supporting documents as requested in your Permit renewal letter dated July 24, 2025.

Enclosed please find the following:

- Section A. Executive Summary
- Section B. Site Map
- Section D. Site Operation Plan
- Section F. Site Closure Plan
- Summary of actions resulting from NOV dated July 14, 2025

We trust the above information is adequate for your review and approval. Should you have any questions, please do not hesitate to call me at 712-563-2168.

Respectfully submitted,



Justin D. Sprague, P.E.
ProAg Engineering, Inc.

Enclosures
cc: Randy Vankooten

SECTION A. EXECUTIVE SUMMARY

Summary of Modifications

Trial Approval, granted June 9, 2023

Granted permission to accept one load of filter cake from Proctor and Gamble for trial.

Inspection, June 26, 2023

Comments in the inspection form noted that the aeration system needs to be part of the operation plan.

Trial Approval, granted July 21, 2023

Granted permission to accept filter cake from Proctor and Gamble for the trial to continue until October 21, 2023.

Trial Approval, granted August 18, 2023

Granted permission to accept soap and shampoo from Proctor and Gamble on a trial basis until October 21, 2023.

Summary of Permit Amendments

Amendment 1, granted October 13, 2022

Authorized use of source-separated food waste as feedstock.

Amendment 2, granted April 10, 2023

Authorized use of dewatered septage as feedstock.

Amendment 3, granted October 27, 2023

Authorized use of industrial waste as feedstock and allows for storage of carbon materials at a satellite site (north site).

Amendment 4, granted February 19, 2025

Authorized the construction and use of a receiving and mixing area.

Amendment 5, granted June 3, 2025

Authorized use of dead animals as feedstock.

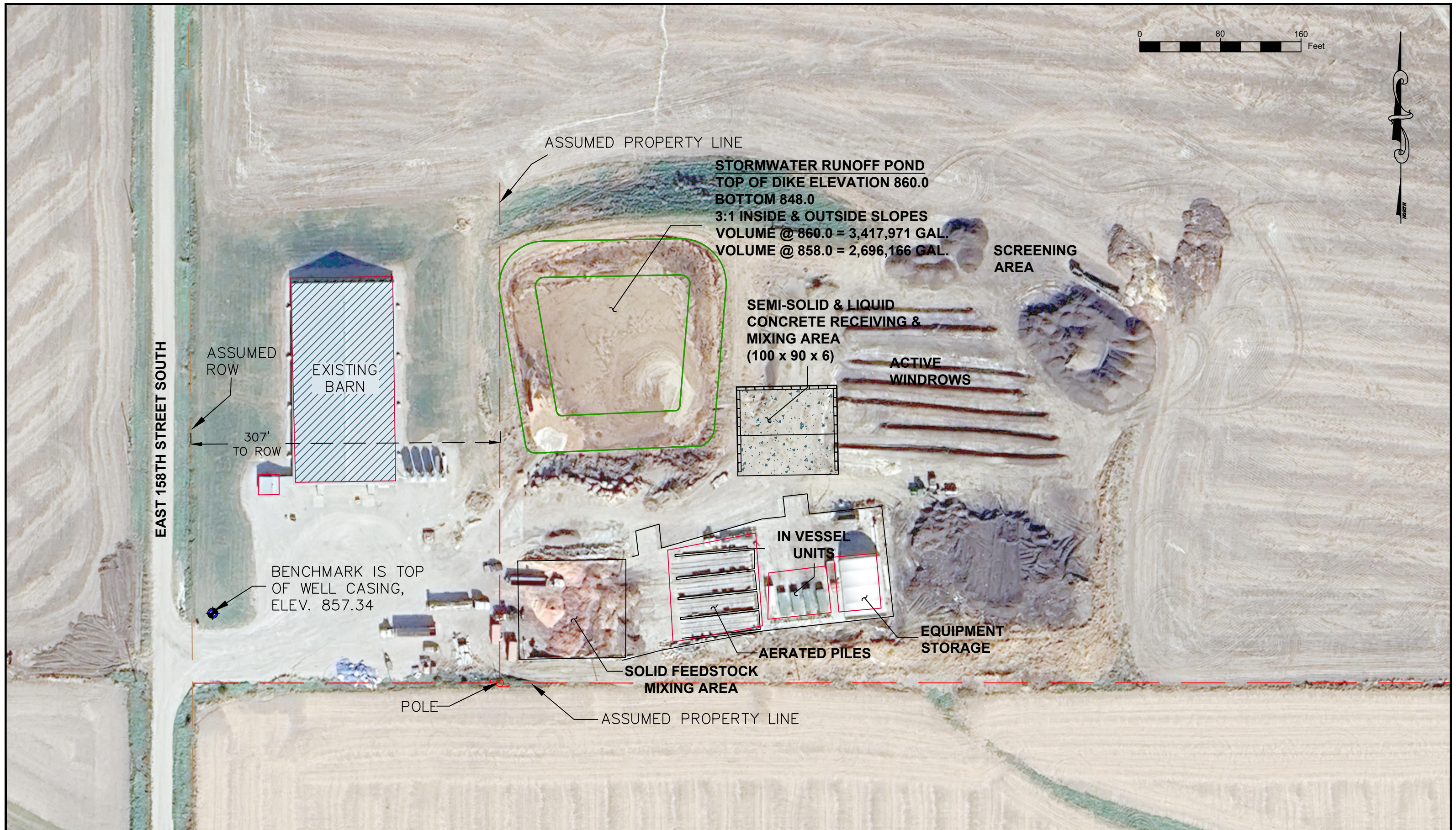
These amendments shall remain in the permit renewal.

New Permit Provision Requests

No new permit provisions are requested at this time.

SECTION B. SITE MAP

Enclosure (1)



0	9/03/25	MIXING AREA	TMW	JDS
REV	DATE	DESCRIPTION	DRN BY	CHK BY

ProAg Engineering, Inc. 77402 U.S. Highway 71, P.O. Box 181 Jackson, MN 56143 (507) 849-7200	SKUNK RIVER COMPOST 10594 EAST 158TH STREET SOUTH LYNNVILLE, IOWA 50153	COMPOST SITE NE 1/4, SECTION 24, T-78-N, R-17-W JASPER COUNTY, IOWA	SITE PLAN	
			DRAWING NO. 21-123	SHEET NO. 1 OF 1

SECTION F. SITE OPERATION PLAN

(revised August 2025)

This Operating Plan has been revised to reflect current operations.

FEEDSTOCK

The operation is currently authorized to accept and compost up to 3,500 tons of treated sludge from the Grinnell wastewater treatment facility, dewatered septage, industrial waste, dead animals, and source separated food waste annually combined with bulking agent.

All waste streams, including semi-solid and liquid wastes, will be accounted for in the site operation's records, and all waste streams will be approved by DNR prior to being admitted to the facility. The semi-solid and liquid waste are expected to be transported in 7,000-gallon tankers, with approximately 1 tanker to be delivered during each day of operations.

Solid wastes are expected to be transported in various trucks and trailers with multiple deliveries during each day of operations.

BULKING AGENT

All bulking agent will be stored approximately 0.9 miles north of the compost site on the south side of Timber Avenue, referred to as the North Site. The bulking agent will be transported to the compost site where it will be mixed with the feedstock. No waste streams will be delivered to and no composting will occur on the North Site.

RECEIVING AND MIXING

Solids Receiving Mixing Area

All trucks and trailers delivering solid waste feedstocks will empty the product on the concrete receiving and mixing area at the entrance to the site. This area has a concrete floor and precast walls to contain the feedstock and allow mixing.

Bulking agent will be added to the feedstock to achieve a C:N ratio range of 25:1 to 30:1 and a moisture content of 45-65%. The feedstock will be mixed with the carbon stock (bulking agent) on day the waste was received or within 24-hours of delivery, whichever comes sooner. The mixed compost may remain in a static pile in the mixing area to begin the active compost process until it is moved to windrows. Sufficient area must remain on the concrete pad that will allow for additional feedstock to be received and mixed, and this area must remain in the contained area with all runoff direct to the stormwater runoff collection.

Semi-solid and Liquid Receiving and Mixing Area

All tankers delivering semi-solid and liquid waste feedstocks will discharge the waste in the proposed concrete receiving and mixing area. This structure will have a concrete floor and concrete precast walls to contain the waste, allow mixing, and temporarily hold the mixed compost until it can be placed in the aerated piles.

Throughout the day, additional carbon stock shall be spread and mixed with the feedstock to achieve a C:N ratio range of 25:1 to 30:1 and a moisture content of 45-65%. Finely processed carbon sources are recommended as the base layer, but coarse sources are recommended to achieve the C:N ratio and decrease the bulk density.

At the end of each day's operations, the liquid receiving and mixing area shall be clear of mixed feedstock. A layer of carbon stock, minimum 12" deep, shall be placed on the concrete floor of the area. This carbon stock is intended to absorb any remaining free liquid as well as prepare the operation for the

following day's deliveries. All feedstock must be mixed by the Facility operator before leaving the site on the day the waste was received or within 24-hours of delivery, whichever comes sooner. Sufficient area must remain on the concrete pad that will allow for additional feedstock to be received and mixed, and this area must remain in the contained area with all runoff direct to the stormwater runoff collection.

METHODS OF COMPOSTING

The following descriptions are included to describe the general composting methods that will be used as part of the operation. Each method is required to be monitored separately to ensure a finished compost product.

WINDROWS

The mixed feedstock shall be spread in windrows 10-feet wide and 5-feet high, or a size appropriate for equipment used on the site. Windrows must allow for drainage between windrows and wheeled traffic throughout the site. The time required for composting in windrows will vary according to the weather and seasons. The solid waste feedstock will be composted primarily in windrows.

FORCED AIR PILES

The site contains a forced air system, including a 140' x 100' aeration floor separated into four bays with three 75' air channels connected to a controlled air supply. Prepared feedstock will be piled in the forced air bays in the same manner as the windrows. Forced air composting has the advantage of maintaining the optimal oxygen levels which can accelerate the rate of decomposition of the organic material without requiring further handling or turning. The aeration will be controlled from the Controls container and may be monitored remotely by the operations manager. This system is estimated to take three weeks to achieve adequate composting temperatures and an additional three weeks to cure. The semi-solid and liquid feedstock received in the semi-solid and liquid receiving area will be composted primarily in this area.

IN-VESSEL UNITS

The site contained four enclosed composting containers approximately 20' x 8' x 8' for in-vessel composting. These containers provide further control over the composting processes by containing it in an enclosed environment. The enclosed system helps contain odors, leachate, and the loss of moisture and also prevents pests. The mechanical aeration actively manages the airflow with fans to maintain the aerobic conditions. The aeration will be controlled from the Controls container and may be monitored remotely by the operations manager. The containers use a batch process (all in, all out), and the process is greatly accelerated when compared to the windrows. The treated sludge and dewatered septage feedstocks will be composted primarily using the in-vessel units.

MONITORING

Each windrow, pile, or vessel will be monitored independently and detailed records maintained for each. The temperature of the compost must be raised to 40°C or higher and maintained for a 5-days. During that 5-day period, the compost must exceed 55°C for one continuous 4-hour period. Each pile or windrow should complete no less than three temperature cycles. Temperature readings should be taken daily or as needed to confirm temperature cycles. When the windrow temperature decreases passed the predetermined temperature, it is recommended to turn the windrow to speed the composting process. Windrows should not be turned early because of the potential for objectionable odors. Aerated and in-vessel piles do not require turning. The operator should take note of wind direction and other weather patterns that could carry odors to any nearby residences. Moisture readings are taken at the same time as temperature readings to maintain a moisture level between 45-65%. If moisture levels are too high, additional bulking agent or co-compost should be added to the compost when turning. If moisture levels are too low, liquid from the stormwater runoff pond may be added. During winter months, the composting process may slow by 50%, but operations will continue as planned.

LAND APPLICATION

When each batch of compost is finished and cured, it may be combined with other batches or serve as co-compost for future batches. The cured field-ready compost will be land applied to agricultural production ground or perennial pasture as a soil amendment. The land application records shall be maintained. The facility is designed to store up to six months of active and finished compost to allow for land application twice per year, in the spring and fall.

SCREENINGS

After the compost has cured and before it is land applied, the finished product will be screened. The screening process removes oversized material, improves uniformity, and spreads more evenly. This process will also occur on the compost site.

RECORDKEEPING

Recordkeeping requirements remain unchanged, and the Facility will complete the Annual Composting Facility Report, DNR Form 542-8014.

SECTION H. SITE CLOSURE PLAN

The Skunk River Compost (Facility) receives the Grinnell Wastewater Treatment Facility (Grinnell) treated sludge located in Grinnell, Iowa, under agreement. The operation is also authorized to accept and compost dewatered septage, industrial waste, dead animals, and source separated food waste annually combined with bulking agent. The agreement with Grinnell and other feedstock suppliers may be terminated by either party, but at least ninety (90) calendar days must be given prior to the proposed termination date. Once the notice of termination is made, the Facility will petition IDNR for a modification to the permit to include alternate sources for feedstock or decide to close the operation

When the decision is made to close the operation, the facility shall submit an updated closure plan, including a schedule for closure to the IDNR at least sixty (60) calendar days prior to the proposed termination date.

Unless an alternative schedule is approved by the IDNR, all waste and unfinished and finished compost shall be removed from the premises within six (6) months of the facility ceasing operation.

Upon closure, the Facility will:

- a. The facility shall compost all remaining feedstock, to include curing. All organic material shall be land applied. Bulking agent and any other organic material shall be properly disposed. Any other solid waste or litter shall be removed from the premises.
- b. Lock all doors, gates, entrances, and exits.
- c. Report the completion of these activities to the local political jurisdiction, the department, and the department field office servicing the composting facility.

SUMMARY OF ACTIONS

The following is intended as a summary of the actions taken by Skunk River Compost following the letter from Bill Gross dated July 15, 2025.

Complaint No. 35108, North Site received milk wash water.

- The mixed compost from the North site is being moved to the compost site.
- The Operations plan included in the Permit Renewal application has been updated and prohibits any feedstock from being received on the North Site.
- Only bulking agent will be stored on the North site.

Complaint No. 35153, Unscreened compost stockpile.

- The stockpiled compost has been screened and land applied.
- The Operations plan included in the Permit Renewal application has been updated and includes screening the compost on site only.
- No screening of compost products will be conducted by the operation off-site.

Complaint No. 35196, Stormwater.

- The runoff has been removed from the basin.
- The footprint of the North Site is being actively reduced to minimize stormwater runoff going to the basin.
- Clean water diversions will be maintained around the North Site.