

January 5th, 2024

Jamey Ayling
Planning Director
Kittitas County Community Development Services
411 North Ruby Street, Ste 2
Ellensburg, WA 98926

Re: Letter of Concern 3 regarding Kittitas County Conditional Use Application CU-23-00001

Mr. Ayling,

This letter incorporates herein all our concerns as expressed in our 3.7.2023 and 5.26.2023 Letters of Concerns which I have included with this updated letter for your convenience.

None of the applicants' proposals thus far have successfully alleviated our concerns—they have in fact enhanced them.

We have listed additional questions and concerns below.

We wish to be notified when the Public Hearing is scheduled for this project and/or if any additional applications or addendums submitted for this application.

Thank you,

Matthew Vaughan
Arriane Bright
Shannon Bright
2715 Willowdale Rd
Ellensburg, WA 98926
laaksoon@outlook.com

QUESTIONS AND CONCERNS REGARDING KITTITAS COUNTY CU-23-00001

Questions and concerns regarding the use of an Aerobic Pond for the treatment of sewage waste from meat processing and the potential for negative impact on water resources and odor emanating from the pond

Included within this reapplication is a document headed "Sunnyside Meats, Inc. Waste Water Treatment System. They refer to an Orenco AdvanTex AX20 System¹. It is not clear what the association is with this document and the re-application, but it implies the use of the Orenco AdvanTex AX20 System. This

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system is “primarily for a residential system,” and clearly not intended for the processing of waste from a meat processing plant and all the chemicals used to sanitize the plant and limit water consumption.

Does the organic waste from the slaughterhouse breakdown satisfactorily so as to pose no threat to the environment?

“Organic waste collection and processing produces wastewater that varies significantly based on the incoming organic waste, which can be unpredictable. [...] Treating this wastewater is especially difficult due to the presence of emulsified oils. These oils cannot be removed from wastewater until the emulsion is broken, leading to high levels of biological oxygen demand (BOD), total suspended solids (TSS), and fats, oils, and greases (FOG).”²

“Slaughterhouse waste possesses all of the necessary qualities to be classified as hazardous waste requiring specific care. The amount of waste produced is determined on the type of animal slaughtered and its level of fattening.”³

Concerns about the effluent from the aerobic pond being sprinkled on the site—will it contaminate ground water (particularly during times of seasonal flooding where it is likely to flow into Lyle Creek), will the spray be carried in the wind to adjoining properties and potentially contaminate them?

“Slaughterhouse biowastes are a significant volume of biohazards that poses a high risk of contamination to the environment, an outbreak of diseases, and insecure food safety.”⁴

“An aerobic ponds are built with a depth of 2 to 5 m and have a relatively short detention time of one to seven days. Facultative ponds should be constructed with a depth of 1 to 2.5 m and have a detention time between five and 30 days.”⁵ Do the potential contaminants associated with meat processing have a detention time between five and 30 days or is the detention time for organic waste from meat processing more than this 30 days, if so, how much in excess of 30 days? What of the chemicals used to sanitize the facility and treat the water—are they decomposed at all in an aerobic pond and if not, how will they potentially affect the ground water and aquifer? Does the proposed pond have sufficient capacity to satisfactorily break down the waste?

“Recent Research on Bacteria Concentrations from ATS [Aerobic Treatment Systems]—Pathogenic bacteria have the potential to contaminate creeks and streams during rainfall events. Reports of human illness are associated with swimming, drinking or ingesting contaminated water with E. coli and fecal coliform bacteria. “Fecal coliforms are bacteria that are associated with human or animal wastes.” The USEPA has set a Maximum Contaminant Level Goal (MCLG) for fecal coliforms at zero for drinking water. According to the USEPA “Escherichia coli (E. coli) is a type of fecal coliform bacteria... found in the intestines of animals and humans. ...E. coli is a strong indication of recent sewage or animal contamination. ...Sewage may contain many types of disease-causing organisms” (USEPA, 2013a).

[Aerobic Treatment Systems] ATS Homeowner Recommendations

- Do not use ATS effluent to irrigate crops or consumable plants. Bacterial contamination is transmitted to humans or animals through contaminated water or crops (CDC, 2012).
- Do not allow children to play near ATS discharge effluent disposal field where ponding or soil saturation may occur and potentially cause illness (CDC, 2012).

- Do not discharge treated effluent near a stream or creek, potentially contaminating surface waters (ODEQ, 2012).
- Do not allow animals to consume ATS -treated water.
- Human contact with ATS-treated water should be avoided.
- [...]
- Large systems or industrial facilities generating greater than 1,500 gallons/day of water and/or industrial facilities should not use ATS (ODEQ, 2012). *[Note: within this reapplication Fuller Consulting Water Usage Assumptions at a reduced rate is estimated 250 gallons per head x 30 head = 7,500 gallons per day which is substantially more than 1,500]*
- Do not allow ponding or soil saturation to occur; runoff and soil leaching potentially leads to creeks, streams or rivers (USEPA, 2013a).⁶

Will there be odor associated with the pond?"

"[...] an aerobic pond(s) may generate bad odours. It is thus important to locate the ponds far from settlements."⁷ While this site has a small footprint compared to Schaake's it is in no way insignificant—it is extremely close to residential properties and the waste associated with meat processing takes substantially longer to break down than animal feces.

Concerns regarding the storage/freezing of offal while awaiting transport.

It is unclear what the capacity is for "frequent pick-up" or if that capacity is sufficient. "A general rule of thumb is that one cubic foot of freezer space holds 25 pounds of meat."⁸ The 30 (animals a day) x 370 lbs. (of offal per animal for beef as cited in our earlier letter of concern) = 11,100 x 5 (days a week) = 55,500 lbs. per week. 1 cubic foot per 25 lbs./55,500 ÷ 25 = 2,220 cubic feet of offal in one week.

Concerns regarding the diversion of water from the large footprint of aerobic pond.

This area is prone to significant seasonal flooding as witnessed last spring, the diversion of any groundwater is likely to divert potentially contaminated water to neighboring properties and into Lyle Creek. We are also concerned that this seasonal flooding potentially impairs the function of the aerobic pond?

Concerns regarding the lack of protection for our Rural Character

The aerobic pond is a sewage treatment plant for potential contaminants. The plant area, parking lot, holding pens, and aerobic pond are all densely packed at the western portion of the property adjacent to the public road in the manner of industrial property. The aerobic pond/waste treatment pond is of significant dimensions related to the north south boundaries of the property which the Kittitas County Assessor's Property Map depicts as 317' at the west boundary (it is unclear from the diagram provided within the reapplication but the size of the aerobic pond appears to be 240' from north to south allowing for a mere 38.5" to be divided for a scant buffer between the adjacent properties to the north and south of the site (the diagram does not clearly denote the distant from the pond to the property boundaries on the north and south). It appears the aerobic pond is closer to the northern boundary of the property, and it is unclear whether there will be room for trees at the northern side of the aerobic pond. A fence and trees will not cure the blight that this facility would be to the visual and natural

landscape to our neighborhood. Furthermore, trees and their roots could present a risk to the integrity of the pond liner. This configuration seems totally contrary to the "rural character of the neighborhood" and is in no way equivalent to grazing cattle which enhances the rural character—it amounts to a conversion from Ag-5 to Industrial zoning.

The Kittitas County Growth Management Act 8.1.1 "requires that the County 'include measures that apply to rural development and protect the rural character of the area as established by the County.' [...] "Rural Character" is defined in the Act as lands where:

- open space and visual and natural landscape predominate over the built environment,
- opportunities exist for traditional rural lifestyle and rural based economies,
- spaces and development are compatible with wildlife habitat,
- undeveloped land is not converted to development of sprawl and low density,
- activities generally do not require extension of urban governmental services, and
- land use is consistent with protection of surface and ground water flows and recharge/discharge areas. (RCW 36.70A.030(15))

Note: Kittitas Code 17.60A.015 Review Criteria defines Preserves "'rural character' as defined in the Growth Management Act (RCW [36.70A.030\(20\)](#));"

This application in no way preserves the "rural character" of the neighborhood and fails to satisfactorily ensure the protection from potential public health hazards and the protection of our surface and ground water.

It is noted in the application that there are several commercial operations in the area. One of those operations is so well hidden by surrounding trees that it appears totally obscured by the landscaping. The second commercial operation, while noticeable, poses no threat to adjoining properties. Neither operation poses any noticeably impedes traffic.

Does Kittitas County Code allow for a Conditional Use Permit in Ag-5 allow for a commercial Waste Water Treatment Pond

While a tenuous argument has been made for a Meat Processing facility to fit within the definition of Agricultural processing (inconsistent with the North American Classification System as NAISCS 3116—which categorizes Animal Slaughtering and processing as a subsector of Manufacturing as noted in one of our earlier letters of concern) in reviewing the criteria for a Conditional Use Permit in Ag-5 we have noted no mention of a commercial waste water treatment pond system as a conditional use within Ag-5. A waste water treatment pond suitable for residential use would be grossly inadequate and would potentially harm the aquifer, water resources and pose a risk to public health.

Concerns regarding Decreased Property Values

The application states that there are no decreased property values in the vicinity as a result of this application. This is presumably due to the fact that the conditional use permit has not thus far been

approved and a meat processing facility and waste treatment pond do not as yet exist. Any recent sales are irrelevant, it is future property values that are a concern.

Concerns regarding daily and annual water consumptions

The potential consumption of water by the proposed facility (no matter how much the attempt to conserve it) is substantially in excess of any residential dwelling and water mitigation does not recharge the aquifer. It is our understanding that any metering of wells for the facility is self-monitored not digitally monitored.

Traffic Safety Concerns

Wilson Creek is a 50mph zone adjacent to this site. A modest sized stock trailer is forced to enter and block oncoming traffic to make a right angle turn as noted in the site plan included within this reapplication posing a public safety hazard.

¹ "Products." *Orenco AdvanTex | Wastewater and Greywater Treatment Systems | Packed Bed Filtration*, www.orencocom/products/treatment-systems. Accessed 4 Jan. 2024.

² "TSS (Total Suspended Solids) Removal from Wastewater: JNE." *The JNE Group of Companies*, 11 Dec. 2023, jnegrup.com/environmental/industries-served/organic-waste/.

³ *Management of Waste and By-Products from Meat Industry - Researchgate*, www.researchgate.net/publication/375447887_MANAGEMENT_OF_WASTE_AND_BY-PRODUCTS_FROM_MEAT_INDUSTRY. Accessed 5 Jan. 2024.

⁴ Al-Gheethi, Adel, et al. "Biowastes of Slaughterhouses and Wet Markets: An Overview of Waste Management for Disease Prevention." *Environmental Science and Pollution Research International*, U.S. National Library of Medicine, June 2023, www.ncbi.nlm.nih.gov/pmc/articles/PMC8477996/.

⁵ "Ecompendium of Sanitation Technologies in Emergencies." *Start*, www.emersan-compendium.org/en/technologies/technology/waste-stabilisation-ponds. Accessed 4 Jan. 2024.

⁶ "Benefits and Concerns Associated with Aerobic Treatment Systems (ATS) - Oklahoma State University." *Benefits and Concerns Associated with Aerobic Treatment Systems (ATS) | Oklahoma State University*, 1 Mar. 2017, extension.okstate.edu/fact-sheets/benefits-and-concerns-associated-with-aerobic-treatment-systems.html.

⁷ "Ecompendium of Sanitation Technologies in Emergencies." *Start*, www.emersan-compendium.org/en/technologies/technology/waste-stabilisation-ponds. Accessed 4 Jan. 2024.

⁸ Twogood, Rachel. "Bringing Home Your Beef; a Freezer Space Guide." *Twogood Farm*, Twogood Farm, 20 Apr. 2022, www.twogoodfarm.com/blog-recipes/bringing-home-your-beef-a-freezer-space-guide.

May 26th, 2023

Kelly Bacon
Planner 1
Kittitas County Community Development Services
411 North Ruby Street, Ste 2
Ellensburg, WA 98926

Re: Addendum #1 to 3-8-2023 Letter of Concern regarding Conditional Use Application CU-23-00001, [CU-23-00001 - 3 BR Custom Cuts - Comments Matthew Vaughan, Arrienne & Shannon Bright 3-8-23](#)

Our concerns listed below are in addition to the concerns outlined in our 3-8-2028 letter.

Concerns regarding 17.60A.015 Review criteria:

Though the concept of a meat processing facility in Kittitas County is potentially desirable for our ranching community the site is inappropriate and potentially "detrimental or injurious to the public health, peace, [...and] safety [...] and to the character of the surrounding neighborhood."

The proposed site may not be "unreasonably detrimental to the economic welfare of the county..." at large but it will certainly be economically detrimental to the market value and marketability of all the properties near it.

The high groundwater and seasonal flooding experienced earlier this month demonstrate that:

- A standard septic system will pose a probable threat of contamination to the ground water, aquifer, and Lyle Creek which is a Type F (fish bearing) stream.
- The most recent Project Narrative, SEPA Checklist, and Water, Offal & Indelible Product Mitigation Plan for CU-23-00001 in no way assure that this domestic sewage/septic system will not contaminate the groundwater, fish habitat in Lyle Creek, the aquifer, and nearby wells.
- The 37,100-sf buildout—as depicted in the most recent site plan is concentrated in the western 400' of the parcel—the concentration means it is likely to impact the high ground water, diverting water to properties nearby and result in more seasonal flooding and potential contamination.
- Any seasonal flooding will surely flow downslope into Lyle Creek and potentially contaminate the stream at a time when any fish are likely to be most vulnerable.

March 7, 2023

Kelly Bacon
Planner 1
Kittitas County Community Development Services
411 North Ruby Street, Ste 2
Ellensburg, WA 98926

Re: Letter of Concern regarding Conditional Use Application CU-23-00001

Dear Kelly Bacon,

We value the agricultural heritage of the Kittitas Valley and while we appreciate the need for more meat processing for our rural ranchers, we unequivocally oppose this Conditional Use Permit Application.

After reviewing the Conditional Use Permit Application, it is our opinion a Determination of Non-Significance would be unwarranted and unaccountable. The application prompts more questions than it answers. Our questions/concerns are shared below and are included as attachments.

The land for the proposed site is in the A-5 Agricultural Zone "where various agricultural activities and low density residential developments co-exist compatibly." We are delighted to be near A-20 Agricultural zone "wherein farming, ranching and rural life styles are dominant characteristics." Our homes are the gateway to some of the best Cattle Ranching in the Kittitas Valley. Cattle Ranching is categorized, by the North American Industrial Classification System as NAICS 1121, identified as a category of Animal Production, in the agriculture, forestry and hunting sector.¹

As described in their Project Narrative, 3BR Custom Cuts intends to be a "full-service meat processing operation." Animal Slaughtering and Processing, NAICS 3116, is categorized as part of Food Manufacturing, a subsector of Manufacturing.² While a full-service meat processing operation is desirable for the community, our ranchers, and the perpetuation of the rural character of our community the location for this proposal is undesirable. The meat processing facilities that are presently located in Kittitas County are in significantly less populated areas.

- The proposal is incompatible with the existing land uses.
- This proposal is potentially detrimental or injurious to the public health, peace, and safety of the surrounding neighborhood—it is incompatible with the existing neighborhood land uses and the "rural character" of our neighborhood.
- The Application does not consider the probable negative impacts of increased vehicle traffic. In an attempt to understand the scope and potential impact of the proposal we

used the little data contained within the application (extrapolated from the projected county sales tax revenue contained on the Project Narrative, see Attachment 2) to estimate the potential number of cattle/animals to be processed. 10,917 cattle would have to be processed to produce "a few hundred thousand a year in sales tax."³ The impact on neighborhood traffic from transporting the projected 10,917 cattle to the facility is likely to be significant. Traffic would include, but not be limited to, trucks transporting cattle to the site, customers/vendors picking up product, disposal of the offal (see the projected quantity below), and the 6-8 employees is likely to be significant. Wilson Creek at the proposed site location is a 50-mph zone, in a residential rural neighbor, on a school bus route, with narrow lanes, little shoulder, and deep ditches.

- The application does not account for—nor does it plan for—the mitigation of potential material negative impacts of the proposal. The proposal prompts concerns about groundwater contamination and public health hazards related to the proposed use of a "standard septic system," for what they characterize as "domestic sewage," to dispose of the chemical hazards and biological agents associated with the animal processing facility. Refer to Attachment 1 for more detail about the chemical hazards and biological agents.
- A Conditional Use Permit for Animal Processing/Manufacturing in a populated A-5 Agricultural/residential rural (most of the parcels nearby are less than 5 acres) amounts to a conversion of residential rural zoning to industrial and will quite probably result in a decrease in value of the nearby properties.
- Offal is denoted on the Site Plan. Offal is the "Meat, including internal organs (such as liver, heart, or kidney) and extremities (such as tail or hooves), that has been taken from a part other than skeletal muscles..."⁴ We are concerned that the offal also poses a potential public health concern. A cow with a live weight of 1,000 pounds yields a 630⁵ pounds carcass—leaving 370 pounds of offal per cow—10,917 cows could potentially produce 4,039,290 of offal per year. There is nothing in the application that describes how this offal will be contained. We question whether it can be contained in a manner where the scent does not attract predators, vermin, and insects.
- It is not clear to me how the County Planners conducted an environmental review on the scant information provided in the application, project narratives, and SEPA Checklists—the fact that Community Development has stated in their Notice of Application that they expect to issue a Determination of Non-Significance is incomprehensible.
- There is nothing in this application to indicate that the potentially significant environmental impacts that may result from this proposal have been considered or planned for. If the county intends to continue considering this application, we believe an Environmental Impact Statement should be prepared to explore the potential public health hazards.
- We believe it is crucial to complete a hydrogeology study—including an investigation well—to determine the possibility of groundwater contamination and the potential significant water use for the proposal.

The following attachments are included herein:

Attachment 1: Questions/Concerns about SEPA Environmental Checklists

- Attachment 2:** Estimate of Number of Cattle/Animals Processed a Day Based on Projected Sales
Attachment 3: Bibliography of Reference Sources considered for this Letter of Concern
Attachment 4: Recommendations for a Slaughterhouse Septic System
Attachment 5: The Environmental Impacts of Slaughterhouses: Fact Sheet

We believe that a meat processing facility with a ranch/farm to table ethic is a great fit for our community, that it could complement and insure the continuation of our rural heritage. We would like to see a proposal for an animal processing facility be planned with more thought and care to assure that there will not be negative outcomes to community, that it will assure proper containment and disposal of biological agents and chemical hazards, that it will account for the quantities of water to be used, and that a site is selected with more forethought for the impact on the community.

We wish to be notified when the Public Hearing is scheduled for this project.

Thank you,

Matthew Vaughan
Arriane Bright
Shannon Bright
2715 Willowdale Rd
Ellensburg, WA 98926
laaksoon@outlook.com

¹ U.S. Bureau of Labor Statistics. (n.d.). *Industries at a glance: Animal production: NAICS 112*. U.S. Bureau of Labor Statistics. Retrieved March 6, 2023, from <https://www.bls.gov/iag/tgs/iag112.htm>

² U.S. Bureau of Labor Statistics. (n.d.). *Industries at a glance: Food Manufacturing: NAICS 311*. U.S. Bureau of Labor Statistics. Retrieved March 6, 2023, from <https://www.bls.gov/iag/tgs/iag311.htm>

³ "a few hundred thousand dollars in sales" is a statement included on page 2 of the Project Narrative included in the Conditional Use Permit Application on the Belsaas & Smith letterhead.

⁴ Publishers, H. C. (n.d.). *The American Heritage Dictionary entry: Offal*. American Heritage Dictionary Entry: offal. Retrieved March 7, 2023, from <https://www.ahdictionary.com/word/search.html?q=offal>

⁵ Campbell, J. A. (n.d.). *Understanding beef carcass yields and losses during processing*. Penn State Extension. Retrieved March 7, 2023, from <https://extension.psu.edu/understanding-beef-carcass-yields-and-losses-during-processing>

Questions/Concerns about SEPA Environmental Checklist and SEPA Environment Checklist Revised

Listed in the table below are some of the questions contained within in the SEPA Checklists, followed by the applicant's responses (in **boldface**) which prompted some of our questions/concerns. Our questions/concerns are below the applicant's responses in italics. We have copied and pasted the text from the SEPA Checklists to simply direct attention to those sections that have prompted our questions/concerns. Please refer to the original SEPA Checklists as you review our questions/concerns to assure accuracy.

Section A. Background Page 2 of 15

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No, not at this time. [both checklists]

Commissioner Cory Wright in his Letter of Support of this Conditional Use Permit states:

"...3BR Custom Cuts and its sister corporation, Three Boots Ranch, represent a reinvigoration of our area's ranching heritage. The planned combination of a processing facility, production of top-quality beef, and development of a venue designed to showcase the farm-to-table ecosystem cycle represents an evolutionary step in our area's diversification of agricultural business and tourism."

Commissioner Wright's statement above combined with the fact that 3 Boots Ranch has a listing with Kittitas County Chamber of Commerce in which their About Us reads "Ranch to Table beef & pork subscription service" leads me to believe there are quite probably future plans related to this proposal and that they are simply not included here. If their plans for expansion relate to their adjacent property (the address noted on the Chamber of Commerce website) it will also have an impact on the on the traffic flow as it is essentially the same neighborhood.

Section A. Background Page 2 of 15

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

N/A [SEPA Checklist] and Not applicable [SEPA Checklist Revised], at this moment we are not aware of any environmental information pertaining to this proposal².

It concerns us that there is neither a plan, nor a current intention to prepare a plan regarding the handling and containment of the biological agents and chemical hazards associated with meat processing in either checklist.

Section B. Environmental Element page 5 of 15

3. Water

b. GroundWater:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

There will be a class B Commercial well connected with this project. It will be mainly used for standard drinking water, bathrooms and hand wash locations. There will be occasion wash downs for cleaning of facilities. All water used will go into standard approved septic systems. Amount of use will vary per day but should be in the range of standard house hold use SEPA Checklist and SEPA Checklist Revised

I am not sure what a class B Commercial well is, Kittitas County Public Health refers to a Group B water system:

"Group B water systems² serve 3 to 14 connections and are not subject to the federal Safe Drinking Water Act. Instead, they must meet state and local requirements for water quality and operations."

Are they planning on a Group B water system? Does that mean they will be using a quantity water potentially up to 14 connections? What are their plans for water mitigation?

According to Food Northwest (a trade organization formerly known as Northwest Food Producers Association) the typical water consumption for beef processing is 150-450 gallons of water per animal³. Based on these numbers processing an estimated 10,917 cattle would result in the estimated consumption of 1,637,550 – 4,912,650 gallons of water a year.

The applicants state in their Project Narrative that their processing facility will use an 1/8 less water—not knowing what numbers they are projecting for water consumption in their facility 1/8 of the estimated 150-450 gallons per animal would be 294,759 – 884,277 gallons a year. According to the water footprint calculator the average U.S. water use per household is 138 gallons a day/ 50,370 gallons a year.⁴ The water consumption for this facility, characterized above as "standard house hold use," is significantly more than the use of one standard house—it is unclear how much water they project to use and what that is equivalent to in connections of "standard house hold use."

Does their system which proposes 1/8 less water use more chemicals agents? ...and as a result, will this lead to more possible groundwater contamination with chemical agents?

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Domestic sewage. Both SEPA Checklists

We are very concerned about potential public health issues associated with groundwater

contamination. We are concerned that domestic sewage will not adequately protect our ground water and there are no plans or mitigations mentioned in the SEPA Checklist or in their project narratives to address this high risk of potential public health hazards. Some specific concerns common to meat processing are included below with associated references:

There are chemical hazards—ammonia, chlorine, carbon dioxide, hydrogen peroxide, and peracetic acid—that are associated with meat processing as well as potential biological agents specifically—Brucellosis, influenza viruses, LA-MRSA, Q Fever.⁵

"A typical/conventional septic system with only a septic tank and drainfield will not work for meat processing plants..."⁶

"Each year U.S. slaughterhouses use billions of gallons of water to process and render animal carcasses. For example, water use in processing red meat includes cleaning stockyard and pens, hide removal, scalding, dehairing, intestine handling, rendering, general cleanup, and meatpacking. Water used in these facilities is often contaminated with processing waste and disposed of into waterways."⁷

Section B. Environmental Element page 5 of 15

3. Water

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The site is predominately farm ground pasture surrounding the facility. No storm run off is anticipated to leave site Both SEPA Checklists

2) Could waste materials enter ground or surface waters? If so, generally describe.

Not Anticipated. Both SEPA Checklists

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No. Both SEPA Checklists

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

N/A. SEPA Checklist and None. SEPA Checklist Revised

*Given the nature of the chemical hazards and biological agents associated with meat processing as we noted in Section 2 all of the above responses are alarming to note that it is **Not Anticipated** that waste materials could enter ground water and that any measures to control probable surface water contamination are either **N/A** or **None**.*

It is our opinion that a complete hydrogeology study—including an investigation well—be done to determine the likelihood of groundwater contamination and to plan for containment of the chemical agents and biological hazards.

Section B. Environmental Element page 7 of 15

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?

If so, describe.

None. Both SEPA Checklists

We repeat, we are very concerned about potential public health issues associated with groundwater contamination. We don't believe domestic sewage will adequately protect our water and there are no plans for containment or mitigation mentioned in either SEPA Checklist to deal with the high risk of potential public health hazards. Here are a few concerns each linked with an associated reference:

There are chemical hazards—ammonia, chlorine, carbon dioxide, hydrogen peroxide, and peracetic acid—that are associated with meat processing as well as potential biological agents specifically—Brucellosis, influenza viruses, LA-MRSA, Q Fever.⁸

"A typical/conventional septic system with only a septic tank and drainfield will not work for meat processing plants..."⁹

"Each year U.S. slaughterhouses use billions of gallons of water to process and render animal carcasses. For example, water use in processing red meat includes cleaning stockyard and pens, hide removal, scalding, dehairing, intestine handling, rendering, general cleanup, and meatpacking. Water used in these facilities is often contaminated with processing waste and disposed of into waterways."^{7,10}

Section B. Environmental Elements Page 10 of 15

8. Land and Shoreline Use

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Site is currently agricultural and 98% of the location will remain in AG. Both SEPA Checklists

We are confused by this statement that 98% of the location will remain in AG—the area covered by the processing facility encompasses approximately 95,9720 (extrapolated from the Site Plan) this is about 14% of the 14.90 parcel. Categorized in the Manufacturing Sector by NAICS meat processing would be considered is considered Industrial use. The meat

processing facility is planned for the front of the parcel which is the most populated and quite near the adjacent parcels to the north and south. This proposal is not compatible with the A-5 Agricultural Zone. This is a long narrow parcel, the narrow portion on Wilson Creek. The trees which are noted in the Belsaas & Smith Project Narrative are totally inadequate to mitigate this incompatibility and limit in any way the disruption to the neighborhood...most particularly to the adjacent properties.

¹ *3 Boots Ranch*. Kittitas County Chamber of Commerce. (2019, June 25). Retrieved March 6, 2023, from <https://business.kittitascountycommerce.com/list/member/3-boots-ranch-3486>

² *Group B background & information - Kittitas County, Washington*. (n.d.). Retrieved March 6, 2023, from <https://www.co.kittitas.wa.us/uploads/documents/health/services/water/group-b-background-information.pdf>

³ Williams, S. D. (n.d.). *Water and wastewater use in the food processing industry - meat and poultry processing*. Food Northwest. Retrieved March 6, 2023, from https://www.foodnorthwest.org/index.php?option=com_content&view=article&id=83%3Awater-and-wastewater-use-in-the-food-processing-industry&catid=20%3Asite-content&limitstart=2

⁴ *Indoor water use at home*. Water Footprint Calculator. (2022, July 15). Retrieved March 7, 2023, from <https://www.watercalculator.org/footprint/indoor-water-use-at-home/>

⁵ *Department of Labor Logo United Statesdepartment of Labor*. Meatpacking - Hazards and Solutions | Occupational Safety and Health Administration. (n.d.). Retrieved March 6, 2023, from <https://www.osha.gov/meatpacking/hazards-solutions>

⁶ Heger, S. (2019, April 5). *Recommendations for a slaughterhouse septic system*. Onsite Installer. Retrieved March 5, 2023, from https://www.onsiteinstaller.com/online_exclusives/2019/01/recommendations-for-a-slaughterhouse-septic-system

⁷ *The environmental impacts of slaughterhouses: Fact sheet*. Center for Biological Diversity. (n.d.). Retrieved March 5, 2023, from https://biologicaldiversity.org/programs/population_and_sustainability/pdfs/slaughterhouse_factsheet.pdf

⁸ *Department of Labor Logo United Statesdepartment of Labor*. Meatpacking - Hazards and Solutions | Occupational Safety and Health Administration. (n.d.). Retrieved March 6, 2023, from <https://www.osha.gov/meatpacking/hazards-solutions>

⁹ Heger, S. (2019, April 5). *Recommendations for a slaughterhouse septic system*. Onsite Installer. Retrieved March 5, 2023, from https://www.onsiteinstaller.com/online_exclusives/2019/01/recommendations-for-a-slaughterhouse-septic-system

¹⁰ *The environmental impacts of slaughterhouses: Fact sheet*. Center for Biological Diversity. (n.d.). Retrieved March 5, 2023, from https://biologicaldiversity.org/programs/population_and_sustainability/pdfs/slaughterhouse_factsheet.pdf

Estimate of Number of Cattle/Animals Processed a Day Based on Projected Sales Tax

In an attempt to understand how many cattle/animals are expected to be processed at the proposed site we made a series of calculations based on conservative extrapolations with the limited data contained in the application. The calculations are included below:

How many cattle/animals would need to be processed to produce "a few hundred thousand dollars a year in sales tax?"¹ How many is a few? For the sake of analysis, we will use 2 for a few.

Projected Kittitas Sales Tax		
Kittitas County Sales Tax Rate ²	Sales x Kittitas County Sales Tax Rate	Sales Tax
.016	$\$12,500,000 \times .016 =$	\$200,000

This Conditional Use Permit Application seems to focus on cattle, for the sake of illustration cattle are the focus of the table below. A 1,000 pound cow is on the smaller side to account for the occasional pig, sheep, or goat that may be processed. The kill fees below are from Lind's Custom Meats³ in Kent who included their price list on their website.

Number of Cattle/Animals to produce \$200,000 in Sales Tax Revenue to Kittitas County						
Kill Fee	Cut & Wrap Fee per pound	Average Weight	Cut & Wrap Fee for 1,000 cow	Revenue Projected above based on \$200,000 in County Sales Tax	Total of Kill Fee and Cut & Wrap Fee for 1,000 pound cow (\$195 + \$950)	Total Cattle/Animals Processed
\$195	\$0.95	1,000	\$950	$\$12,500,000 \div$	$\$1,145 =$	10,917
$10,917 \div 365$		Cattle Per Day 365 days a year				= 30
$10,917 \div 260$		Cattle Per Day 260⁴ workdays a year				= 42

¹ "a few hundred thousand dollars in sales" is a statement included on page 2 of the Project Narrative included in the Conditional Use Permit Application on the Belsaas & Smith letterhead.

² E. (n.d.). Retrieved March 7, 2023, from <https://webgis.dor.wa.gov/taxratelookup/SalesTax.aspx>

³ *Farm butchering*. Lind's Custom Meats. (n.d.). Retrieved March 6, 2023, from <http://www.lindsmeats.com/farm-butchering>

⁴ *Working Days*. USA | How many working days in year 2022? (n.d.). Retrieved March 7, 2023, from https://www.workingdays.us/how_many_working_days_in_year_2022_Federal%20holidays.htm

References

- 3 Boots Ranch*. Kittitas County Chamber of Commerce. (2019, June 25). Retrieved March 6, 2023, from <https://business.kittitascountychamber.com/list/member/3-boots-ranch-3486>
- Campbell, J. A. (n.d.). *Understanding beef carcass yields and losses during processing*. Penn State Extension. Retrieved March 7, 2023, from <https://extension.psu.edu/understanding-beef-carcass-yields-and-losses-during-processing>
- Department of Labor Logo United States department of Labor*. Meatpacking - Hazards and Solutions | Occupational Safety and Health Administration. (n.d.). Retrieved March 6, 2023, from <https://www.osha.gov/meatpacking/hazards-solutions>
- E. (n.d.). Retrieved March 7, 2023, from <https://webgis.dor.wa.gov/taxratelookup/SalesTax.aspx>
- The environmental impacts of slaughterhouses: Fact sheet*. Center for Biological Diversity. (n.d.). Retrieved March 5, 2023, from https://biologicaldiversity.org/programs/population_and_sustainability/pdfs/slaughterhouse_factsheet.pdf
- Farm butchering*. Lind's Custom Meats. (n.d.). Retrieved March 7, 2023, from <http://www.lindsmeats.com/farm-butchering>
- Group B background & information - Kittitas County, Washington*. (n.d.). Retrieved March 6, 2023, from <https://www.co.kittitas.wa.us/uploads/documents/health/services/water/group-b-background-information.pdf>
- Heger, S. (2019, April 5). *Recommendations for a slaughterhouse septic system*. Onsite Installer. Retrieved March 5, 2023, from

https://www.onsiteinstaller.com/online_exclusives/2019/01/recommendations-for-a-slaughterhouse-septic-system

Indoor water use at home. Water Footprint Calculator. (2022, July 15). Retrieved March 7, 2023, from <https://www.watercalculator.org/footprint/indoor-water-use-at-home/>

Kittitas County Board of County Commissioners | County Code | Title 17.60A.015 Review Criteria. (n.d.). Retrieved March 6, 2023, from <https://www.co.kittitas.wa.us/boc/countycode/title17.aspx>

North American Industry Classification System - NAICS. United States Census Bureau. (n.d.). Retrieved March 6, 2023, from <https://www.census.gov/naics/>

Publishers, H. C. (n.d.). *The American Heritage Dictionary entry: Offal*. American Heritage Dictionary Entry: offal. Retrieved March 7, 2023, from <https://www.ahdictionary.com/word/search.html?q=offal>

U.S. Bureau of Labor Statistics. (n.d.). *Industries at a glance: Animal production: NAICS 112*. U.S. Bureau of Labor Statistics. Retrieved March 6, 2023, from <https://www.bls.gov/iag/tgs/iag112.htm>

U.S. Bureau of Labor Statistics. (n.d.). *Industries at a glance: Food Manufacturing: NAICS 311*. U.S. Bureau of Labor Statistics. Retrieved March 6, 2023, from <https://www.bls.gov/iag/tgs/iag311.htm>

Williams, S. D. (n.d.). *Water and wastewater use in the food processing industry - meat and poultry processing*. Home. Retrieved March 7, 2023, from https://www.foodnorthwest.org/index.php?option=com_content&view=article&id=83%3Awater-and-wastewater-use-in-the-food-processing-industry&catid=20%3Asite-content&limitstart=2

Winders, D. J., & Abrell, E. (2021, December). *Slaughterhouse workers, animals, and the environment: The need for a rights-centered regulatory framework in the United States that recognizes interconnected interests*. Health and human rights. Retrieved March 5, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8694297/>

Working Days. USA | How many working days in year 2022? (n.d.). Retrieved March 7, 2023,

from

https://www.workingdays.us/how_many_working_days_in_year_2022_Federal%20holidays.htm



Recommendations for a Slaughterhouse Septic System

If you are designing or maintaining a septic system for an animal processing facility there are several variables to consider

By Sara Heger, Ph.D.

January 24, 2019



Slaughterhouse wastewater is not covered under most state septic regulations, as septic system sizing is based on research of typical flows and wastewater characteristics from domestic residences.

For small slaughtering facilities a decentralized onsite option for treating its wastewater may be the most cost-effective — particularly if connection to a wastewater treatment plant is not feasible.

A septic system receiving slaughterhouse waste is considered by the Environmental Protection Agency to be a Class V injection well system. Depending on the requirements of your state, county and/or local authorities, wastewater can be treated in various ways. Keep in mind that there is no one “best” wastewater treatment system. Different processors have different needs. Finding the right wastewater treatment system for the facility will depend on a number of variables.

1. First you will need to determine what type of activities will occur at the facility:

- Slaughtering
- Cut and wrap
- Value-added processing
- Sales room
- Worker showers and/or laundry.

Each of these activities will add additional loading to the system.

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2. Which species are being processed: hogs, sheep, goats, poultry, wild game, etc.

3. Estimate or measure the volume of wastewater output each day and wastewater characteristics. Measure or estimate the pH, total suspended solids, biological oxygen demand and FOG levels. For existing facilities, flow measurements should always be obtained. The tables below show flow

estimates and wastewater characteristics that were gathered by *Niche Meat Processor Assistance*. It should also be determined if processing will be consistent or seasonal in nature.

Flow Data

Flow, gal/animal	Details	Source	Comment
200	Flow is a permit value from a large plant; discharge is a 2-acre sprayfield	From Iowa Beef Processors, Wautula, WA	Data reported in WA permit SWDP-8075 for Carefree meats / McCary Country Meats
51 veal	This is for a veal processor using a drainfield Flow based on 1,276 gpd, 6 days/wk, 150 calves	Lampaert Meats	Data reported in WA permit SWDP-3974 for Lampaert Meats (ZYK Meats)
50 for beef 10 for lamb	Separation of byproducts mandatory (including blood?)	Gabriel Claycamp new small plant in WA	From NMPAN
150-200 beef half that for lamb, goats, hogs	Strongly recommends blood separation	Arion Thiboumery Lorenz Meats, MN	From NMPAN
100 beef	This is a permitted value from NC	Debbie Bost	From NMPAN
100 on slaughter days 40 on non-slaughter	Blood can be separated and/or aerated but still goes to sewer	Matthew Campbell	From NMPAN
45 - 60 lamb	Based on reported flow and design animal processing capacity of 3,000.	Superior Packing, Dixon, CA	2011 data from submittals for CA Waste Discharge Requirements 97-100

Water Quality Data

BOD, mg/l	TSS, mg/l	EC, umho/cm	TDS, mg/l	TN, mg/l	TKN, mg/l	Cl, mg/l	Total Coliform org/100 ml	Comment
2,500	900	1,100		100				WA Dep Ecology State Waste Discharge Permit 8075
127			375	93.2	93	58.6	650,000	WA Dep Ecology State Waste Discharge Permit 3974 blood and first rinse of blood sump are sent off-site
134 - 165	86 - 38			22 - 55	nitrate-N: 4 - 7			Purdue constructed wetlands study - first value is poultry processing, second is an animal shelter. Samples collected after septic tank treatment
1,020	396							Small plant in the Midwest slaughtering red meat, and furthering processing grinds and cooked products. Other averages reported: pH - 7.2, oil and grease - 651 mg/L.

Option 1: In general, if it is possible to connect to a municipal wastewater treatment plant, this is often a good option. If the facility is located within reach of these services, it will likely be worth paying the initial connection fees and monthly sewer costs rather than building and managing a small onsite wastewater treatment system. Before this decision is made, the facility should contact the local public works or municipal wastewater treatment facility to find out about connection fees and estimated monthly charges. With smaller towns or undersized wastewater treatment plants, the additional loading from a larger slaughterhouse may be a challenge.

Option 2: For smaller facilities installing a holding tank that is pumped may be an option. The holding tank waste could be land-applied or taken to a wastewater treatment plant. This is also a good option for phased growth where the system can start as a holding tank and once the business is more established an onsite wastewater treatment system can be installed. The holding tank should have an alarm to indicate when it is 75 percent full.

Related: [Dog Kennel and Vet Clinic Wastewater Treatment Recommendations](#)

Option 3: A typical/conventional septic system with only a septic tank and drainfield will not work for meat processing plants because of the high levels of BOD, TSS and FOG in the wastewater. If it is a larger facility, building an anaerobic digester, pond or lagoon system may be a good option, but for smaller facilities, a septic system with advanced treatment could be a good solution. The most likely design solution would be installation of an aerobic treatment unit after settling and oil and grease removal in septic tanks. With high-strength wastewater, flow equalization with time dosing should be considered, and flow monitoring is essential for proper management. Other recommendations include:

1. It is best to separate the animal processing wastewater from human domestic wastewater for bathrooms, showers and laundry. The domestic wastewater will need to meet all the local/state septic regulations where the remaining wastewater will likely be governed by an industrial- or agricultural-related program.
2. Use of cleaning chemicals should be kept to a minimum. Septic systems can deal with small amounts of cleaning chemicals, but if the amount is above typical domestic usage, system performance may be impacted.
3. If animals are killed in the facility, all blood should be caught separately and either used, rendered or taken to a treatment facility.
4. All solid material should be dealt with as a solid waste. Fine grates should be put on all floor and sink drains to catch any small particles and hair.
5. A commercial-size effluent filter (designed for high-strength waste) should be placed on the outlet of the last septic tank. A manhole should be located over this filter, as there will be a need for frequent maintenance and cleaning.
6. A maintenance contract should be in place with a licensed onsite professional to assure the proper operation and maintenance of the treatment system.

After treatment, the remaining item for consideration is where the dispersal will occur. Depending on the quality of the effluent, size and climate, irrigation may be an option; in some areas, a subsurface drainfield may be a better option.

About the author: Sara Heger, Ph.D., is an engineer, researcher and instructor in the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota. She presents at many local and national training events regarding the design, installation, and management of septic systems and related research. Heger is education chair of the Minnesota Onsite Wastewater Association and the National Onsite Wastewater Recycling Association, and she serves on the NSF International Committee on Wastewater Treatment Systems. Ask Heger questions about septic system maintenance and operation by sending an email to kim.peterson@colepublishing.com.

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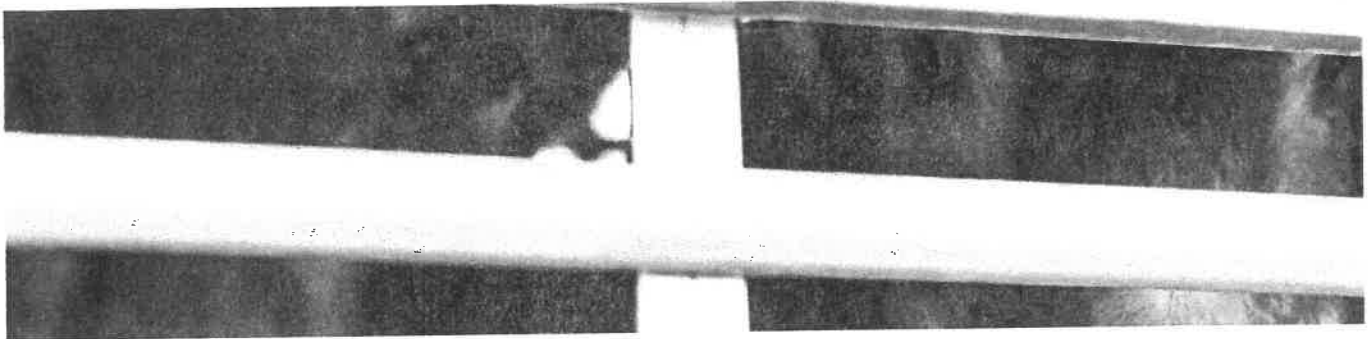


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THE ENVIRONMENTAL IMPACTS OF SLAUGHTERHOUSES: FACT SHEET



Slaughterhouses are a key source of water pollution and environmental degradation. Laws regulating these facilities are weak and poorly enforced, for the animals killed in the process, the workers putting body and limb on the line, and the environmental health and safety of neighboring communities. From direct disposal of pollutants to toxic runoff and water usage, slaughterhouses are significantly impairing North American rivers and streams and further endangering aquatic wildlife.

BY THE NUMBERS

Due to American demand for meat, the number of slaughter facilities is steadily increasing, with more than 900 livestock slaughter facilities operating under federal inspection, 3,000 federally inspected poultry and processing plants (some process meat but do not slaughter), and about 1,900 state-regulated or custom slaughter facilities.^{1,2} Approximately 25 million farmed animals in the United States are slaughtered every day.

Per capita meat consumption in the United States is estimated at 222.4 pounds annually.³ Approximately 9.76 billion farmed animals are processed per year into 105 billion pounds of beef, pork, chicken, turkey, mutton, veal and lamb. In 2021 that included 55.9 billion pounds of red meat processed, with a record high of 28 billion pounds of beef.⁴ Poultry slaughter has nearly doubled in recent decades as chicken consumption has skyrocketed.^{5,6} The steady increase in meat production and slaughter facilities means an increase in harms to the health of watersheds and wildlife.

WATER USE

Each year U.S. slaughterhouses use billions of gallons of water to process and render animal carcasses. For example, water use in processing red meat includes cleaning stockyard and pens, hide removal, scalding, dehairing, intestine handling, rendering, general cleanup, and meatpacking. Water used in these facilities is often contaminated with processing waste and disposed of into waterways.⁷

- For poultry slaughter, water usage occurs during scalding, de-feathering, evisceration, carcass washes, pre-chilling and chilling. Average water usage for slaughtering poultry is over 3.5-10 gallons of water per “broiler” chicken and 11-23 gallons of water per turkey.⁸

- For beef cattle, water consumption occurs in every step of the slaughter process, from live receiving to cleaning and sanitation. Average water usage for slaughtering cattle is at least 150-450 gallons per animal.⁹
- Slaughtering requires large amounts of water for cleaning and sterilization. The resulting wastewater contains concentrated agricultural compounds including fat, oil, protein and carbohydrates, which are biodegradable but require a high biological oxygen demand to biodegrade.
- The main polluting agent in slaughterhouse wastewater is blood. Wastewater also contains insoluble organic and inorganic particles polluting waterways.

POLLUTION

U.S. slaughter facilities produce millions of pounds of pollution annually. These facilities discharge water contaminated with blood, oil, grease and fats, ammonia, dangerous fecal bacteria, and excrement.

- In 2018 slaughterhouses released over 55 million pounds of toxic substances into waterways.¹⁰
- According to EPA data, meat and poultry processing facilities are the second-largest industrial point source of nitrogen into waterways, discarding 27%.^{11,12,13,14}
- Slaughterhouses are also a top producer of phosphorus, generating 14% of the phosphorus discarded into waterways.¹⁵
- Environmental Integrity Project's study of 98 large slaughterhouse facilities found that the median slaughterhouse produced an average of 331 pounds of nitrogen a day, which is equivalent to the nitrogen pollutants in the untreated sewage of 14,000 people.¹⁶
- Slaughterhouse wastewater can contain antibiotic-resistant strains of E. coli, fueling the spread of antibiotic-resistant bacteria.
- Without a clear pretreatment standard, some slaughterhouses discharge to public wastewater-treatment plants without treating waste, worsening overflow at treatment plants.
- Even with new technologies available for mitigating pollution, the past two decades have seen an increase of over 25% in direct disposal of slaughter pollutants into waterways due to weak environmental protections.
- More than 60% of the waterways that suffer the pollution from the biggest slaughterhouses are too polluted for drinking, swimming, and fishing.¹⁷

SPECIES ENDANGERMENT

Many aquatic species are already struggling to survive in the face of climate change, drought and rising temperatures, bringing excessively low water, low oxygen, hotter water, and concentrations of harmful substances. Toxic algal blooms and chemical contamination added to existing pollution can destroy entire ecosystems. Poor oversight, regulation and enforcement of slaughter facilities — many of which have low environmental standards that are decades out of date — have created a significant threat to the survival of aquatic animals from this pollution.

- All 50 states face harmful algal blooms from nitrogen and phosphorus pollution that can sicken or kill people and animals exposed to these extremely dangerous toxins.
- According to the Environmental Protection Agency, slaughterhouses often dump wastewater directly into rivers and streams.

- Thousands of slaughterhouses in the U.S discharge into waterways, including Chesapeake Bay, the nation's largest estuary, where nutrient runoff suffocates marine life such as crabs, oysters and fish (such as yellow perch and largemouth bass) and can create mass "fish kills."
- The pollution-driven decline of yellow lance mussels (which filter algae), marbled salamander, and American eels in and around Chesapeake Bay is endangering aquatic ecosystems.
- More than 1,000 facilities store waste in onsite lagoons or spread it on land. Storms can cause lagoons to overflow or wash waste off fields, contaminating waterways and imperiling wildlife.
- A pork processing plant owned by JBS in Illinois spilled 29 million gallons of hog waste in 2015, killing nearly 65,000 fish.
- Smithfield's Tarheel Plant in North Carolina, the largest pig slaughterhouse in the United States, discharged 1,759 pounds of nitrogen a day on average into the Cape Fear River. In 2018 it was ranked the second worst polluter by the Environmental Integrity Project's report on slaughterhouse pollution.
- Compounds found in slaughterhouse wastewater, such as chromium and chemicals from cleaning products, cause changes in aquatic ecosystems that endanger fish and plant life.
- Nitrogen and phosphorus from slaughterhouse waste can cause the growth of algae that depletes the oxygen in water, creating dead zones in streams and rivers. The Gulf of Mexico dead zone is almost 7,000 square miles.
- Decomposing algae results in hypoxia, depriving marine life of oxygen. Some aquatic species, such as shrimp, suffer stunted growth.

EQUITY AND JUSTICE

Slaughterhouses are disproportionately located in Black, Indigenous, Latino, immigrant and low-income communities. Facilities that release toxic industrial waste directly into waterways deeply impact these underserved and underrepresented populations.

- The EPA has reported that 74% of slaughterhouses that discharge pollution directly into rivers and streams are within one mile of under-resourced communities, low-income communities, or communities of color.¹⁸
- Nearly half the slaughterhouses in the 2018 Environmental Integrity Project study were in communities with more than 30% of residents at or below the poverty line, which is twice the national average. One-third of these facilities were in communities where at least 30% of the population are people of color.
- Air and water pollution from slaughter facilities leads to health problems including headaches, breathing and heart difficulties, and irritation in the nose, eyes and throats. Residents may be unable to open windows or go outside due to dangerous toxins in the air.^{19,20, 21}
- Algal outbreaks can make water unsuitable for swimming and drinking by producing cyanotoxins that are challenging to fully filter out with waste-treatment methods.
- Slaughterhouse employees are often Black, Indigenous, Latino or immigrants, vulnerable to exposure and workplace safety violations, while slaughter, rendering and meat packing facilities are among the most dangerous operations in the United States.²²

LACK OF ENVIRONMENTAL REGULATION

The Environmental Protection Agency is charged with controlling water pollution and setting wastewater

standards for the slaughter industry. The agency's own records show three-quarters of industrial-scale slaughter facilities discharging waste into waterways violated their permits with little or no enforcement, dumping as much nitrogen pollution as small cities in some cases.

Recently, following litigation brought by the Center and key allies in the 4th Circuit, the U.S. Environmental Protection Agency announced it will update water-pollution control standards for the slaughterhouse industry.²³

- One-third of the slaughterhouses violated permits more than 10 times, while 18 of the facilities had over 100 violations per day.
- Tysons Foods, one of four meat mega-corporations dominating the U.S. market, had the most environmental permitting violations.²⁴
- The most polluting U.S. slaughterhouse ranked was a JBS pork processing plant in Beardstown, Illinois. The facility released nearly 2,000 pounds of nitrogen a day into an Illinois River tributary. JBS is one of the largest meat companies in the world.
- States delegated under the Clean Water Act to administer permitting programs are charged with setting fines for exceeding Clean Water Act permits. These fines can be set at a maximum of \$46,129 per day, but in most states, fines are often \$10,000 or less.
- Along with low fines for exceeding limits, the amount of pollution produced is unclear because meatpackers are only required to monitor their discharge no more than twice a week.²⁵

The regulations for many U.S. slaughterhouses have not been updated since 1975, though technology has changed drastically in the past 45 years.²⁶ In 2022 the EPA settled a lawsuit from a coalition of conservation and community groups (including the Center for Biological Diversity), agreeing to update standards for water pollution from slaughterhouses.²⁷

RECOMMENDATIONS

Additional strategies are needed to improve waste prevention.²⁸ But the environmental impacts of slaughter facilities must be reduced by scaling down the numbers of animals processed. By addressing overconsumption and unsustainable demand for meat, dairy and seafood, the strain on the system of slaughterhouse waste and pollution of natural resources can be reduced.

REFERENCES

- ¹USDA (2022). Livestock Slaughter 2021. Retrieved from: <https://downloads.usda.library.cornell.edu/usda-esmis/files/r207tp32d/pa15ci85z/hd76t466z/lson0422.pdf>.
- ² USDA (2022) Listed Slaughter and Rendering Facilities. Animal Plant Health Inspection Services. <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/sa-epidemiology-animalhealth-ceah/btc/main/index>.
- ³ USDA (2018). Per Capita Red Meat and Poultry Disappearance: Insights Into Its Steady Growth. Economic Research Service. <https://www.ers.usda.gov/amber-waves/2018/june/per-capita-red-meat-and-poultry-disappearance-insights-into-its-steady-growth/#:-:text=Based%20on%20USDA%20forecasts%2C%20in%20bu%203.7%20percent%20in%202018.>
- ⁴ USDA (2022). Livestock Slaughter 2021. Retrieved from: <https://downloads.usda.library.cornell.edu/usda-esmis/files/r207tp32d/pa15ci85z/hd76t466z/lson0422.pdf>.
- ⁵ USDA (2022). Poultry Slaughter 2021. Retrieved from: [https://www.nass.usda.gov/Surveys/Guide to NASS Surveys/Poultry Slaughter/index.php](https://www.nass.usda.gov/Surveys/Guide%20to%20NASS%20Surveys/Poultry%20Slaughter/index.php).
- ⁶ USDA (2016). Overview of the United States Slaughter Industry. National Agriculture Statistics Service, Agricultural Statistics Board. <https://downloads.usda.library.cornell.edu/usda-esmis/files/b5644r52v/jd473028z/7w62fc23r/SlauOverview-10-27-2016.pdf>.
- ⁷ Winders, D., Abrell, E. (2021). Slaughterhouse Workers, Animals, and the Environment. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8694297/>.
- ⁸Iowa Department of Natural Resources (2020). Water Efficiency for Commercial, Industrial and Institutional Facilities. Water Efficiency, Industry Specific Processes. Pollution Prevention Infohouse. <https://p2infohouse.org/ref/01/0069207.pdf>.
- ⁹ Iowa Department of Natural Resources (2020). Water Efficiency for Commercial, Industrial and Institutional Facilities. Water Efficiency, Industry Specific Processes. Pollution Prevention Infohouse. <https://p2infohouse.org/ref/01/0069207.pdf>.
- ¹⁰ Environmental Integrity Project. Burkhardt, K., Bernhardt, C., Peloton, T., Schaeffer, E., Phillips, A. (2018). Water Pollution from Slaughterhouses. Retrieved from: https://www.environmentalintegrity.org/wpcontent/uploads/2018/10/Slaughterhouse_Report_Final.pdf.
- ¹¹ Environmental Protection Agency (2022). Meat and Poultry Effluent Guidelines. Retrieved from <https://www.epa.gov/ea/meat-and-poultry-products-effluent-guidelines>.
- ¹² Environmental Protection Agency (2004). Technical Development Document for the Final Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category. Retrieved from https://www.epa.gov/sites/default/files/2015-11/documents/meat-poultry-products_tdd_2004_0.pdf.
- ¹³ Environment America Research and Policy Center. (2020). Slaughterhouses are Polluting our Waterways. Retrieved from: <https://environmentamericacenter.org/sites/environment/files/reports/Slaughterhouse%20factsheet%20FINAL.pdf>.
- ¹⁴ Environmental Protection Agency (2021). Preliminary Effluent Guidelines Program Plan 15. Retrieved from: <https://www.epa.gov/ea/preliminary-effluent-guidelines-program-plan>.
- ¹⁵ Environmental Protection Agency (2021). Preliminary Effluent Guidelines Program Plan 15. Retrieved from: <https://www.epa.gov/ea/preliminary-effluent-guidelines-program-plan>.
- ¹⁶ Environmental Integrity Project. Burkhardt, K., Bernhardt, C., Peloton, T., Schaeffer, E., Phillips, A. (2018). Water Pollution from Slaughterhouses. Retrieved from: https://www.environmentalintegrity.org/wpcontent/uploads/2018/10/Slaughterhouse_Report_Final.pdf.
- ¹⁷ Environment America Research and Policy Center. (2020). Slaughterhouses are Polluting Our Waterways. Retrieved

from: <https://environmentamericacenter.org/sites/environment/files/reports/Slaughterhouse%20factsheet%20FINAL.pdf>.

¹⁸ Environmental Protection Agency (2021). Preliminary Effluent Guidelines Program Plan 15. Retrieved from: <https://www.epa.gov/ea/preliminary-effluent-guidelines-program-plan>.

¹⁹ Lakshmi Singh, A. et al. (2014). Journal of Environmental Protection. Vol.5 No.6, Article ID:46296,10 pages DOI:10.4236/jep.2014.56058

²⁰ Odekanle, E. et al. (2020). "Air emissions and health risk assessment around abattoir facility." Heliyon, Volume 6, Issue 7. <https://doi.org/10.1016/j.heliyon.2020.e04365>.

²¹ Franke-Whittle I. H., Insam H. (2013). "Treatment alternatives of slaughterhouse wastes, and their effect on the inactivation of different pathogens: A review," *Critical Reviews in Microbiology*, 2013;39(2):139-151.

²² Winders, D., Abrell, E. (2021). Slaughterhouse Workers, Animals, and the Environment. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8694297/>.

²³ Environmental Integrity Project. Burkhart, K., Bernhardt, C., Peloton, T., Schaeffer, E., Phillips, A. (2018). Water Pollution from Slaughterhouses. Environmental Integrity Project. Retrieved from: https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf.

²⁴ Environmental Integrity Project. Burkhart, K., Bernhardt, C., Peloton, T., Schaeffer, E., Phillips, A. (2018). Water Pollution from Slaughterhouses. Environmental Integrity Project. Retrieved from: https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf.

²⁵ Environmental Integrity Project. Burkhart, K., Bernhardt, C., Peloton, T., Schaeffer, E., Phillips, A. (2018). Water Pollution from Slaughterhouses. Environmental Integrity Project. Retrieved from: https://www.environmentalintegrity.org/wp-content/uploads/2018/10/Slaughterhouse_Report_Final.pdf.

²⁶ Environment America Research and Policy Center. (2020). Slaughterhouses are Polluting our Waterways. Retrieved from: <https://environmentamericacenter.org/sites/environment/files/reports/Slaughterhouse%20factsheet%20FINAL.pdf>.

²⁷ Cape Fear River Watch et al. V. U.S. Environmental Protection Agency (2019). Retrieved from: https://www.biologicaldiversity.org/programs/environmental_health/pdfs/Petition-for-Review-of-EPA-Factor-Farm-Effluent-Guidelines.pdf.

²⁸ USDA. (2021). The Use of Water in Animal Production, Slaughter, and Processing. Retrieved from: https://www.fsis.usda.gov/sites/default/files/media_file/2021-07/NACMCF_2018-2020_Water_Reuse.pdf.