

ERTS Complaint 3 August 2022

Dear Environmental Risk Tracking System,

This is a complaint regarding discharge to groundwater by Klompe and Frieslandia Dairies located on Hornby and Stover Roads between Grandview WA and Sunnyside, WA. This complaint alleges leakage from earthen lagoons and is based on Tech Note 23 assessments performed by the WA State Dept. of Agriculture in 2015 – 2017.

According to the WSDA¹, lagoon 2003/2112 – 1 is 175 ft by 550 ft with a pond depth of 8.5 feet and a clay liner of unknown thickness. The lagoon is built into shano silt loam soil with 2 – 5% slopes. Year of construction is unknown. According to the WSDA Tech Note 23 inspection the lagoon has a high site risk and a medium structure risk.

According to the WSDA¹, lagoon 2003/2112 – 1 East is 300 ft by 280 ft with a pond depth of 12 feet and a clay liner of unknown thickness. The lagoon was built into Warden fine sandy loam soil with 0 to 2% slopes. Year of construction is unknown. According to WSDA Tech Note 23 inspection the lagoon has a high site risk and a high structure risk.

The Tech Note 23 data provided by Ecology and WSDA has many flaws, some of which are documented for Klompe/Frieslandia in the attached document.² The dimensions for one of the lagoons above do not correlate with aerial photographs of the dairies. Nevertheless, this is the best data available. And this data suggests that these two lagoons have a high risk for leaching to groundwater. FOTC feels justified lodging this complaint.

The WSDA inspector for this area has stated, without supporting evidence, that the permeability of the clay lagoon liners is 1×10^{-7} cm/sec. Without knowledge of the liner thickness this number is meaningless, If the liner is six inches thick or four inches thick the liner provides half or a third as much screening of pollutants as would a one foot thick liner. The twelve foot deep lagoon will leach half again as much pollutant to the underlying soil and aquifer as the eight foot deep lagoon due to greater hydrostatic pressure.

If the clay liner has a permeability of 1×10^{-7} cm/sec, and a one foot thickness, the shallower lagoon, 2003/2112-1, has a specific discharge of:

$$(1 \times 10^{-7} \text{ cm/sec}) \times ((\text{Depth} + \text{Thickness})/\text{Thickness}) = 1 \times 10^{-7} \text{ cm/sec} \times 9 = 9 \times 10^{-7} \text{ cm/sec}$$

Using the conversion table on page 10D-14, of the NRCS Agricultural Waste Management Field Handbook, Chapter 10³ this equates to 832 gallons per acre per day when the lagoon is full.

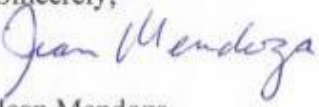
According to the data this lagoon covers over two acres. Assuming the lagoon is nearly full 100 days out or the year this lagoon leaks over 160,000 gallons of polluted water to the aquifer every year.

If the clay liner has a permeability of 1×10^{-7} cm/sec, and a one foot thickness, the deeper lagoon, 2003/2112-1 East, has a specific discharge of:

$$(1 \times 10^{-7} \text{ cm/sec}) \times ((\text{Depth} + \text{Thickness})/\text{Thickness}) = 1 \times 10^{-7} \text{ cm/sec} \times 13 = 13 \times 10^{-7} \text{ cm/sec}$$

Using the conversion table on page 10D-14 of the NRCS Agricultural Waste Management Field Handbook, Chapter 10³ this equates to 1,200 gallons per acre per day when the lagoon is full. According to the data this lagoon covers almost two acres. Assuming the lagoon is nearly full 100 days out of the year this lagoon leaks almost 240,000 gallons of polluted water to the aquifer every year.

Based on this data FOTC complains about discharge of pollutants to groundwater by Klompe Dairy and Frieslandia Dairy and asks the WA State Dept. of Ecology to take appropriate action as mandated in RCW 90.48.

Sincerely,

Jean Mendoza
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¹ Attachment 1. Tech Note 23 Spreadsheet provided by Ecology and WSDA. The WSDA states that the information is not entirely accurate, but they have not provided corrections.

² Attachment 2. Tech Note 23 – FOTC Comments

³ NRCS Agricultural Waste Management Field Handbook. Available at <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=31529.wba>



