

January 2, 2018

Attn: Margaret Crowley
BC Ministry of Environment and Climate Change Strategy – AWCR Review
PO Box 9341 Stn Prov Govt
Victoria, BC V8W 9M1
Email: env.ag.reg.reviews@gov.bc.ca

Dear BC Ministry of Environment and Climate Change Strategy:

Re: Response to the Agricultural Waste Control Regulation Review Intentions Paper

The purpose of this submission is to provide the BC Ministry of Environment and Climate Change Strategy with the University of Victoria Environmental Law Centre (the “ELC”)’s response to the November 2017 Agricultural Waste Control Regulation Review Intentions Paper (“AWCR Intentions Paper”). The ELC is an externally funded, non-profit society that operates Canada’s largest public interest environmental law clinic in partnership with the University of Victoria, Faculty of Law.

The Province’s review of the existing *Agricultural Waste Control Regulation*, BC Reg 131/92 (“AWCR”) is a positive step, which, if executed correctly, has the potential to help ensure that agricultural practices in the Province are consistent with the provision and protection of clean and safe drinking water. However, there are certain areas where the proposed changes in the AWCR Intentions Paper fall short. The following recommendations, organized thematically, address these areas, and outline what government must include in a final, revised *AWCR* to ensure that this regulation adequately protects the environment and human health.

Of the five recommendations below, the two most critical and absolutely indispensable are:

#1 Include the proposed additional trigger for mandatory nutrient management plans, which is based on the number of animal units at the farm. Any farm with 50 or more animal units must automatically be required to implement a nutrient management plan

#4 Ensure that the regulation requires an impermeable base (such as a liner) for all existing, modified, and new permanent manure storage

The ELC’s five recommendations are:

Nutrient management

1. Include the proposed additional trigger for mandatory nutrient management plans, which is based on the number of animal units at the farm. Any farm with 50 or more animal units must automatically be required to implement a nutrient management plan

The AWCR Intentions Paper states that in addition to using certain soil nutrient residual levels as a trigger for nutrient management plans, the government is proposing additional criteria for triggering the requirement for a nutrient management plan. These criteria could include animal numbers, density, or nutrient units. This aligns with the ELC recommendation in Appendix D of the POLIS Recommendations Report.¹ Specifically, the ELC recommended that government follow Washington State’s approach, and require mandatory nutrient

¹ Oliver M. Brandes et al., “From Crisis to Solutions: Towards Better Source Water Protection and Nutrient Management in the Hullcar Valley” (November 2017), online: <<https://www2.gov.bc.ca/assets/gov/environment/air-land-water/site-permitting-and-compliance/hullcar/review-docs/polis-hullcar.pdf>> at 40-44 [Brandes et al.]

management plans for all dairy farms as well as for other designed agricultural operations, or, as an alternate option, require mandatory nutrient management plans for dairy farms of a significant size (nine cows in Denmark,² 300 in Ontario³) as well as other agricultural operations of a certain size.

Providing this additional trigger will help ensure that operations with activities that could pose a risk to drinking water will have an extra safeguard beyond the soil nutrient residual level trigger. Such an animal unit trigger is an essential backstop to the highly technical and hard-to-enforce soil nutrient residual level trigger. This latter trigger is subject to too many vagaries (*e.g.*, Will the testing be done accurately? Will it be carried out consistently? Will correct testing be enforceable? Will test results vary because of environmental circumstances, sampling protocols, varying environmental conditions, etc.? In sum, will problematic nutrient loads at major farms be missed because technical data is not gathered, processed and enforced?).

The key problem with the AWCR Intentions Paper is that Government has failed to commit to a specific animal unit trigger. Instead, the Paper is inconclusive, stating that additional triggers *may* include “50 animal units or more for dairy” (where 1 animal unit = 455 kg).

Government must follow through with their intention to include an additional trigger for nutrient management plans based on the number of animal units, and set that mandatory trigger threshold at 50 animal units. This number of animal units is reasonable. It is higher than the number requiring plans in Denmark (9) and Washington State (1). This reasonable number will provide necessary protection when triggers based on technical tests may well fail to protect drinking water and other important general environmental values, such as clean lake water and fish that can be seriously threatened and damaged by nitrate pollution.⁴

2. Ensure that the regulation requires a 30% safety factor for all nutrient management plans in high risk areas until a Director confirms, with reference to post-harvest nitrate test results, that the plan calculations are accurate and a safety factor is no longer needed

The AWCR Intentions Paper states that a Director may require a nutrient management plan on a case-by-case basis if there is evidence of negative impact, or potential negative impact; the nutrient management plan must be independently verified, and the Director may require a safety factor.

Several parts of the POLIS Recommendations Report state that in high-risk and emerging problem areas, POLIS recommends that nutrient management plans have safety factors because the calculations that produce these plans are approximations.⁵ The POLIS Recommendations Report states that “[p]ost harvest nitrate tests in conjunction with independently verified NMPs [nutrient management plans] that include a safety factor are the most efficient means of preventing new leaching from occurring.”⁶ The POLIS Recommendations Report suggests that nutrient management plans have a safety factor of 30%, which would help create a buffer for variables that the original nutrient management plan calculations may not have adequately accounted for, such as reduced plant growth.⁷ The safety factor could be reduced or removed once the Director confirms, with

² British Columbia Ministry of Agriculture – Innovation and Adaptation Services Branch, *Jurisdictional Scan of Nutrient Management Regulations – A part of the Hullcar Situation Review* (2017), online: <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/site-permitting-and-compliance/hullcar/review-docs/631700-3_bc_agri_2017b_jurisdictional_scan_of_nutrient_management_regulations.pdf> at 12-13.

³ Environmental Law Centre, *Recommendations for Creating an Optimal Area Based Management Plan for Hullcar Aquifer* (May 2017) online: <<http://www.elc.uvic.ca/wordpress/wp-content/uploads/2017/05/2015-03-05-FINAL-HULLCAR-REPORT-2017May17.pdf>> at 10.

⁴ Agriculture and Agri-Food Canada, *Agriculture and water quality*, online: <<http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/water/watershed-protection/agriculture-and-water-quality/?id=1371491033072#a3>>; United States Environmental Protection Agency, *Nutrient Pollution – Where This Occurs: Lakes and Rivers*, online: <<https://www.epa.gov/nutrientpollution/where-occurs-lakes-and-rivers>>; United States Environmental Protection Agency, *EPA’s Report on the Environment: Nitrogen and Phosphorus in Streams in Agricultural Watersheds* (2015), online: <<https://cfpub.epa.gov/roe/indicator.cfm?i=31>>.

⁵ Brandes et al., *supra* note 1 at page 11, footnote 27, 29, and pages 15, 16, 20, 22.

⁶ Brandes et al., *supra* note 1 at page 13, footnote 38.

⁷ Brandes et al., *supra* note 1 at page 15, footnote 43.

reference to post-harvest nitrate test results, that the plan calculations are accurate and a safety factor is no longer necessary.⁸

3. Ensure that the regulation establishes clear criteria for when government will inspect farms with nutrient management plans

The AWCRC Intentions Paper briefly refers to compliance inspections twice (see page 19) in the context of the section on record-keeping and the section on corrective actions. However, there is no detail about how often the government will conduct inspections, or for which operations.

The government must commit to conducting regular inspections of operations with nutrient management plans, and specify how often they will occur. For example, Ontario monitors nutrient management plan implementation by conducting at minimum one random inspection per year, or more if the government deems it necessary due to the amount of risk they perceive the operation poses to the environment.⁹

Manure storage

4. Ensure that the regulation requires an impermeable base (such as a liner) for all existing, modified, and new permanent manure storage

The AWCRC Intentions Paper states that over vulnerable aquifers, permanent storage structures that are **new or modified** will be required to have an impermeable base and have a minimum of two meters vertical distance below the whole structure to the seasonal high water table.

The regulation will also require a qualified professional to design **new and modified** earthen storages, and the AWCRC Intentions Paper states that guidance for design and preparation of storage structures will include an impermeable base layer.

In addition, there are specific requirements for permanent liquid manure storage structures (including earthen storage). The regulation will require a qualified professional to design **new or modified** permanent liquid manure storage structures (including earthen storage), and the structure must be built according to that design. Further, the AWCRC Intentions Paper states that the Ministry is proposing a new requirement for **existing** earthen storage for liquid manure over vulnerable aquifers: within two years of a new revised regulation, the operator must have a qualified professional conduct an assessment to ensure the storage is not leaking. If the storage is leaking, the operator must put an impermeable base layer (or liner) in place.

The AWCRC Intentions Paper does not discuss whether permanent manure storage will be required to have overflow protection or a cover.

The above regulatory approach is problematic because, in general, it only requires liners for **new or modified** permanent manure storage systems – not existing ones. The only apparent exception is for earthen storage for liquid manure over vulnerable aquifers. Operators with this type of storage will need to have a qualified professional assess it within two years of a new revised regulation, and put an impermeable base layer or liner in place if it is leaking.

⁸ See Brandes et al., *supra* note 1 at page 11, footnote 27.

⁹ University of Guelph Business Development Centre, *Nutrient Management Consultants.*, online: <<https://www.nutrientmanagement.ca/directories/nutrient-management-consultants/>>, as cited in Brandes et al., *supra* note 1 at 43.

This approach falls short of the POLIS Recommendations Report, which recommends that “the requirement for an impermeable liner for the base of the storage should apply to all **existing and new** permanent and temporary manure storages, including earthen storages for liquid manure (unlined manure lagoons).”¹⁰

The ELC would like to reiterate its recommendation from Appendix D of the POLIS Recommendations Report:

“To prevent pollution of groundwater and contain manure for the period that it cannot be land-applied with low environmental risk, and make it easier to verify if pollution is occurring, all permanent manure storage should be required to have a liner to prevent leaching beneath the facility. To reduce risks further, require a cover to prevent storage facilities from filling with precipitation (which can lead to runoff), and overflow protection.

This matters: research has shown that all unlined manure lagoons end up discharging to either groundwater or hydrologically connected surface water. Alberta requires liners for CAFO manure storage facilities and collection areas; Washington expert Dr. Byron Shaw states that CAFO waste storage impoundments require an impervious liner with a true leak detection system.”¹¹

Furthermore, a cover and overflow protection is important, as evidenced by the Grace-Mar farm incident in Spalumcheen, B.C.¹² In February, 2017, Grace-Mar Farm’s manure storage lagoon overflowed. The farm owner, John Kampman, blamed the overflow on rain and snow runoff. He stated that “[h]eavy rainfall and winter snows filled the lagoon more quickly than expected, while the snow hid the actual level in the lagoon and it breached and overflowed.”¹³ Requiring covers and overflow protection will help avoid incidents such as the Grace-Mar farm overflow.

General scheme of the AWCRC

5. Clarify the process for adding aquifers to the list of vulnerable aquifers, and ensure that (a) the regulation includes clear criteria for adding an aquifer to the list, and (b) the regulation includes a process for a water supplier to nominate an aquifer based on existing or emerging concerns

The AWCRC Intentions Paper states that the revised AWCRC will apply a “risk-based approach.” As part of this approach, the regulation will require more stringent protections in high risk areas. A high risk area is one where, “due to permanent or usual geographic, topographic or climatic conditions, there is a high risk for adverse impact on the environment or human health,” and include: a high precipitation area, land over a vulnerable aquifer, and regionally-defined sensitive receiving environments or areas, such as a phosphorus-sensitive area. Land over a vulnerable aquifer refers to an area that has one or more aquifers classified as highly or moderately vulnerable under the British Columbia Aquifer Classification System. We understand that in addition to the categorization of the aquifer, the government will deem certain aquifers vulnerable by naming them in a schedule.¹⁴

Putting this additional safeguard in place allows government to name certain aquifers as vulnerable aquifers, even if they are not classified as highly or moderately vulnerable in the British Columbia Aquifer

¹⁰ Ministry of Environment and Climate Change Strategy, *Agricultural Waste Control Regulation Review: Intentions Paper* (November 2017), online: <https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/agriculture/awcr_review_ip3.pdf> at 9.

¹¹ Brandes et al., *supra* note 1 at 44.

¹² Megan Turcato, “Spalumcheen manure lagoon breach creates water worries,” (20 February 2017), online: <<https://globalnews.ca/news/3261801/spalumcheen-manure-lagoon-breach-creates-water-worries/>>.

¹³ Megan Turcato, “NDP questions province over manure lagoon spill, farm apologizes” (22 February 2017), online: <<https://globalnews.ca/news/3266489/ndp-questions-province-over-manure-lagoon-spill-farm-apologizes/>>.

¹⁴ Ministry of Environment and Climate Change Strategy, *DRAFT FINAL POLICY underlying proposed revisions to the Agricultural Waste Control Regulation* (7 October 2016) online: <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/site-permitting-and-compliance/hullcar/review-docs/hullcar_situation_review-draft_awcr_policy-2016-10-07.pdf> at 1.

Classification System. However, the government needs to make clear how the ongoing process for adding aquifers to this “vulnerable aquifers list” will occur. The regulation must set out simple, defensible criteria for adding an aquifer to the list. In addition, the regulation must establish a process whereby a water supplier such as a local water district may nominate an aquifer based on existing or emerging concerns.

Careful work must be done to ensure that high-risk areas are consistently and comprehensively identified – with full recognition of the serious limitations imposed by lack of complete data, knowledge and scientific certainty.

Regards,



Savannah Carr-Wilson
Articled Student, Environmental Law Centre
University of Victoria

“Deborah Curran”

Deborah Curran
Supervising Lawyer, Environmental Law Centre
University of Victoria

“Calvin Sandborn”

Calvin Sandborn
Supervising Lawyer, Environmental Law Centre
University of Victoria