



AGRICULTURAL WASTE CONTROL REGULATION REVIEW

SUMMARY OF PUBLIC COMMENT

ON THE

2ND POLICY INTENTIONS PAPER

Prepared for: BC Ministry of Environment

September 2015

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**Agricultural Waste Control Regulation Review
– 2nd Policy Intentions Paper**

Summary of Public Comment

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Agricultural Waste Control Regulation Review

1. Introduction

The Ministry of Environment (the ministry) is reviewing the Agricultural Waste Control Regulation (AWCR) in consultation with the agriculture industry representatives, provincial ministries and other stakeholders. The new agricultural environmental management policy framework will include:

- Updated policy;
- A revised regulation or new code of practice that will be enacted under authority of the *Environmental Management Act* (EMA); and
- Guidance documents (such as guidelines, fact sheets, beneficial management practices) and other non-regulatory approaches.

This report provides a summary of stakeholder comments received as part of the consultation process for revising the regulation under provisions of the *Environmental Management Act* (EMA) and the Waste Discharge Regulation (WDR).

1.1 Background to the consultation process

A policy intentions paper was posted for public review and comment on the ministry's website (<http://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/agriculture>) July 2 to September 15 of 2015. The intentions paper provided background information regarding the *Environmental Management Act* and the Agricultural Waste Control Regulation, and the proposed revised policy, as well as the process for providing comment to the ministry. A separate response form for providing comments or suggestions to the ministry was also posted on the website.

1.2 Purpose and format of the *Summary of Public Comment* document

This document has been prepared for the Ministry of Environment by C. Rankin & Associates, contracted by the ministry to independently receive, compile and review comment on the ministry's intentions for revising the regulation.

The complete set of responses received through the consultation process has been compiled and passed to the ministry for detailed review and consideration. All comments and references submitted through this process, through independent submissions and through direct consultations with stakeholders, will be reviewed and carefully considered by the ministry in revising the regulation.

The summary of responses is arranged by topic as presented in the intentions paper.

1.3 Description of responses received

Close to fifty detailed responses to the intentions paper were received (by e-mail and attached file) and have been recorded for this summary of stakeholder comments. The responses included submissions from six provincial agricultural associations or councils; federal, local and regional government; several regional health authorities and medical health officers; as well as community interest groups, individual farmers and other individuals.

Summary of Comments

A. General questions

Response Form Question A.1: In your view, do you feel that British Columbia's current agricultural management policies and regulations are effective? What are the reasons for your choice?

Most respondents who commented on this question felt that there are “significant gaps” in B.C.’s current agricultural management policies and regulations. No respondents felt that current policies are “quite effective” or “very effective”.

Most commonly, respondents commented that enforcement is the most significant regulatory gap. Related comments included: “there needs to be rules, not guidelines to follow”; “there is no enforcement... until after damage has been done”; and “there doesn’t appear to be enforcement of regulations”.

Several respondents pointed to contradictions or overlaps in regulations and policies related to agricultural operations. For example, respondents comments included: “the *Farm Practices Protection Act*... allows farmers to ‘side step’ the [current AWCR] regulation”; and “the AWCR is just one of many regulations pursuant to different Acts [relevant to] farming waste, result[ing] in cross-regulatory confusion to a level beyond the capacity/authority for regulatory line staff to decipher, or those in farming practice to take an interest... there is a dire need to streamline for clarity, reduced confusion, ease of interpretation and the promotion of compliance for the sake of the environment, health, and well-being”.

Additional comments included:

- “Does not place protection of human health as first priority, with protecting environment second and promoting agriculture a distant third”
- “There are two areas that the AWCR could improve upon; education and enforcement – education is a key component in helping people understand and improve the management of agriculture waste – enforcement of the regulations is required”
- “Compared to other jurisdictions, B.C. is a decade or more behind in addressing issues of confined feeding operations (CFOs) and manure application”
- “The current state of Agricultural Waste Regulations (AWR) does not consider the impact Concentrated Animal Feeding Operations (CAFOs) have on offset ‘ready to eat’ food producers”
- “The inclusion of commercial fertilizer has to be part of any comprehensive nutrient management plan and the regulations have to cover all operations whether or not they produce any agricultural waste”
- “[Our agricultural association] believes that the current regulations are mostly sufficient – any regulatory changes need to undergo science-based risk assessment and there must be a demonstrable need [for any regulatory changes]”
- “The existing AWCR use[s] too much of a one solution fits all situations approach, while in reality the province of B.C. is very diverse and complex, and regional or site-specific goal oriented approaches will work better”

Response Form Question A.2: Do you have any comments regarding the ministry's goals for updating the regulation (see 2nd policy IP page 1)?

Excerpt from policy IP: The Ministry's goals are to:

- Enhance and improve water and air quality by ensuring that good agricultural practices are followed.
- Provide regulatory certainty – through clear requirements and guidance on desired environmental outcomes.
- Facilitate appropriate and beneficial use of manure, agricultural byproducts and other nutrient sources.
- Ensure that manure, other nutrient sources and materials are stored and used so that watercourses and groundwater are protected.

Many respondents expressed “agreement with” or “support for” the ministry's goals for updating the regulation. One respondent, for example, commented that “overall, the environmental protection measures outlined in this policy paper align well with [our agency's] goals and program objectives with respect to water quality and appear to address potential gap areas in the current AWCR, particularly with respect to groundwater protection”. One government agency respondent expressed support for the goals, noting that “they are consistent with protecting the quality of air and water for the purposes of also protecting human health”.

The most common aspect that respondents questioned or commented on was the term “good agricultural practices”. Several respondents suggested that “responsible agricultural practices” is more appropriate, commenting, for example, that “farmers ... should be using materials such as manures in a way that maintains a balanced healthy environment” and that “there must be long term thinking towards a healthy environment”. One respondent commented that “the goal of ‘ensuring good agricultural practices are followed’ encompasses more than environmental concerns... such as the societal imperative for the production of safe, healthy food in a cost-effective manner”.

Several respondents noted the importance of “follow through” on the stated goals, commenting for example, that “clear requirements are essential... [and] should be linked to education of farmers [regarding] the environmental risk factors on their specific farm”; and “worthwhile goals – hopefully enforceable, encouraging and measureable”.

Additional specific comments or suggestions included:

- “An additional goal should be to revisit and review the regulation every five years”
- “[Missing] the goal of ensuring that use of commercial fertilizers does not cause any of the same problems that agricultural wastes can cause if used improperly”
- “The goals should include protection of environment and human health”
- “Past and current agricultural activities in British Columbia have resulted in water quality impacts that implicate [our agency's] areas of responsibility, including water quality impacts to fish-bearing streams... and excess nutrient impacts to groundwater quality in Canada-US trans-boundary aquifers – specifically... [our agency] has observed groundwater contamination of nitrate (well above Canadian drinking water quality guideline levels) due to pollution from agricultural activities in the trans-boundary Abbotsford-Sumas aquifer, with no mitigation trend over the past two decades, despite the current BC AWCR and associated voluntary... measures”
- “The goals... should be carried through into the literal writing of the AWCR, and not left subject to default by other legislation... or by another agency (e.g., a Health Authority,

Health Officer)... establishing clarity of function in regulation (regulation rather than subjective optional Guidelines)... [would be] a welcomed logical approach”

- “Aside from recognizing the issue of agricultural air pollution and its potential adverse health effects, there is no substantial discussion of policy direction or strategy dealing with it”
- “Not sure why only water and air quality are mentioned, as waste management can affect other media and resources such as groundwater, biodiversity, wildlife values and species at risk”
- “Normal farm practices are not being uniformly identified or practiced”

Response Form Question A.3: Do you have any comments about key environmental concerns and agricultural practices (see 2nd policy IP page 1)?

Excerpt from policy IP: improper agricultural practices can result in negative impacts to air and water quality, as well as contribute to cumulative effects – from point and non-point sources:

- Excess nutrients (e.g., nitrogen, phosphorus) and pathogens entering into surface water encourages algae growth – which depletes oxygen and contributes to eutrophication of water bodies – leading to fish and invertebrate die-off, and human health concerns.
- Nitrates and pathogens in drinking water (both surface water and groundwater sources) pose risks to human health.
- Suspended solids and sediments entering surface water from soil erosion and runoff can contribute to decreases in water quality.
- Air quality and air emissions concerns associated with agricultural activities include ammonia, particulate matter from manure and animal management activities, forced air ventilation systems and smoke from incinerators used on a farm – particularly when emissions reach levels that impact respiratory health.

While almost all respondents reiterated general support for the ministry’s goals in reviewing the AWCR and the key environmental concerns described in the policy intentions paper, many respondents also provided additional suggestions or comments on key environmental concerns.

Several respondents highlighted the importance of education in addressing environmental concerns commenting, for example, that “once farm operators [and their employees] understand how responsible practices can benefit their farm and protect the ambient environment, the potential for protection of the environment is enhanced”. A number of respondents pointed in particular to the potential environmental concerns associated with “large farms involving livestock” or “industrial farming”.

Differing comments were received on two topics: 1) consideration of commercial fertilizer within the scope of the proposed revisions; and 2) air emissions, dust and odour – and associated “nuisance concerns”.

With respect to commercial fertilizer and potential effects on water quality, one respondent commented, for example, that “[our government agency] is aware that some communities adjacent to agricultural operations have experienced increased nitrates in their drinking water sources, and expressed concerns around water use and availability – this suggests a regulatory gap, a need for public education, and/or issues with compliance”. In contrast, another respondent stated that “there is no known pollution issues with commercial fertilizer use”.

Many respondents commented on the topic of air emissions, dust and odour. Several recommended that “key environmental concerns should remain focused on the level of risk to the environment – [our organization cautions that], for example, *the AWCR should not address*

nuisance concerns with regards to smell or dust". Another respondent noted that "noise, odour and dust that are normal practices are nuisances, but exempt from legal action under the *Farm Practices Protection Act*". Other respondents expressed the opposite view – commenting, for example, that "the day is gone where odour can be viewed as simply a nuisance only, and the regulatory scheme needs to get in line with the reality of odour being a real health issue". One respondent provided a detailed submission addressing "unmitigated particulate discharge from poultry operations and it's effect on air quality and human health". The respondent noted that "high dust levels enhance the awareness of odours" citing a B.C. Ministry of Agriculture publication that "the concentration of odorants on aerosol particles is approximately 40 million times greater than found in an equal volume of air" and a Provincial Court of B.C. judgment that "odours that cause or are capable of causing material physical discomfort to a person are classified as an emission that causes pollution". The respondent concluded with a recommendation that "the regulations [should be strengthened] to require that all poultry operations comply with the best practices outlined by the Department of Agriculture and the Environmental Farm Plan, i.e., all barns must have down hoods and vegetative barriers".

Additional comments or suggestions included:

- "Using the term 'respectful agricultural practices' would strengthen the link between agricultural practices and the receiving environment"
- "Does not identify contamination of nearby food crops by pests and insects"
- "[Our government agency] supports the continued inclusion of wording around the risks to human health should drinking water sources be contaminated, and the wording highlighting the protection of respiratory health"
- "Overgrazing and deforestation, erosion can impact long term viability of soils not just impact water"
- "Key concepts should include... placing additional or new government resources into education/extension programs, incentives to adopt new practices, and monitoring as a first alternative to placing resources into enforcement [and] use of the Environmental Farm Plan as the environmental risk assessment tool – incentives in the... program will need to be enhanced to attract more growers to completing the voluntary plan"
- "Regulation needs to encompass non-traditional compounds (antibiotics, endocrine disruptors, medical radiological components, prions) of ever increasing public concern, especially when Biosolids is part of the mixture".

Response Form Question A.4: Do you have any comments about key policy concepts in the updated policy and revised regulation (see 2nd IP page 2)?

Excerpt from policy IP: Key concepts in the policy framework include:

- The potential for beneficial use and appropriate management of manure and other agricultural byproducts and wastes.
- Direct discharges – for example, from pipes or spreading equipment into surface water or groundwater – would not be allowed.
- Manure deposited by animals would be excluded from the direct discharge prohibition.
- Indirect discharges causing negative or adverse effects will be addressed.
- Regulatory intent will be clarified by grouping common requirements in terms of desired environmental outcomes (e.g., storage).

- Corrective measures may be incorporated, where appropriate, to clarify expectations.
- A higher level of protective measures for areas and conditions where there is a higher risk or potential for pollution.
- Non-regulatory tools to facilitate and foster good agricultural practices.

Many respondents noted their support for the policy concepts while providing suggestions for “clarifying intent” or “strengthening” the policy statements. For example: “have very clear and unambiguous requirements to prevent groundwater contamination”; “the distinction between direct discharges and indirect discharges would benefit from greater clarification; and “desired environmental outcomes must be realistic and achievable”.

Respondents differed in their comments regarding education and enforcement. For example, one respondent felt that “[there is an] over emphasis of non-regulatory tools – there is a continuum of progressive enforcement that should be followed”. In contrast, another respondent encouraged the ministry to “use non-regulatory tools to facilitate and foster good agricultural practices” commenting that “[our agricultural association] believes that improved outcomes are more easily achieved through education and outreach than by regulatory change”.

Many comments addressed the concept of “a higher level of protective measures for areas and conditions where there is a higher risk or potential for pollution”. All respondents commenting on this subject expressed support for the approach with many providing suggestions on how it should be applied. Comments and suggestions included: “in higher risk areas such as near water bodies or over aquifers high level rules should be put into the regulation – these rules should be strongly enforced”; “[this approach] is appropriate – there is no advantage in imposing burdensome and restrictive management practices on low risk areas that could actually benefit from slightly elevated nutrient loading”; and “consider including areas that are already showing pollution impacts as well as areas with higher risk or potential for pollution - helps to focus on current status as well as the risk profile”.

Additional comments or suggestions included:

- “The first point that allows for grazing animals to directly deposit manure on grazing areas is reasonable since this represents a natural process that returns nutrients to their original source – when nutrients are consistently removed the environment suffers, becoming stale and less productive”
- “Protection of all water sources must be protected and enforced”
- “What about [including] policies regarding use of Qualified Environmental Professionals to provide direction to achieve outcomes?”
- “[The policy concepts should be] inclusive of the ‘concept’ or ‘scope’ of regulatory harmony (with other relevant legislation), and [have] a strong focus on clarity of direction to accomplish the stated purpose and outcome... bring some reasonable prescriptive clarity (goal posts) into the regulation”
- “Higher risk situations and areas SHOULD INCLUDE AREAS proximate to ‘ready to eat’ food growing areas and residential areas – these higher risk areas should be VERY CLEARLY DEFINED”
- “Measures need be implemented [only when there is] an identifiable and demonstrable risk”

B. Structure and content of the updated policy and revised regulation

Response Form Question B.1: Do you have any comments regarding “general considerations” and/or the over-arching goal for the revised regulation (see 2nd policy IP page 2)?

Most comments provided in response to this question related to the ministry’s intent to harmonize requirements with existing regulations. Several respondents expressed support for harmonization. One respondent (from the B.C. Ministry of Health) commented that the ministry “supports the inclusion of the protection of human health in the over-arching goal”. Another respondent (from an agricultural association) cautioned that “the AWCR may not be an appropriate tool for protecting human health... [and] caution must be exercised such that regulations are not duplicative”. Another respondent commented that “harmonization with existing regulations defining recycling and composting should take into consideration ‘high risk’ areas, and the requirements for these areas should be considerably more stringent than in low risk areas – and [that] ‘high risk’ areas should include adjacent areas where fruits and vegetables are normally grown for commercial purposes”.

Several respondents commented on the relationship between the Agricultural Waste Control Regulation (AWCR) and the Farmland Protection Policy Act (FPPA), particularly with respect to “normal farming practices”. One respondent, for example, recommended that “[since the] term ‘normal farm practices’ is used in the FPPA – if a situation arises where pollution can be caused from normal farm practices, the AWCR should overrule the FPPA”. Another respondent recognized that “the FPPA has an important role regarding nuisance complaints but when there is a perceived risk of pollution of air and/or water, the AWCR should supersede the FPPA”.

Additional specific comments or suggestions included:

- “I strongly disagree with allowing fugitive dust to remain as a ‘nuisance’ under the existing FPPA – in Kelowna, dust coming off of a feedlot, manure storage area, and composting area was blowing directly on to [nearby] orchards and vegetable farms and this ‘nuisance’ was completely discounted by the Farm Industry Review Board (FIRB)”
- “There is no legislation that is dealing with odours as they are defined as nuisances – this seems to me as a significant gap”
- “[Our agricultural association] asks that the Ministry consider the unique needs and requirements that are present in our agricultural operations”
- “The working group was only industry – the needs of those impacted have been dismissed by the process and challenge the credibility of the industry and the regulators”

Response Form Question B.2: Do you have any comments with respect to consideration of risk to the environment and the ministry’s risk-based approach in the revised regulation (see 2nd policy IP page 3)?

Almost all respondents who commented on this topic noted support for a risk-based approach to regulation and development and use of risk assessment tools. There were marked differences among respondents however, on how and where an environmental risk assessment should be conducted. Many respondents felt that “all farms should have an environmental risk assessment” and/or that “such plans should be created with assistance from a qualified professional”. The rationale for these recommendations included objectivity, consistency,

protection of the environment and human health, and/or credibility. Other respondents pointed to challenges in requiring environmental farm plans, particularly for small and hobby operations, and expressed support for establishing a self-administered tool for environmental risk assessment. One respondent, for example, expressed concern that “a risk assessment prepared in a regulatory context may introduce moral-hazard for producers if they fear that a thorough risk assessment may have regulatory consequences”. Respondents recommended that “evaluations of risk should use a science based risk assessment” and that “risk assessment tools... be developed with the support of industry”.

Several respondents recommended that the ministry provide more explicit criteria for identification of, or undertake mapping of, “high risk areas”. For example, “the distinction between climate factors and weather condition factors [needs to be clarified]”; “proximity to human habitation and to food production sites in risk assessment [is missing from the criteria]”; “include [consideration of] adjacent land use”; and “high risk areas need to be specifically defined somewhere”.

Additional specific comments or suggestions included:

- “Creating [a plan] with assistance from a qualified professional – [provides] an opportunity for the ministry or working groups to provide educational workshops about the four factors to consider when creating an ‘environmental risk assessment’ plan – these workshops could clarify how these factors relate to individual farm operations and assist each farm operation in completing a plan that is relevant”
- “[Our municipality] recommends that there be a monitoring process to ensure that farm operators are implementing and adhering to the environmental risk assessments, particularly in high risk areas and conditions where high level protection is required – furthermore... that there be an opportunity for local governments and residents to be involved in identifying high risk areas in our communities”
- “Without a risk based approach, any regulation, policy or protocol will be ineffective in achieving the desired outcome – we live in a complex and diverse province and management practices that achieve excellent results in one region may in fact be detrimental to another, different ecosystem”
- “Please apply a more thorough environmental health impact assessment requirement”
- “Recommendation: farms and ranches located over unconfined aquifers need to be informed of this risk and support, both financial and professional expertise, be offered to mitigate any necessary impacts and changes to the farm/ranch operation”
- “Our industry would support a risk assessment strategy that would allow for a feedlot operation to receive financial and logistical support should a relocation or large modification be required’
- “Where producers participate in industry implemented programs, such as proAction®, which include appropriate risk assessments [there is not a need for a] separate regulatory requirement that requires duplication of this process”
- “As seen in 2015, all areas have the potential to be High Risk...meaning a lot of teaching and learning for producers – ‘in certain circumstances’ seems like an arbitrary way to define the level of risk”
- “[A risk assessment and plan] has to be flexible enough to allow for manure spreading at the best time of year for certain operations”

- “Under the Location factor, the terms used as examples could benefit from greater distinction – suggest re-wording such as: (e.g., vulnerable aquifers, drinking water supply sources, surface watercourses and ecologically-sensitive receiving environments)”
- “Mid- and large-size operations are usually part of an industry association that helps provide capacity to farmers to participate in activities such as environmental assessments, stewardship activities or learning initiatives, or access funding (such as the Environmental Farm Plan)... [our agricultural council] does not anticipate the proposed self-administered environmental risk assessments would be anything but well-received by these mid- and large-size operations”
- “Ensure an effective strategy for engaging and regulating small lot holdings”

Response Form Question B.3: Do you have any comments regarding updating definitions (see 2nd policy IP page 3)?

A number of recommendations for updating definitions were suggested by respondents. Specific comments included:

- “Manure from flush barns, solid manures and liquid manures should be in three separate categories as they need to be managed differently”
- “To be effective in the field, clear definitions of the basics are required – e.g., define ‘manure’, and when manure is no longer manure, when ‘compost’ becomes compost, and be clear if the definition relates to the noun (manure or compost), or the ‘action’ taking place, or a combination of both – in the same way, define ‘agricultural wastes’, ‘agricultural products’, and ‘agricultural operation’ – without clearly defined terms in harmony across relevant legislation, the process (from field level administration through to the courts) is in a vacuum, and in a position of deferring to FIRB decision (past or future)”
- The definitions [associated with] manure must be clarified – manure from CAFO or feedlot pens must be considered as manure storage and removed on a regular basis... manure in the process of being composted is still manure and is only compost when it meets the Canadian Food Inspection Agency(CFIA) definition of compost (effectively pathogen free)”
- “A definition of ‘wood waste’ should be made that excludes own-farm prunings that are processed with a flail mower and used as a soil conditioner”
- “[Our agricultural association] acknowledges and supports the distinction that is made between ‘wood waste’ that may be suitable for agricultural uses and other wood waste that may be harmful to humans, animals or crops – different waste materials should also be defined separately if they are unique to the agricultural industry and/or have special handling requirements that are not common to other industries”
- “Regarding ‘wood waste’, a farm operation should not be able to store more wood waste that can be used in that season (four months) – otherwise farms may become dumping grounds for waste that mills can no longer use”
- “Large ‘industrial’ farms are beginning to emerge in the agricultural sector – these large scale, intensive type of farm are very different from traditional family farms – ‘industrial’ farming concentrates large number of livestock in a small area and creates large volumes of agricultural waste – the animal to land ratio should be practiced and enforced”

- “More accurate definitions for agricultural products, by-products, field storage... [our agricultural association recommends] that industry groups continue to be included in finalizing the definitions”
- “A key priority should be to update the definitions by injecting clarity, for the outcome of concise communication of terms both within the AWCR and across other relevant legislation – and once clearly defined, terms should smoothly tie into the regulatory sections of relevant legislation”
- “Watercourses are loosely defined”

Response Form Question B.4: Do you have any comments regarding setback distances (see 2nd policy IP page 4)?

This question generated substantive and divergent comments. One set of respondents (from both within and outside of the agriculture sector) advocated firm setback distances (for example, “15 metres from high water mark of a water body” and “[at minimum] 30 meters from water wells”) with “strict enforcement of these setback distances to drinking water sources [and] fines issued for non-compliance”. A number of respondents commented that a setback from watercourses of 15 metres from top of bank is “consistent with other legislation”. In contrast, other respondents (largely identifying as working in the agricultural sector) recommended that “setback distances should be determined based on risk that is determined by site topography, climate, etc.”, commenting, for example, that “arbitrarily establishing distances may not provide the most environmental protection or benefit” and “it is the opinion [of our association] that these distances could be more or less than the stated 15m depending on the individual situation and should not be restricted by a set distance”.

Several commented on existing facilities that may be within setback distances. Related comments included: “existing, non-polluting facilities, must be grandfathered if regulatory requirements change – in order to foster a positive investment climate for all businesses in British Columbia, it is a fundamental principle that, when developing facilities, the regulations of the day can be relied upon”; and “existing infrastructure that is within the listed setbacks should be grandfathered in unless in a dilapidated condition requiring replacement – in situations requiring the relocation of buildings, corrals, etc. we urge the province to provide financial support to assist with implementing these significant and costly upgrades”.

A number of respondents who commented on this topic noted interactions between local and provincial government regulation and roles. One respondent, for example, commented that “matching [setback distances with regulations of] municipalities is ok if municipalities have strong enough bylaws”. Another respondent cautioned the ministry “[not to] depend on local government bylaws; local governments look to the ministries and provincial legislation for expertise – it is reasonable to state minimum setbacks, and to allow local governments the ability to specify more stringent measures, but with the understanding that certain environmental conditions may render the necessity for greater than the minimums to provide adequate health and environmental protection”.

Several comments were received regarding setbacks from neighbouring homes. One respondent outlined a history of issues involving storage of manure with a neighbouring agricultural property that has resulted in health issues and involvement of regional and provincial regulatory agencies with few tools to address the concern. A number of respondents recommended that “local governments should have the ability to further restrict setback distances to [address] land use interface conflicts”.

Additional comments included:

- “My understanding is that there's work underway by the Ministry of Forests and Lands Range Management Branch in regard to riparian areas and nose holes to water courses for cattle to drink, and that a new *Agriculture Act* and associated Guidelines for 2016 is underway, so it's vital that all terminology is clearly cross-linked”
- “The regulation should enable/require the engagement of a professional competent in hydrogeology, as some scenarios even greater than the minimums may present concerns – a properly functioning regulation should facilitate professional input before something goes wrong”
- “Setback distances must include the requirements set out by the CFIA in regards to importation of leafy greens and those set out by Good Agricultural Practices (GAP), whereby the setback is sufficient to avoid pathogen transfer between manure and offsetting crops – not addressing this issue will have a significant impact on B.C.'s ability to export produce – jurisdictions like Alberta have addressed this issue and B.C. should strongly consider adopting similar requirements”
- “Setback distances should consider slope/grade of land towards the receiving environment (e.g., as slope increases a greater horizontal distance may be required)”
- “Minimum setbacks should apply to fish bearing streams only”

Response Form Question B.5: Do you have any comments regarding storage requirements (see 2nd policy IP page 4)?

Several respondents commented that what constitutes “sufficient storage” varies with “operation and situation”. Recommendations for (temporary) storage capacity based on length of time varied from “the proposed seven months of temporary field storage” to “at least a year”. A respondent noted that “in practice, adequate storage is determined by the number of months between growing seasons and an adequate reserve”. One respondent, pointed to the example of “annual crops, such as such as corn that require the total nutrient application in the spring before planting – if only nine months of storage exists, then the capacity will be exceeded during the winter when spreading will risk surface and groundwater”. Another respondent recommended that “the regulation set a limit on the quantity of solid material that can be stored on site temporarily at any given time, even for periods under seven months, instead of restricting quantities in cases of chronic problems only – in cases of chronic problems, the quantity limits could be adjusted as needed”.

A number of respondents recommended including requirements for impermeable covers for temporary field storage “since this will further limit run-off/leaching to groundwater and wind erosion”. One respondent cautioned however, that “any change to on-field temporary storage, the definition of a storage facility or to building requirements [should] be backed by scientific facts” and “that current storage facilities [should] be grandfathered” if there are changes to storage capacity requirements as reconstruction of existing (“non-polluting”) facilities could involve significant costs and “would represent a significant compliance burden”.

Several respondents commented on the transport of manure. Related comments included: “we support the allowance for movement of manure from one farm to another – the majority of manure storage for the beef industry would qualify as temporary field storage”; “manure haulage sometimes makes use of temporary storage locations on land that might not meet the definition of a farm, but where the waste is still agricultural waste with the potential to cause

negative environmental impact if not stored properly”; and “currently, there is no means to identify the amount of manure (and related nutrient content estimates) being transported across farming regions in British Columbia”.

Additional specific comments or suggestions included:

- “What appears to be missing is a clause addressing the liquid manure storage facilities filling with rain water during the winter months – of concern is the Fraser Valley... this concern needs additional attention with the view of finding a phased-in approach with a long term solution”
- “Manure is manure until it meets the CFIA definition of Compost (essentially pathogen free) – as such manure cannot be classified as ‘being composted’ and afforded special consideration – the current limit of nine months of ‘field storage’ should be enforced”
- “The minimum setback distances for addressing permanent storage and temporary field storage should be included in provincial regulations, not local government bylaws – [for example,] the Regional District of Central Okanagan has no setback requirements for manure storage – manure storage up to a property line is allowed”
- “The reference to ‘specific concerns or chronic problems’ should encompass adjacent land use (orchards or vegetable farms) and proximity to residents”
- “I have concerns with the ‘allowable storage methods’... and the practice of storing manure from fur-bearing animals, under their outdoor pens – in areas of the province that receive a total average precipitation more than 600 mm during the months of October to April inclusive, this may not be an acceptable practice as the storm water falls from the edge of the barn roofs and splashes on the manure pills under the pens where it becomes contaminated with nutrients and fecal material”
- “Manure in pens should be considered manure storage and must be removed and dealt with according to the storage requirements”

Response Form Question B.6: Do you have any comments regarding agricultural composting (see 2nd policy IP page 5)?

Respondents commenting on this question frequently expressed support for enabling (or not restricting) the movement of manure between farms in support of good nutrient management. One respondent, for example, noted that “[our association] agrees that there is no need to implement overly restrictive requirements with respect to agricultural composting and that a risk assessment is used to determine the necessary level of restrictions – composted materials are beneficial to agricultural operations therefore [our organization] supports the ministry’s stated intention not to restrict movement between farms”. Another respondent cautioned that “if composting is occurring off farm, then clarity on documentation is required – providing composting operations becomes a secondary business and should be subjected to business regulations beyond ‘normal agricultural operation’” and include permanent storage structures and leachate control, etc.”.

Several respondents recommended that “in composting operations that are continually composting on the same site, an impermeable barrier is necessary beneath the compost piles to prevent leaching – the composting area should be surrounded by a protective berm if the land is not level to reduce the risk of leachate moving overland or of nutrients from such leachate percolating into the groundwater”.

Additional specific comments or suggestions included:

- “As the Organic Matter Recycling Regulation (OMRR) will not apply to agricultural composting, and the composting will not have ‘strict documentation of retention times, temperatures and turning regimen’, there may be a need to demonstrate some sort of minimum standard that must be achieved by the composting process prior to land application – it is assumed that land application practices will be consistent with the key environmental goals and also follow established best practices – considering the public resistance to land application [of biosolids], application of agricultural compost should be similarly defensible”
- “Ensure that the new regulation clearly identifies when manure becomes compost, and don't leave this subject to the varied discretion of farmers and government agents – and, bring odour into the realm of the composting framework”
- “Composting should not be left to natural biological degradation (rotting) – it should always be a carefully managed process to achieve optimal temps, etc. to minimize potential for nuisance or more serious health hazards”
- “[It is good] to see that vector attraction is being considered in agricultural composting – flies and birds are attracted to feedlots because of the food being fed to cattle and waste that is generated – these vectors can transmit pathogens to nearby food producing areas as well as to residents”

Response Form Question B.7: Do you have any comments regarding land application of nutrients (see 2nd policy IP page 5)?

Almost all respondents commenting on this question expressed support for the concept of nutrient management planning. Some recommended that “every farm should have a mandatory nutrient management plan” while others felt that “record keeping, while useful, should not be mandatory unless special circumstances exist” or that “requirements in this section... should only apply to high risk areas/conditions”. One respondent, for example recommended that “new record keeping requirements should be limited to high-risk operations; be phased in over a 12-36 month period; and that this new requirement be clearly communicated to the farming/ranching community”. Another respondent commented that while “[our agricultural association] promotes nutrient management planning... we are not in favour of... plans being required by regulation”.

Additional specific comments or suggestions included:

- “There is no mention of a mandatory Nutrient Management Plan (NMP) monitored/ managed by a qualified professional (QP) – in environmentally sensitive areas such a policy is essential... [in addition], ministry staff should be able to enter a farm facility [for] inspection of soil, manure test and application records”
- “Point one [in the policy IP – ‘runoff containing excessive nutrients that cause deleterious effects entering watercourses, drinking water sources or groundwater’]... does not refer directly to leaching”
- “The intentions paper speaks to potentially restricting the application of agricultural wastes and by-products during certain times and conditions – this statement is too ambiguous, particularly in a province such as British Columbia which has numerous bioclimatic regions, a wide range of agricultural commodities and significant differences in the growing conditions and growing season... regulations should be careful to not prohibit innovative

(non-polluting) application methods... [our association] notes that there is an inherent tension between nutrient application for the benefit of crops and for environmental risk management... for these reasons, we prefer the promotion of nutrient management planning through industry developed programs”

- “This likely represents the biggest risk to the receiving environment and it is a challenge to regulate and enforce... record keeping is very important and a good step toward addressing this topic – need to have penalties for not keeping records, failing to produce records etc. – also, penalties for poor recording keeping should be ticketable”
- “B.C. dairy farms will be required to have a nutrient management plan as a part of the national proAction Initiative – there is no need for regulation to duplicate an industry-led initiative... any regulatory requirement to conduct monitoring and testing will change the producer’s perspective – *a voluntary soil testing program encourages producers to seek results that improve management outcomes* – a regulation will encourage producers to seek test results that can demonstrate an absence of nutrient concerns – this would reduce the effectiveness of nutrient management plans... we are concerned that a requirement to retain records and make them available for review by ministry officials will discourage farmers from collecting useful information about soil and nutrient conditions on their land – concerns that test results will be used by the ministry to enforce compliance introduces moral hazard for producers, by encouraging collection of samples using methodology that would tend to bias samples to show less concerns”
- “Specified nutrient management plans should be a blanket requirement... if left only to best practices or voluntary record keeping the damage can be done with no recourse for follow up – this policy could be much more progressive by being more proactive rather than reactive (after the damage to the aquifer or viable/precious farmland has already been done)”
- “The two main concerns raspberry farms have are: 1) runoff from adjacent manure spreading (or crossing property lines); [and] 2) allowable time to spread early enough in the spring to meet food safety standards – the first point has been addressed and [with respect to the second, we] don't see any specific time limitations for early spring application”
- “Agree with the proposed strategy but believe that ‘high risk’ surface water needs to be clarified – not just based on distance to surface water but on ‘hydrologic connectivity’ between a field and surface water”
- “Should include commercial fertilizers as they cause as many problems as manures – in low rainfall areas soil sampling to 24 [inches] or 60 cm is needed to get the full picture of requirements for the crop”
- “For areas overlying vulnerable aquifers, there is an apparent gap with respect to approaches to address the issue of application of manure with a high Nitrogen/Carbon ratio as a soil conditioner to bare fields (i.e. fields stripped of vegetation during crop rotation/renovation, etc.) since this practice has been associated with excessive nitrate leaching to groundwater – collaborative research between Environment Canada and Agriculture Canada over the period 2009-2015 has identified this agricultural practice as a significant source of N-loading to the underlying Abbotsford-Sumas aquifer”
- “I don't feel anything will change unless you allow municipalities to have some control – our vulnerable aquifer is being contaminated and the farmer is still allowed to pour over 6000 gallons of liquid slurry on the field... of concern... our municipality asked for a no effluent for this growing season and the farmer was given a permit anyway... [and] they applied [liquid slurry] within ten feet of a private well – if a municipality is dealing with a

farmer like this I feel they should have some control to enforce the rules in order to protect the aquifers in their municipality”

Response Form Question B.8: Do you have any comments regarding managing mortalities (see 2nd policy IP page 6)?

Most respondents commenting on this topic “agreed that soil type and climate [are] major factors in setting minimum setback distance for storage of mortalities” and that “the proposed methods of managing mortalities seem reasonable” and/or “achievable”. One respondent suggested also that “causative factors behind livestock mortalities (particularly in disease outbreak situations)” be considered in determining appropriate setback distances. Respondents noted that burial of mortalities “can be problematic... in much of south coastal B.C. because of high water tables”. To address this, one respondent recommended that “no-cost alternatives (e.g., public landfills, collection sites) must be... made available... [and] established in consultation with the local farmers and ranchers”.

Additional specific comments or suggestions included:

- “Managing composted mortalities such that no bone get land applied is good – screening is the simplest way”
- “[Our association] opposes the proposal to regulate siting of incinerators relative to property boundaries – such siting of incinerators [involves] no environmental risks and exposes the regulator to management of nuisance practices –nuisances caused by agricultural operations are the jurisdiction of the Ministry of Agriculture through the B.C. Farm Industry Review Board”
- “The regulation should clearly identify [that mass carcasses over what would be considered normal mortalities is not within the current or proposed regulation], as well as stipulate provisions to capture the scenario whereby as few as one single animal dies from something of vital concern, example the Alberta mad cow death a few years ago”
- “Need to define maximum capacity of a particular site to accommodate mortality burials”

Response Form Question B.9: Do you have any comments regarding use of wood waste (see 2nd policy IP page 8)?

A review of responses to this question points to the importance of definitions when considering types of “wood waste”, “acceptable wood types” for on-farm use and “artificial growing media” that may contain bark and/or sawdust. Several respondents expressed support for (or agreement with) “the distinction between allowable uses, such as sawdust for livestock bedding, and high risk uses of wood waste” and a prohibition on use of “construction wood wastes with glue, paint or preservatives” and/or “storage of discarded building materials from off the farm”. Several respondents commented that they found “the proposed requirements and setbacks for storage and use of wood wastes reasonable” and/or general “agreement” with the proposed provisions.

A number of respondents expressed concern that the proposals regarding use of wood waste in the policy IP were overly restrictive or prescriptive. Related comments included: “there is no need of restriction on soil amendment or conditioner (second column of table) – soil amendment or conditioning with own-farm wood waste should be exempt”; and “untreated

wood shavings and chips have no unnatural substances within themselves – as there is no science showing deleterious effects to fish habitat or the environment in general from the introduction of small amounts of clean wood waste, maximum application rates should not be established in the regulations – rather, the same risk based approach should be applied to wood waste as is being adopted for the other types of agricultural wastes”.

Additional specific comments or suggestions included:

- “There is mention of not allowing use of wood waste for ‘access through a swale, wetland or watercourse’ [this would] trigger other regulatory requirements under the provincial *Water Act* and federal *Fisheries Act*... this statement should be removed [to reduce duplication of regulations] or qualified [with a statement] that other approvals may be required [for these kinds of uses]”
- “[The] document only [refers to] development and maintenance of riding rings... it should include paddocks, outdoor stalls, food sheds and any other facility that would use wood waste”
- “I have two problems with this section: 1) the maximum depth of application has actually decreased to 10cm from the 15cm proposed in the 2012 1st draft [of ministry intentions] – 10cm application depth is entirely inadequate for use as a ground cover or for farm access roadways or growing areas – 15cm is a minimum depth, and 20cm would be better; [and] 2) artificial growing media containing bark/sawdust along with other ingredients such as peat, perlite, pumice etc. should not be lumped in with wood waste”

Response Form Question B.10: Do you have any comments regarding livestock access to water in feeding areas (see 2nd policy IP page 9)?

Responses to this question were distinctly divergent. Almost all respondents who identified themselves as working in the agricultural sector or an agricultural association expressed support for the recommendations in the policy IP, commenting, for example, that “the guidelines... are reasonable and practical – if they are practical then producers will be motivated towards compliance”; and “[our association] finds the requirements in this section achievable for both grazing areas and seasonal feeding areas – we accept that there will not be any direct access to water in confined feeding areas”.

In contrast, almost all respondents from public sector organizations (such as health authorities), community interest groups and other interests expressed concern about livestock access to water in feeding areas. Examples of related comments include: “livestock should be prevented access to any drinking water sources (i.e., congruent with watershed protection) to protect against adverse human health impacts”; “I have concerns with this practice in the Fraser Valley as it will likely impact the aquatic habitat”; “not only do the cows defecate in and around the creeks though out the Cariboo/ Chilcotin Region, they damage the riparian areas which are crucial for aquatic life”; and “[costs to the taxpayer – of inadequate regulation of livestock access to water – include] deterioration of stream and river banks, the destruction of wetlands, wildlife habitat and tree plantations [and] the compacting of soils”.

Additional specific comments or suggestions included:

- “There should be defined setbacks of livestock access near potable water sources”
- “Evaluation of soil types in fields should be completed to determine the best watering locations to limit erosion – ensure Best Management Practices are well defined to ensure minimum impacts on watercourses”

- “[Our association] notes that the definitions of “seasonal feeding areas” and “confined feeding areas” are extremely important in defining the scope and application of regulations in this area – changes to definitions in this section should be considered in the context of the potential regulatory impacts”
- “This is an outdated and inappropriate practice as proposed – better management practices would preclude direct access of livestock to surface water courses of any nature”
- “The latest AWCR update/review referred to Best Management Practices on Crown Land in Community Watersheds – in [the links to] reports [provided by our group with this submission]we note in detail that MFLNRO has promoted the notion that some higher level of care... applies to Community Watersheds – the Forest Practices Board and the organization representing logging on private land have both stated that there is no justification or worthwhile rationale for distinguishing between officially designated “Community Watersheds” and the many undesignated watersheds on which many are dependent –the Ministry of Environment needs to require all watersheds get protection and not follow the artificial distinction that Ministry of Forests... has promoted”
- “The [policy IP states] that ‘Management Plans for grazing leases do not consider water quality and that dispersed grazing for low intensity well distributed livestock on grazing leases generally poses a low environmental risk to water quality’ – our [attached references to links and articles] show this claim to be unjustified”

C. Ministry’s approach to compliance

Response Form Question C.1: Do you have any comments regarding the ministry’s approach to compliance with respect to agricultural environmental management (see 2nd policy IP page 10)?

Two themes were clear in the responses received on this question. First, that education and communication is “a necessary pre-requisite” to support understanding and compliance with the regulation. Second, that “robust enforcement” and “a mechanism for progressive enforcement action against... farms with a history of non-compliance... is an effective way of improving environmental outcomes”.

Respondents differed in their recommendations for a phase-in period for any new requirements. Some respondents recommended, for example, a “three-year phase-in period” while others noted that the revisions are ‘long overdue and should be implemented as soon as possible’. For example, several respondents commented that “nutrient management planning should be required upon the effective date of the revised regulation... for farms that have a history of non-compliance”. Another respondent commented that “concerns that impact food safety and human health must be implemented as soon as possible – other areas with less of an impact can be phased in”.

Additional specific comments or suggestions included:

- “Although not addressed in the Intentions Paper, [our association] believes MOE should consider how it should allocate resources to compliance enforcement – we are concerned that enforcement action is overly responsive to public complaints, which can result in vexatious action – the return of specialized MOE enforcement officers would be a welcome improvement”
- “Our [association’s] support of enforcing revised regulations is contingent on our agreement that such regulations are prudent”

- “Agricultural operations should be subjected to the same processes as environment, health, food, labour, etc. and should not have a different approach – this... should be written into the policy direction”
- “[Our association] would support and assist with all efforts to educate and bring awareness to the compliance requirements set out in the regulations – without proper communication of the updated requirements, our [members] will be unable to have a fair chance at adhering to the regulations”
- “I believe the ministry must be given the resources to do effective compliance, such as review of soil/crop/nutrient data provided by farmers and the ability to apply significant fines to encourage compliance”
- “The Environmental Farm Planning program should be promoted and the agriculture community needs to be made aware that protection from environmental compliance penalties is the demonstration of due diligence... the operator may avoid penalties where due diligence can be proven”

D. Additional comments

Response Form Question D.1: Do you have any additional comments or suggestions for the ministry regarding updating the Agricultural Waste Control Regulation?

Many responses included additional comments, written submissions beyond responding to questions in the response form, or supplemental related information and site specific examples relevant to their response. This material has been compiled and forwarded to the ministry for consideration. The following points include a sample of additional comments provided by respondents:

- “Water quality data and analysis from the last several years in the Shuswap have indicated that agricultural run-off and seepage is likely the major contributor to excess nutrients in surface water, namely in Mara and Shuswap Lakes... Regarding water quality and the perceived impacts agriculture has on it, the Shuswap Watershed Council offers the following comments for consideration... **designate the Shuswap watershed as a sensitive receiving environment...** the policy intentions paper references a mechanism to ‘regionally define a sensitive receiving environment’ – the Council urges the ministry to create or enable an official designation with specific management and protection measures for the Shuswap and its large tributary watersheds – this could perhaps be done similarly to the special provisions given the Okanagan Basin and others in the Municipal Wastewater Regulation”
- “Will the Agriculture Waste Control Regulation include a section on Farm Waste Disposal? – [for example,] no permitting of the burning of PVC pipe, wire, plastics of any sort (such as irrigation tubing, ties, plastic posts, chemical containers and fertilizer bags, twine, silage wrap, berry trays and nets) and treated wood posts... [and] no burying of the above waste on agriculture lands or near water sources (rivers, lakes, ponds, wells, aquifers)”
- “Lack of enforcement, weak regulations, non-cooperation between the MOE, MOA, and MOH lead [to] a feedlot with up to 1,500 cattle to establish... in Kelowna – it is surrounded by pre-existing orchards, vegetable farms, and subdivisions... there were no controls on manure removal until three people were hospitalized for hydrogen sulfide poisoning – the situation was untenable and none of the Ministries with monitoring capabilities did anything about it – this cannot happen again”

- “I strongly urge that the Agricultural Waste Control Regulation review panel read the [University of Victoria] Environmental Law Centre report ‘Protecting Human Health: Requiring Setbacks Around Feedlots’ – the report outlines the human health and pathogen transfer risks between residents and ‘ready to eat’ fruits and vegetables and feedlots – [and] shortcomings in the current regulations”
- “Section 31 AWCR could be amended to include odour – it may be opportune to include composting gases (aerobic and anaerobic) into Greenhouse Gas (GHG) provisions – local governments will be looking for GHG reduction and credits, and perhaps rather than burning diesel and hauling manure and Biosolids around the province, there’s gain to be made in localized larger scale composting, gas harvesting and consumption (burning the gas for fuel rather than using smoky wood boilers)”
- “Work towards aligning livestock businesses to the same level of administrative oversight as other businesses under administrative law principles including justice, diligence, right to appeal, etc.”
- “Net Zero Waste Abbotsford was designed to provide a regional solution to the agricultural industry by providing a low cost, sustainable recycling alternative that provides 100% leachate control and odour protection for the community – while developing a high end agricultural resource which can be reused to grow food completing a cradle to cradle recycling process – we are able to recycle clean agricultural waste for as little as \$25/tonne while providing all of the necessary environmental controls needed to ensure no negative impacts to the aquifer or surrounding community – we have excess capacity available and would appreciate support from the industry as our facility was constructed with this solution in mind”
- “[In conclusion, of a detailed submission], the Ministry of Environment has included many of the key agricultural industry sectors in a total of nine meetings with the working group in this review process – in my experience growing up in the agricultural sector in B.C., and working with B.C. agricultural producers, our farmers are stewards of the land and environment at heart – in my experience with Avian Flu response, when our farmers are provided with the relevant local and global information regarding potential issues, they rise to the occasion and provide well thought out and effective solutions... the intentions paper did not adequately address four key issues: 1) many of our agricultural operations produce excess organic waste that needs to be further processed to encourage beneficial use, but cannot be managed on the farm because of space limitations or biosecurity concerns; 2) there is growing international and local concern regarding antimicrobial resistance and the role of our manure and soil management; 3) many of our fruit and vegetable growers are not able to use agricultural waste because more fruit and vegetable buyers are requesting proof of Good Agricultural Practice guidelines surrounding food safety, particularly in relation to potential pathogens; [and] 4) the importance of a good and enforceable regulation... in the context of the Ministry of Environment’s admitted lack of resources and low stated priority for agricultural waste management, as well as inconsistent regulatory enforcement – the working group should be encouraged to provide local regulatory and policy direction in relation to these concerns as these issues potentially reflect poorly on our agricultural industry, and on our farmers – how can we invite British Columbians into a healthy dialogue for a regulatory process that benefits our farmers, our environment and our health, and allows our agricultural industry to be world leaders in modelling economic, social and environmental sustainability?”

- “I do not see any effective mechanism for: 1) stopping fall application of manure on fields that are subject to high water/flooding the following spring; [and] 2) overwinter feeding on fields that are subject to high water/flooding – this is critical to reduce nutrient flow to surface water”
- “It is the policy of B.C. Dairy Association to ensure the efficient and sustainable management of natural resources like land, soil, water and biodiversity in a way that will minimize costs while maximizing profitability; and, address the socioeconomic aspects of sustainable development to promote the economic, human and societal benefits of sustainability in the dairy sector – our Policy on Environment and Sustainable Development, developed with producers across the country through Dairy Farmers of Canada, contains [a number of] principles relevant to the AWCR Review and our response [listed in the detailed submission]”
- “We encourage ongoing consultation with industry and the Ministry of Agriculture during the preparation of a revised regulation”
- “This revised intentions paper appears to recognize that agriculture in British Columbia is as diverse as the topography and climates we operate within – the B.C. Cattlemen’s Association is very pleased overall with the revised document – we feel it reflects the wishes of the industry working group and [the ministry] has made a strong effort to accommodate our previous suggestions and recommendations”
- “While reading the revised AWCR Review and its’ references to other Acts and their respective regulations, it is obvious that many of the issues facing the Ministry of Agriculture are also overlapping issues with the Ministry of Environment and the Ministry of Health – I am encouraging the Ministry of Agriculture to take the lead, in developing an open dialogue with the Ministry of Environment and the Ministry of Health on resolving overlapping issues – communication between Ministries is important”
- “Right now in B.C. there is no approval system to screen new or expanding livestock operations – sometimes these operations are slated for places (some sensitive) that are not at all suitable but are allowed to go ahead with just building permits – I believe if these operations were screened ahead of time there would be far less environmental problems – I believe Alberta and Ontario already have systems for this”
- “The lack of an approval process for new or expanding intensive livestock operations in B.C. creates the potential for large risks to the environment right at the outset, placing a huge unnecessary onus on the MoE to mitigate problems after the fact instead of reducing the risk in the first place”
- “I think that an agricultural waste policy should include provisions for recycling of silage/haylage wrap, plastic twine, and the woven plastic bags called variously mini-totes, totes, mini-bags, etc. – as far as I can tell from my investigations, they are not covered in the recycling policy so far and I know of no recycling centre that will handle them – they are simply going into landfills”

Appendix A: Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AWCR	Agricultural Waste Control Regulation
B.C.	British Columbia
CAFO	Concentrated Animal Feeding Operation
CFIA	Canadian Food Inspection Agency
CFO	Confined Feeding Operations
e.g.	for example
EMA	<i>Environmental Management Act</i>
FIRB	Farm Industry Review Board
FPPA	<i>Farmland Protection Policy Act</i>
FRPA	<i>Forest and Range Practices Act</i>
GAP	Good Agricultural Practices
GHG	Greenhouse Gas
i.e.	that is
IP	Intentions Paper
MFLNRO	B.C. Ministry of Forests, Lands and Natural Resource Operations
MOA	B.C. Ministry of Agriculture
MoE/MOE	B.C. Ministry of Environment
MOH	B.C. Ministry of Health
NMP	Nutrient Management Program/Planning/Plan
OMRR	Organic Matter Recycling Regulation
PVC	Polyvinyl chloride (plastic pipe)
QP	Qualified Professional
US	United States