

# **Agricultural Waste Control Regulation**

## **Intentions Paper Summary of Public Input**

### **Final Report**

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Submitted to: Environmental Standards Branch  
Ministry of Environment and Climate Change Strategy

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## Introduction

In November 2017, the BC Ministry of Environment and Climate Change Strategy (ENV) released an Intentions Paper (IP) outlining proposed changes to the Agricultural Waste Control Regulation (AWCR) that incorporates recommendations from the POLIS Hullcar Review Recommendations Report (POLIS Report), together with feedback from the agriculture industry working group (AgWG) and other stakeholders through two previous policy intentions papers.

This report serves two purposes: 1) provides a summary of the input received, and 2) provides a response from the ENV to these comments, where applicable.

### Background on the regulation

Agricultural activities and operations are regulated in B.C. under the Agricultural Waste Control Regulation (1992) (AWCR). The AWCR regulates practices for using, storing and managing agricultural wastes and by-products, such as manure and composted materials.

The POLIS report was commissioned by ENV in response to elevated nitrate concentrations in the unconfined Hullcar Aquifer and a drinking water source.

The goals for updating the AWCR and associated guidance are to:

- Enhance and improve water and air quality by requiring that good, environmentally protective agricultural practices are followed.
- Ensure watercourses and groundwater are protected through proper storage and use of manure, other nutrient sources and agricultural materials.
- Provide certainty – through clear, unambiguous requirements – focused on desired environmental outcomes.
- Update guidance to facilitate appropriate and beneficial use of manure and other agricultural by-products.

### Background to the consultation process

Previous to the IP released in November 2017, consultation occurred on two previous IP's – January 2012 and July 2015. The first IP received 119 responses, and the second IP received close to 50 responses. Previous IP's and each respective summary of comments are outlined in Table 1, below. In addition, the ministry initiated consultation with the AgWG in April 2012.

Subsequent to the previous consultations, the ministry ordered a review of the Hullcar Aquifer water quality concerns. The review was completed by the POLIS Project on Ecological Governance with the goal to gather information to inform and make recommendations to improve future approaches to management and decision-making related to source water protection and agricultural nutrients. As a result of the review, a number of recommendations emerged that relate to the AWCR. Consequently, the ministry issued the third IP (IP3) to consult on the proposed changes to the AWCR.

The IP3, released November 30, 2017, outlines the proposed changes to the AWCR, and integrates updates from previous consultations, focusing on the new proposed changes resulting from the POLIS Report recommendations.

Government provided a 45-day public consultation period for the intentions paper. The consultation timeline is summarized in Table 1.

**Table 1. Consultation timeline**

Date	Event
<b>2012, 2015</b>	Previous AWCR Intentions Papers and Summary of Comments released: <ul style="list-style-type: none"> <li>• <a href="#">1st Policy Intentions Paper (2012)</a></li> <li>• <a href="#">Summary of Comments (2012 IP)</a></li> <li>• <a href="#">2nd Policy Intentions Paper (2015)</a></li> <li>• <a href="#">Summary of Comments (2015 IP)</a></li> </ul>
<b>August 2017</b>	In response to concerns in the Hullcar aquifer, the Province announces a review of the Hullcar aquifer situation to obtain recommendations for improving water quality protection. <a href="#">POLIS Recommendations Report</a>
<b>November, 2017</b>	Release of updated AWCR Intentions Paper: <ul style="list-style-type: none"> <li>• <a href="https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/agriculture/awcr_review_ip3.pdf">https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/agriculture/awcr_review_ip3.pdf</a></li> </ul>
<b>November 30, 2017 – January 15, 2018</b>	45-day comment period to obtain feedback on the proposed changes to the AWCR via the online response form
<b>May 2018</b>	Final Summary Report on input received, including responses from ENV

### Format of this document

This report summarizes the results of the 45-day consultation period and includes a high-level summary of all input (section B), a summary of the responses to the summary questions (section C), and a summary of the responses to the specific questions by topic area in the Intentions Paper Response Form (section D). Comments from responses received in letter or e-mail form that were not organized using the Intentions Paper Response Form format were reviewed and incorporated into the applicable topic areas.

## Summary of input received and Ministry responses

### Summary of respondents and formats

During the consultation period, ENV received a total of 62 submissions, of which half completed the Intentions Paper Response Form (PDF), and the remaining provided letters or e-mails. Respondents included:

- 17 local, provincial and federal governments and associated agencies
- 10 farmers
- 8 industry associations
- 8 community groups
- 6 private sector individuals working in agriculture industry
- 5 unaffiliated individuals
- 5 First Nation bands
- 2 university associated research groups
- 1 US government department

### Summary of all submissions

The extent of support for the proposed changes to the AWCR outlined in the Intentions Paper is summarized by topic area in Table 2.

**Table 2. Extent of respondent support to questions posed in the Response Form**

Response Form Question	Number of responses	General level of support	Key issues raised	Page
<b>Overall summary questions</b>	40	Mod	Agree on need for update; some feel stronger science needed; others feel IP regressed and is not strong enough	5
<b>Approach to compliance</b> General	18	Mod	Agree on framework, policy, procedures; cumulative impacts view missing	7
<b>2. Updated definitions</b> 2.1 Definitions	26	Mod	Clarify definitions, scope and intent	8
<b>3. Risk-based approach</b> 3.1 General	28	Mod	Agree to risk-based approach; need to update definitions; base on science	9
3.2 High risk definitions and level of protection more stringent	22	Low	Further clarification of terms is needed	10
<b>4. Emissions</b> 4.1 General prohibition	6	Low	Further clarification required	11
4.2 Odour	16	Low	Clearly define	11
<b>5. Registration – boilers and heaters</b> 5.1 General	8	Mod	Air quality; prohibited fuels; open burning;	12
5.2 Testing and Record Keeping	8	Mod	Clarify opacity requirements, testing procedures, enforcement	13
<b>6. Minimum setbacks</b> 6.1 General	27	Mod	Site characteristics; property boundary conflicting regulations	13
6.2 Setbacks for manure, other agricultural by-products and other nutrient sources	14	Mod	Consider other conditions; human health	15

Response Form Question	Number of responses	General level of support	Key issues raised	Page
6.3 Setbacks for disposal of mortalities and solid and semi-solid wastes...	6	Low	Protect water quality; human health	16
<b>7. Storage</b>				
7.1. Proposed storage requirements	27	Varied	Clarify capacity; concern over leakage; impermeable layer requirements	16
7.2 Storage in high risk areas	24	Mod	Further clarification; expand on requirement and conditions	18
7.3 High risk conditions	10	Mod	Enforcement; assessment of risk	19
7.4 POLIS Recommendation	20	Mod	Leaking; leachate management; inspection	19
<b>8. Agricultural composting</b>				
8.1 General	10	Low	Clarify odours; odour control guidance; property boundary setback	20
8.2 High risk areas and conditions	18	Mod	Clarify definitions; conditions for cover	21
<b>9. Nutrient management and land applications</b>				
9.1 General nutrient management	27	Mod-High	General support for NMPs; clarify triggers, process and enforcement	22
9.2 Environmental risk indicators	16	Low	Concerns with P test; concerns with combining N&P in table; concerns with enforceability	23
a) Risk matrix				
b) Additional criteria	27	Mod-High	General support for animal density or units trigger; more enforceable	24
c) Enable a Director to require a nutrient management plan	30	Varied	Concern and support for director requirement and safety factor; lack of cumulative effects	25
d) Proposed tracking and verification process	13	High	Seeking more details on process; opposing views on public release of NMPs	26
9.3 Land Application	22	Mod-High	Flexibility for shoulder seasons; opposing views on snow or frozen application	27
a) Comments				
b) Application of water for field irrigation	26	Varies	Split between very supportive / concern it is redundant and in NMP	27
c) Temporary moratorium	11	Varies	Split support / concerns for temporary moratorium	28
<b>10. Storage and use of wood residue</b>				
10.1 Terminology	12	High	Clarify terms	29
10.2 General	8	High	Type of wood; application	29
10.3 Minimum setbacks	10	High	Clarify terms	30
<b>11. Livestock and poultry operations</b>				
11.1 Confined livestock and poultry areas	7	Mod-High	Flood plain areas; size of operations	30
11.2 Feedlot specific	7	Mod	Director role; intact protective layer	31
11.3 Feedlot specific (high risk areas)	8	Mod	Definition of high risk area; water table level	31
11.4 Seasonal feeding areas, grazing areas and temporary holding areas	6	Low	Direct access to watercourses; flood-prone areas	32
<b>12. Managing mortalities and small slaughter operations' processing wastes</b>				
12.1 General	7	Mod	Need expert input re: BSE; align with other agency procedures	33
12.2 Burial of mortalities	8	Mod	Criteria for burial locations; record requirements	34
12.3 Incineration of mortalities	4	Mod	Best practice guidance needed	34
12.4 Composting of mortalities	5	High	Allow bone fragments	34
<b>13. Recordkeeping</b>				
13.1 General	16	Mod	Recordkeeping requirements; support for operators	25
<b>14. Corrective actions</b>				
14.1 General	18	Low	Define clear process; emphasize options for voluntary compliance first	35

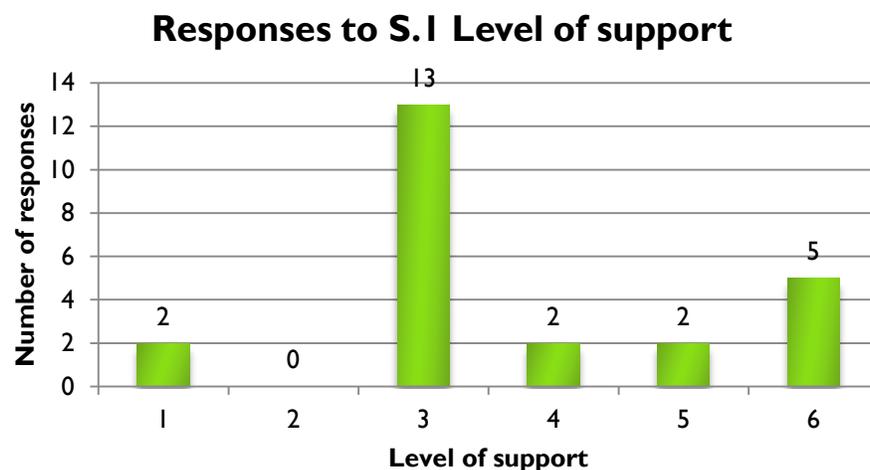
## Response form input: Overall summary questions

This section outlines responses to the summary questions within the Intentions Paper Response Form.

### Level of support

**S.1 Level of support:** Please indicate your level of support for the proposed amendments to AWCR as described in the 3rd Intentions Paper (scale: 1=Not at all supportive to 6=Extremely supportive).

A total of 24 out of 60 respondents provided a numerical representation of their level of support. The following chart shows the results.



### S.2 Reasons: What are the reasons for your choice?

The majority of responses support changes to the AWCR, although all may not agree with the proposed changes outlined in the 3<sup>rd</sup> Intentions Paper. Respondents acknowledged the need for better management and mitigation of environmental and human health risks and acknowledge the responsibility of the government to support sustainable farming practices, based on scientific principles. However, not all respondents agree on the approach.

The few that were not supportive felt that this intentions paper was a regression from previous intentions papers and did not represent a modernization of the AWCR. A few were not supportive of regulations or requirements that are not based on clear scientific evidence. One felt that the IP did not offer “...sufficient protection to water sources, aquifers, air quality (and health in general)...” and another felt the proposals do not go far enough to create a regime that prevents pollution rather than reacting to it.

### S.3 Summary comments: Do you have any further comments on the 3rd Intentions Paper?

While many generally support changes to the AWCR, there are still many concerns, and the support is contingent on clarification, specifically:

- Harmonization of multiple acts and regulations,
- Increasing complexity and regulatory burden on small operators,
- One-size fits all approach, *“Making recommendation and regulation to fit the needs of the entire province, based on One geographical location, is Worrisome. We are confident that the MOE will consider all comments received. However, it is our hope that scientific evidence will be the determining factor in the completion of the AWCR.”*
- The increased need for enforcement with currently limited resources,
- Clarification of definitions and regulations,
- Lack of clear and simple guidance to ensure implementation success,
- Need for support and training for on-site personnel,
- The use of qualitative terms, instead of quantitative (e.g. “effective” controls),
- Limited resources to monitor groundwater and freshwater quality, and
- Scope of power of a director, and the process for director decisions.

A number of respondents noted their support for regulatory flexibility and the use of non-regulatory tools to meet the goals of the AWCR.

*“In particular, we’d like to endorse the key policy concept to “encourage use of non-regulatory tools to facilitate good agricultural practices,” however we also understand that enforcement of regulations may be necessary if a producer is negligent or blatantly ignores the AWCR, and the guidelines it sets.”*

Two institutions and a consultant in the industry noted concern that the regulation is too focused on site-specific plans, without linking to regional tools that can address concerns related to cumulative impacts and limit nutrients on a watershed scale. One respondent suggested that a director be able to recommend the development of Area Based Management Plans under the *Environmental Management Act* or Water Sustainability Plans under the *Water Sustainability Act*, as appropriate. Another respondent suggested well-defined triggers for these plans based on nutrient loading and animal density need to be developed.

One submission was clearly not supportive due to concern on risk to human health and food safety. Another was not supportive due to the feeling that the proposed regulation was *“too burdensome for most farms.”*

Two submissions felt that the consultation time period was too short, especially since it occurred over the Christmas Break, and one clearly stated the expectation their organization continue to be consulted as the legislation develops and that changes need to occur expediently.

## Approach to compliance

**General:** Do you have any comments on the approach to compliance outlined in the Intentions Paper?  
[18 responses]

Generally responses were supportive of establishing a clear compliance framework and compliance policy and procedures, with significant emphasis on the need to be clear and consistent in enforcement action, provide a fair appeal process to farmers, and ensure audit recommendations are clearly communicated to farmers. *"The entire process would lose all integrity if these were recognized as a guideline only."* Multiple submissions noted the importance of conducting regular inspections (many suggested annual) – either random or scheduled – for all operations with NMPs. One community respondent noted: *"we are optimistic that MOE's enforcement and penalty regime will work to increase compliance."*

Many respondents noted the desire to see sufficient resources directed toward this approach. In particular, numerous respondents identified a need for education, tools and funding to support farmers with adopting new requirements – including small and hobby farmers that typically have less resources at hand. One organization also noted a phase-in time is necessary to build capacity among Qualified Professionals.

Three respondents were less supportive as follows:

- Disappointment that the regulation is insufficient, particularly in relation to setbacks from intensive feedlot operations (1.5m) and outdoor composting areas (4.5m), and recommendation to obtain more input from health professionals and food safety experts.
- Concern that the enforcement under the new regulation will still largely be dependent on complaints from the public, rather than requiring all operators to register with the Ministry and provide a minimum amount of baseline data so the Ministry can track scope, scale and locations of agricultural activities. The Ministry should conduct annual inspections at operations in high risk areas. Where compliance issues arise in First Nations territories, notice should be provided to applicable bands.
- Preference for the old system of encouraging BMPs through the EFP.

### Ministry Response to Approach to Compliance:

The ministry's Compliance Strategy and Decision Matrix ensures a fair and balanced approach, and is based on the level of seriousness of actual or potential environmental harm and likelihood of compliance. Regular checks through planned audits, as well as responding to concerns or complaints are both used and will continue to be used.

Requiring registration for all agricultural operations is not feasible; however, the ministry proposes to develop a tracking system for collecting information on a regional basis to improve the understanding of the activities occurring on the land base. In addition, the ministry is proposing that an agricultural operator that is required to have a nutrient management plan prepared by a qualified professional must notify a director.

Guidance, educational documents, such as environmentally protective management practices and tools for agricultural operators, will be developed and updated.

## Response form input: Proposed regulatory changes

### 1. General considerations

No input requested.

### 2. Updated definitions

#### 2.1 Do you have any comments regarding terms that need further clarification, or definitions proposed during the previous consultation? [25 responses]

Almost half of all respondents answered this question. There is support to clarify the scope, intent, and enforceability of regulatory provisions, as indicated by the following group response:

*“Clearly defined terms establish a framework for what is and is not included within the AWCR. However, definitions that are narrow and static can risk outdated the AWCR. Likewise, definitions that do not provide supporting explanation can be too vague to provide utility. In particular, defining what are “high risk areas” requires explicit attention and detail.”*

In addition to the desire to clarify "high risk areas" (discussed further in section 3), respondents identified several other terms that are not currently defined that would be useful to set definitions for. Respondents also suggested changes or requested further clarification for some terms that are currently defined. Comments included:

- Clarify the definition of director. Some respondents felt that directors should possess qualifications greater than or equal to a Qualified Professional.
- Subjective terms such as pollution or water pollution make it difficult to enforce from a compliance standpoint.
- *“The AWCR should adopt the federal CFIA definition of compost, essentially that the material is pathogen free.”*
- Clarify if the term water source or watercourse will be tied to definitions under the *Drinking Water Protection Act*.
- Clarify "vulnerable aquifer" and the criteria, triggers and process for adding an aquifer to the list of vulnerable aquifers.
- Specifically define "nutrient," "nutrient management plan," "agricultural waste" and "agricultural by-product" as these are important to proper compliance and enforcement.

#### Ministry Response to Question 2:

The ministry is clarifying and refining definitions as appropriate for the purposes of the proposed new minister’s regulation, referred to as a “code of practice” or “the code”. This includes definitions of high risk areas and conditions.

### 3. Risk-based approach

#### 3.1 General: Do you have any general comments regarding the risk-based approach? (IP3 page 3) [28 responses]

The responses were generally supportive of a risk-based approach, though many comments highlighted the need for science that links the source to the contamination, or the need to monitor and identify problems earlier. *"Tracking and verification should be ongoing to reveal trends and enable the possibility to intervene prior to there being a problem."* Numerous responses requested the Ministry provide a map of high-risk areas as soon as possible to enable farmers to plan appropriately.

Several responses noted the need to expand the four factors – for example:

- "Location" should include proximity to drinking water sources.
- "Climate" should consider snowmelt in addition to rain fall.
- "Weather" should include consideration for climate change – e.g., higher frequency of storms while ground is frozen should limit activities during shoulder seasons.
- "Farming operation or activity" should include animal units per hectare; include adjacent lands.

Several responses requested that risk evaluation consider additional factors, farming practices currently in place (e.g. soil sampling, site selection and soil type, ongoing monitoring), and/or historical practices. For example: *"We generally support a risk-based approach and desired outcomes, but the four risk factors identified in the Intentions Paper should be referenced as "example risk factors". We submit that there are several other factors (i.e. soil type, current nutrient load, etc.) which may need to be taken into consideration on a case-by-case basis, especially when investigating complaints and/or issues...We support a risk-based approach that looks at a farm's individual level of risk as well as the overall regional risk, rather than blanketing an entire region as "high-risk."*

Two responses were not supportive of the risk-based approach – in one case due to the overly vague definition and desire to strengthen the criteria, and, in the other case, concern it would lead to overly onerous requirements without sufficient evidence.

More specific comments included:

- Two responses noted the need to identify tools used to consider / review the risk factors. *"IP3, pg.3 places onus is [sic] on the operator to identify and understand the environmental concerns. Guidance from the Ministry to assist operators with this identification and understanding as well as the appropriate protective measures to take will be vital."*
- Two responses identified the need for assessing cumulative impacts, and one requested clarity on how cumulative impacts will be incorporated into the risk assessment.
- Providing mitigation and prevention support to modify management practices in high-risk areas can achieve positive results reducing enforcement action needed.
- Clarify enforcement for high-risk conditions.
- Define "land over a vulnerable aquifer" to include only aquifers with IA, IIA, and IB classifications.
- Two responses noted that flush barns should not be allowed, one specifically noting concern on sandy soil above aquifers or near highly-populated areas.

### Ministry Response to Question 3.1

The ministry is proposing enabling provisions for a director, on a case by case basis, to request required records, e.g., NMPs; to require records to start to be kept, or to do testing and monitoring, e.g., surface

water quality or groundwater water quality tests; to assess potential risk for negative impacts, and for cumulative impacts. The ability of the director to request records, including NMPs, will improve the ministry's ability to monitor and identify developing problems and understand the trends and cumulative impacts in order to take early preventative action.

The proposed requirement for notification that an agricultural operator has a Qualified Professional-prepared NMP (which will include select summary data) will provide better knowledge of the agricultural activities on the land-base.

The ministry is not proposing to prescriptively require specific technologies or methods, but rather, to use a results-based approach to achieve desirable environmental outcomes and foster innovation.

**3.2 Level of protection more stringent:** Do you have any comments regarding the definitions for high-risk areas and high risk conditions, or the proposed requirements for a level of protection more stringent than the basic requirements? (IP3 page 3 - 4) [20 responses]

Based on the responses received, there was a general request to further clarify the definitions for "high-risk areas" and "high-risk conditions." Specific suggestions were offered to update the definitions, including considering proximity to areas where fruits and vegetables are grown, low-lying areas that are subject to flooding during spring melt, aquifer recharge areas, and watersheds that drain to shellfish production areas. One respondent noted the Ministry should consult with First Nations to identify areas where agricultural activity may impact Aboriginal Rights and Title. It was noted that regulation and enforcement of high risk conditions may be challenging as some discharge during these conditions may be due to poor placement of nutrients before the condition exists. One respondent noted that the definition of "high-risk condition" differs from Procedure 8 [under EMA - Contaminated Sites Regulation].

For "a level of protection more stringent than the basic requirements," comments included:

- *"This may not be sufficient for conditions that do not fall into the category of constant high risk or intermittent high risk...The basic requirement should be stringent enough to mitigate the impact that unforeseen events may have on the environment and health of the population."*
- *"Where a reoccurring, intermittent high risk has been identified, this area should be added to the schedule of high risk areas."*
- Farms that can demonstrate individual low risk through soil testing, adequate land base and record-keeping do not require more stringent rules, or there should be room to allow these farms to demonstrate lower risk prior to requiring an impermeable base.

### Ministry Response to Question 3.2

Proposed thresholds for when a nutrient management plan will be required are not a compliance point. However, they are indicators for when more protective measures and more rigorous management of nutrients will be required.

The ministry is proposing enabling provisions for a director to:

- a) impose a more protective requirement;
- b) restrict or prohibit manure applications for a certain period due to high risk weather conditions;

- c) designate a high risk area based on evidence of negative impact or potential negative impact; or
- d) review requests to assess an area for a high risk designation, such as if a Drinking Water Protection Plan, or a Water Quality Objective, is established under another Act or regulation.

The provision will include decision-making processes and clear decision criteria that a director must use in making this determination.

The ministry is proposing that a director have the ability to add new high-risk areas to a schedule in the code, by designating high risk areas based on evidence of negative impact or potential negative impact; and that a director may set further or stricter requirements to better protect the environment in the area.

## 4. Emissions

**4.1 General Prohibition:** Do you have any comments regarding the general prohibition of emissions? [6 responses]

The majority of responses felt that this section needed further clarification. Responses included concern that:

- *“A 1.5 m property boundary set back is insufficient for emissions from forced air ventilation systems. Ammonia from poultry barns has been shown to be deposited up to 2.5 m away under ideal conditions.”*
- Farmer should be consulted with prior to taking disciplinary or corrective action.
- Emissions crossing property boundaries *“relates to emissions as more of a nuisance rather than a pollution problem”* that *“should be dealt with through the Farm Industry Review Board rather than in AWCR.”*

One local government submission indicated support of the General Prohibition of emissions as follows: *“We believe this addresses an issue with situations where neighbours have been affected by dust/ PM from poultry barns and other confinement livestock operations.”*

### Ministry Response to Question 4.1

Emissions, such as dust and feathers from poultry barns, carry pathogens that can cause health problems, are a cause of pollution, and are appropriate to be dealt with under the proposed new code. The proposed setbacks are meant as a buffer and are based on research of impacts to the receiving environment. The property boundary setback for buildings or structures is proposed to be 4.5 meters, which is consistent with municipal guidelines for setbacks.

**4.2 Odour:** Do you have any comments regarding the regulation of odour? (IP3 page 4) [16 responses]

The majority of responses supported clarification on the definition of odour. Many felt that the definition provided is too vague because detection of odour as a nuisance can be a personal (subjective) opinion rather than a definitive level. There were also numerous questions with respect to who and how offending odours would be determined. Suggestions included:

- There is a perceived conflict with the definition of odour in the AWCR, *Farm Practices Protection Act* and *Environmental Management Act*.

- Guidelines should clearly identify odour compounds and concentration limits at which they are prohibited under the revised regulation. The regulation should also define the testing procedures to assure compliance with the regulation.
- “A clear, more inclusive and realistic definition of odour and air contaminant should be defined (and EMA amended).”
- Odour is addressed differently in this section (IP3 page 4), which states odours will not be restricted, while the storage section (IP3 page 8) states that storage should be managed to minimize unacceptable odours that may result in air contamination.
- Ensure definitions distinguish between odours expected in an agricultural community and unacceptable emissions. “The smell of manure in an agricultural community is expected. Gases (H<sub>2</sub>S) coming off a lagoon are not acceptable or necessary.”
- The term “material discomfort” needs careful definition to prevent nuisance complaints from neighbours for odours that are a result of normal farming practices.

#### Ministry Response to Question 4.2

The *Farm Practices Protection (Right to Farm) Act* addresses nuisance complaints including odours. When certain emitted odorous substances or compounds reach levels at which they have been measured to cause harm or injury, they are considered air contaminants under the *Environmental Management Act*. The proposed revisions will provide clarification on how to distinguish between odours that are acceptable and those that are not, as unacceptable odours can indicate improper management of an activity and lead to air contamination.

The ministry continues to work on guidance materials to deal with odours and other emissions.

## 5. Registration – boilers and heaters

**5.1 General:** Do you have any comments regarding the registration of boilers and heaters (including the exemption for small units, the fuel restrictions and emission standards)? [7 responses]

Most responses requested clarification or other considerations on various points, including:

- Consider amending the exemption of small boilers and heaters to avoid the use of many small units to circumvent the regulation.
- Consider adding an example list of prohibited or restricted fuel materials under Fuel Restrictions.
- Consider restricting boiler operations during air quality advisories.
- Clarify which US standard is under consideration (footnote in IP does not state which US EPA standard) and include in the AWCR the actual emission rates from the standard rather than just a reference.
- Clarify the intent behind exempting the emissions during boiler shutdown, as this is a new addition.

### Ministry Response to Question 5.1

The ministry is proposing standards and requirements appropriate to the size of the boiler or heater.

The fuels listed under fuel restrictions are the only fuels allowed to be used in agricultural boilers and heaters.

The ministry is proposing enabling provisions for a director, based on the issuance of an air quality advisory, to issue a moratorium on an activity, e.g., on manure applications that contribute to a decrease in air quality.

### 5.2 Testing and Record Keeping: Do you have any comments regarding the opacity testing, particulate matter testing or record keeping requirements? [8 responses]

Most of the comments received on this section related to opacity requirements, testing procedures and enforcement, including the following:

- Opacity testing is prone to intentional and unintentional errors. Consider adding a testing protocol as a quality assurance/quality control measure.
- Clarify the opacity testing methodology agricultural operators are expected to follow. *“Even though visual methods to determine smoke opacity have been around for a while, this type of testing requires an experienced certified operator. If the requirement on testing the boiler opacity limits is added to the regulation, the guidelines should clearly identify the methodology and how necessary testing proficiency will be obtained at each individual operation.”*
- The requirement to fix the emitting equipment is 30 days while an emissions test is required within 60 days. *“Unless the emissions from the equipment are tested immediately after the repair or modification, how will it be proved that the equipment was fixed?”*
- Clarify how the Ministry will ensure that corrective actions are carried out.
- Clarify that operators will require training to characterize opacity and how opacity monitoring will be enforced.

### Ministry Response to Question 5.2

Education, training and guidance materials on measuring opacity are planned for the implementation phase to complement outreach, once the proposed new code comes into force.

## 6. Minimum setback standards

### 6.1 General: Do you have any general comments regarding minimum setbacks as outlined in the Intentions Paper? [27 responses]

In general, there is support for minimum setback distances; however, many respondents feel that the setbacks outlined in Table 2. and 3. need clarification (including the addition of vertical distances), may need to be greater in certain circumstances, and in many cases, may be insufficient to protect the environment and human health, especially in the case of setback from watercourses. One respondent

noted a minimum of 4.5 meter setback is more appropriate to allow for runoff in heavy rains and meandering streams.

Many felt that the characteristics of the site should be included in determining setback distances. These include soil type, slope, run-off characteristics, and potential future use of water as domestic water sources. It was generally felt that the setback distance should be based on scientific evidence. Further clarification is required on the process where “a greater setback distance may be required by a director” would be triggered in high risk areas or conditions. Specifically:

*“It is not clear whether the set-back requirements took into consideration the increasing pressure towards close spatial adjacency between agriculture, residential, and other land uses as the BC population grows. As well, it is unclear whether the set-backs are based on Current evidence or on un-validated historical “best” practices. Microbial source tracking techniques for pathogen movement have shown viral and protozoan survival rates that are measured in years.”*

In addition, several respondents noted concerns with the property boundary setbacks as they felt they were either insufficient, had the potential to conflict with local government bylaws or required further detail. A number of respondents felt that adjacent properties with common ownership should be exempt from property boundary setbacks. One respondent noted that some setback requirements may cause difficulties for small agricultural operations. Another noted that the setback distance appeared to decrease since the 2012 Intentions Paper:

*“Manure undergoing composting is still manure and setbacks should be identical to temporary field storage (30m). The January 2012 Intentions Paper (p. 6) required agricultural wastes and byproducts have “minimum setback distances to at least 30 metres from any watercourse, any source of potable water or irrigation well, and from property lines or boundaries. The 3rd Intentions Paper has lessened the distance from a composting site to property lines to 4.5m. Why was this distance lessened?”*

A number of respondents requested clarification of how ‘high water mark’ will be determined. And further clarification is needed on how existing structures and facilities will be impacted.

Specific comments included:

- *“The first sentence should be changed to include ‘support desired environmental and human health outcomes’ to be consistent with the risk-based approach noted in section 3.”*
- Clarify that the 30-metre setback requirement from domestic water sources is linear distance.
- Consider that the revised AWCR is an opportunity to introduce vegetative buffers as a method to protect water sources.
- Ensure that minimum setback for land application from top of watercourse bank or high water mark is consistent with other regulations.
- Align AWCR setbacks with provincial Riparian Areas Regulation to protect fish bearing or potentially fish bearing streams.

#### Ministry Response to Question 6.1

The setbacks proposed are: minimum requirements, science-based, and align with other Acts and regulations (e.g., the *Public Health Act*), as appropriate. For clarification, a setback is the distance along the horizontal plane above the surface of the ground, not a vertical distance below the surface of the

ground. It is the minimum requirement between an agricultural operation or activity and a watercourse, groundwater access (e.g., well), or property boundary.

The ministry is proposing enabling provisions for the director to require further setbacks based on circumstances such as soil type, slope, or run-off characteristics that may need more protective measures.

Proposed minimum below ground vertical distances under certain activities, such as a mortality burial pit, are set out in the sections specific to the type of activity and operation they pertain to.

Revised and new definitions are expected to provide increased clarity. For example, 'high water mark' will have the same meaning as in the Riparian Areas Regulation.

The proposed minimum setbacks from property boundaries will apply to the outer perimeter of adjoining parcels, and not to the property boundary between adjoining parcels that are owned, rented or leased by the same agricultural operation.

**6.2 Setbacks for manure, other agricultural by-products and other nutrient sources:** Do you have any comments on the existing or newly proposed setbacks in Table 2 of the Intentions Paper? [14 responses]

Most respondents felt that while it is likely that 15-30 m setback will be sufficient under most conditions, it may not be sufficient in all cases depending on soil type or other certain conditions (e.g., saturated ground, rain, frozen ground, flooding, slope and season) and consequently, water quality is unlikely to be protected from contamination by setbacks outlined in Table 2, in all conditions. One respondent noted that Alberta's Guidelines for Minimum Distance Separation for Siting Confined Feeding Operations include consideration of receptors whereas the Table 2 setbacks appear arbitrary. Specifically:

*"The setbacks, as presented, do little to offer protection to groundwater aquifers (depending on vertical separation to aquifer, soil type, etc.)."*

*"Minimum set back of land application to top of watercourse of 1.5 meters will likely not be sufficient, depending on site, slope, season, etc."*

*"Section 23 of the Drinking Water Protection Act (DWPA) (prohibition against contaminating drinking water, including a surface and groundwater source, a well recharge zone, area adjacent to a drinking water source, or tampering with a system) should be reflected in the setbacks and setback principals."*

Some felt that the size of the agricultural operation should also be considered in determining the setback distances. In addition, further clarification is required on the conditions that, at the discretion of the director, would require greater setback distances.

Human health was also a main theme. There was concern that the setbacks are insufficient for the protection of human health with regards to vegetable growth.

*"Canada does not allow the importation of vegetables categorized as "leafy greens" if they are grown within 400 feet (120m) of a feedlot, yet BC allows feedlots to move into and operate within areas surrounded by vegetable farms and orchards. Table 2 should be expanded to include 120m setbacks from all food-growing areas where produce (fruit or vegetable) is harvested and sold to the public."*

Additionally, one respondent asked to clarify the term “setback” with respect to riparian buffer and leave strip. *“This is a concern as we have experienced surface and groundwater impacts due to runoff and flooding, especially when the buffers or leave strips are not vegetated.”*

There was a response that disagreed with the setbacks as outlined:

*“Valley bottom land is some of the best farmland in BC, and much of it is effected [sic] by occasional flooding. We disagree that a setback for land application should be set by the high water mark.... the top of embankment is a much better point to use as a point to setback from. Of course we realize no one should apply manure before an expected flood event!”*

### Ministry Response to Question 6.2

The ministry does not regulate land-use planning and zoning. The proposed revisions consider the protective requirements for discharges to the environment. The proposed setbacks are intended as a minimum distance for a buffer, to be used as one of a number of required protective measures, along with, for example, not allowing leachate or contaminated runoff to go into a watercourse.

The ministry is proposing enabling provisions for a director to require further setbacks based on conditions, such as flooding, slope of the field, soil type, and season.

**6.3 Setbacks for disposal of mortalities and solid and semi-solid wastes, confined livestock areas, seasonal feeding areas and grazing areas:** Do you have any comments on the existing or newly proposed setbacks in Table 3 of the Intentions Paper? [6 responses]

Most respondents had significant concerns regarding the setbacks for Table 3 with most stating that they did not think these were sufficient setbacks to protect human health. It was noted that setbacks should increase along with AU’s, and that collection of contaminated runoff could play a role in protecting water quality. One respondent noted:

- *Unless the mort material can be proven to be free of virus/bacteria (or similar) that could be mobile and persistent along a flow path to a water source, then this material should be prohibited from deposition in highly-moderately vulnerable aquifers (or recharge zones in all type of aquifer).”*

### Ministry Response to Question 6.3

Burial is an acceptable method of disposal – and the proposed minimum setback requirements for burial sites are conservative and protective. The minimum protective requirements increase based on an increase in quantity (up to a maximum quantity allowed), restricted to ‘normal’ animal mortalities, not a mass animal mortality event, e.g., mortalities associated with an avian influenza outbreak.

## 7. Storage

**7.1 Proposed storage requirements:** Do you have any comments on the proposed storage requirements (including the exception for temporary off-site storage, the sufficient storage capacity requirement, the

allowable storage methods, the requirements for transport of liquids and the protective measures for temporary field storage)? [27 responses]

Responses covered a broad variety of storage topics.

Many comments recommended requiring **impermeable liners** for all existing and new storage facilities. *“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.”* One organization noted all farms in high risk areas should only have one year to conduct an assessment on earthen storage for liquid manures (not two years), while a professional noted it would be appropriate provide a timeline of two years to transition existing facilities on vulnerable aquifers to impermeable liners.

One group respondent argued that all agricultural by-products must be able to be **moved and stored at various sites under the same ownership**. *“It’s common for farms to own various plots of land, and some may have additional manure storage (for example) at another site. It is not logical to allow storage only at the location where the by-products are produced or used.”*

While not opposed to the exception for **temporary off-site storage of liquid manure**, it was recommended that responsibility of off-site manure should to be shared by the property owner and the generator of the agricultural by-product.

Clarify **‘sufficient storage capacity’**. *“Requiring excessive storage capacity generates substantial additional costs for the livestock operation, while requiring too little generates substantial additional risk to public resources.”* One industry respondent noted concern about the volume of storage capacity required and the burden of compliance. One respondent recommended that storage requirements be based on volume, product and duration of storage.

Several responses noted that the regulation needs a clear method to determine if liquid waste being transported and stored is **leaking into watercourses and groundwater**. Some support a ban on **manure pipelines** altogether, while others suggested adding specific regulations for the transport of liquid manure, including testing of manure that is being transported, and others requested clarification on how manure pipelines will be monitored and whether the Ministry has response plans for pipelines that fail. Responses addressing the requirement for a QP to assess all liquid manure storage varied – one noted that two years between inspections is too long, and another noted that it should be extended to five to ten years.

### Ministry Response to Question 7.1

The ministry is proposing that the agricultural operator will be required to monitor regularly to ensure there are no leaks or overflows. Proposed timelines for an initial two-year assessment period and the re-assessment period will be based on available resources. Proposed requirements will include the ability for a director to require immediate corrective action to address leaks and overflows.

To confirm, the ministry is proposing to continue allowing movement and storage of agricultural by-products to various different sites owned by the same agricultural operation.

The proposed requirement for ‘sufficient’ storage capacity will include: the need to consider the total quantity required to be stored; the type of storage that is appropriate for the material being stored (e.g., solid or liquid); the length of storage time needed (e.g., when land applications are not allowed); and the

protective measures. An agricultural operation will need to assess the various storage options to balance these considerations with the costs.

The onus will be on the agricultural operation to ensure that manure transport vehicles and piping do not leak, and to have a response plan to regularly monitor these, and to stop leaks and make repairs.

## **7.2 Storage in high risk areas:** Do you have any comments on the proposed requirements for high risk areas? [22 responses]

The majority of the respondents requested clear definitions and consideration of including additional measures, especially to protect human health. There was concern that this section implies that protective measures will not apply to existing storage over vulnerable aquifers, only to new or modified structures. It was recommended the regulation consider a requirement to demonstrate that existing storage is not resulting in leaching to groundwater.

Some respondents supported amending and/or expanding on the intent of the proposed conditions, including considering amending the requirements for field storage from October 1 to April 1 in high risk but low precipitation areas, and for regions experiencing early or late rainy season, as directed by the director, while recognizing that this depends on the characteristics of the material, site and duration of storage. Other comments included:

- Consider adding requirements for leachate collection, storage and treatment for storage facilities with impermeable bases.
- Consider using historical 10 year high water table (where data is available) to ensure that the minimum depth to an aquifer is met over a period of time.
- Clarify the rationale for ‘a minimum of 2 meters vertical distance below the whole structure to the seasonal high water table’.

*“If the soils are clayey, this 2 m requirement would be excessive. Since a large proportion of farms are over highly vulnerable or moderately vulnerable aquifers in BC, this requirement will be very difficult for a large proportion of farms to meet. The impact of this decision should be reviewed in more detail, and infiltration rates and the length of temporary storage should be considered. A table showing a matrix that includes factors that influence infiltration rate, such as different soil types, and vertical separation to high water table, could be considered, similar to what is used for designing septic fields, for example.”*

Some respondents disagreed with the requirements, stating there should not be a requirement for covered storage. Comments included:

- Nitrate issues in the Hullcar aquifer were caused by over application of nutrients on the land base as a result of insufficient land for application of nutrients. There is no evidence that storage contributed to the Hullcar nitrate issue.
- Nothing is impermeable - use a stormwater management plan to collect any run-off generated and divert to a wetland facility for treatment.
- The requirement that temporary field storage be on an impermeable base (over a vulnerable aquifer or not) in effect makes this a permanent storage area. Temporary storage must be an option available to producers, and can be contained if handled properly, regardless of the area. The wording of "protective" base in previous intentions papers should be reintroduced here.”

### Ministry Response to Question 7.2

As previously stated, the ministry is refining definitions for the purposes of the proposed new code. Although there is no evidence in the Hullcar Valley that storage contributed to the contamination problem specifically, temporary field storage can and has been a source of contamination in both surface water and groundwater in other areas.

### 7.3 High risk conditions: Do you have any comments on the proposed requirements for high risk conditions? [10 responses]

In general, **most respondents agreed** with the proposed requirements although many requested clarification on how this will be enforced, how often assessment of existing measures will occur, and if there will be support and education for farmers on climate change / extreme weather events, and the associated impacts on farming practices. Additional comments included:

- Consider including site slope as part of the risk conditions.
- Clarify ‘high risk conditions’ and how it aligns with the CSR.
- Recommend requiring proof that existing permanent storage structures are not leaking, if these are to be exempt from setbacks. This should apply for moderate and high risk structures.
- Consider requiring farms with storage in high risk conditions to have emergency response plans, *“including farm management contacts for these structures, should be provided to local government to protect human health (i.e., drinking water system managers and owners). Provide corrective actions and communication between Conservation officers and water purveyors.”*

One respondent disagreed with the requirement for covered storage under high risk conditions, stating:

*“It is impractical to expect that farm operators will be able to deal with covering field storage in time of a storm. Engineered systems must be developed when developing the farm that allow for planning for storms.”*

### Ministry Response to Question 7.3

The proposed approach includes planning for high risk conditions by requiring an agricultural operation to assess the risks and understand the conditions that may occur in their area. For example, if storms or high precipitation events generally occur at a certain time each year, steps should be taken to ensure that protective measures are taken prior to and during that time, rather than to wait to see if the storm event occurs.

### 7.4 POLIS Recommendation: Do you have any comments on the proposed new requirement for existing earthen storages over a vulnerable aquifer (in response to the POLIS Report recommendation)? [20 responses]

While some respondents agreed with the ministry response to the POLIS Report recommendation, many suggested additional caveats, including using a risk-based approach to determine if existing structures require upgrading, taking a progressive approach to allow farmers an opportunity to provide proof of non-pollution before requiring an impermeable base, and consideration to grandfathering existing earthen structures, provided they are not leaking and not over vulnerable aquifers.

One respondent agreed with POLIS recommendation, however suggests that manure storage in excess of 30 tonnes per year should be required to have an environmental QP review.

Additional clarifications are needed on how leaking is defined, the process for a QP to determine if an existing structure is leaking, the inspection requirements for earthen storage and how this will be policed.

*“The 2 year requirement to conduct a QP assessment for existing earthen storage over vulnerable aquifers is unreasonably long. 2 years is much too long when we are considering the integrity of a vulnerable aquifer.”* In addition, it was felt that the QP should have experience in hydrology.

A few respondents did not agree at all, for various reasons:

- Disagree with the requirement; instead recommend using the term hydraulic conductivity, similar to the Landfill Standards of BC.
- Disagree with the requirement for impermeable liner. Recommend that an impermeable liner be required only if the storage structure is found to be leaking.
- Disagree with the extra regulatory steps. *“These regulations must be based on a step by step approach. It makes no sense to impose unnecessary regulatory steps where no pollution can be proved. I think however, that its reasonable that a farmer would have to prove it if imposed by MoE, however should also be able to prove his innocence before being imposed with the full extend of these new proposed regulations.”*
- Decisions should be science and evidence based.

#### Ministry Response to Question 7.4

The onus will be on the agriculture operator to provide evidence that storages are intact and not leaking.

The objective is to ensure that storages do not leak – and the proposed time period takes into account the resources available. The approach is to start with the areas where negative impacts are known or at high risk to occur first. Over time, it is anticipated that there will be more resources to handle the assessment needs.

The ministry will consider the suggestions for changes to the proposed requirements that are based on the most current, science-based and technical information that is available.

## 8. Agricultural composting

### 8.1 General: Do you have any comments regarding agricultural composting? [10 responses]

Three main themes emerged in the responses to this question: concern that these regulations place a greater burden on agricultural composting operations than on commercial operations, clarification of the term ‘unacceptable odours’ and the need to provide guidance on the control of unacceptable odours. Other specific comments included recommendations that composting regulation consider type of material being composted and questions on when the OMRR will take precedence of AWCR. Specifically:

*“The blanket requirements on agricultural properties to properly manage the potential leachate from all soil amendments is well intended but places more restrictions on agricultural properties than commercial compost sites falling under just OMRR.”*

There were also more comments relating to property boundary setbacks that echoed concerns outlined in section 6.

Additional specific comments include:

- Require large operations to undertake an environmental review by a QP before initiating operations (or continuing for an existing operation).
- *“Passive anaerobic composting should be treated as manure storage. Should a farming operation [sic] chose to compost aerobically, strict requirements should be followed (as per Section 5.5 of the January 2012 Intentions Paper).”*
- Recommend focusing on changes where there were previously problems. *“The problem at Hullcar was in over-application of nutrients in land application because a nutrient management plan was not prepared for the farm. The focus of the changes should be in figuring out when a nutrient management plan will be required on an annual basis, not storage facilities.”*
- Recommend omitting property boundary setbacks as these are covered by local government bylaws in most cases.
- Composting animal waste materials should conform with section 7.

#### Ministry Response to Question 8.1

The ministry is taking a risk-based, ‘multi-pronged’ approach for protection of the environment and human health. Protection includes prevention of pollution, and is preferable to waiting till pollution occurs, then trying to clean it up. The proposed requirements include a basic level of protection that every agricultural operation must follow, and then more protective or restrictive requirements when there is a higher risk. Storage may not always be a problem in certain areas due to the geological or topographical conditions, but it has been a major factor in other areas. The proposed requirements are aimed at being flexible with respect to the differences in regions and between higher risk and lower risk areas and conditions.

The proposed agricultural composting requirements are different from the Organic Matter Recycling Regulation (OMRR) requirements due to the nature of the materials being composted and the end use of the resulting product (e.g., on-farm only). Composting of organic materials is an actively managed process – and if not being actively managed, then would be considered storage. The same basic level of protection is proposed where there are the same concerns or potential for problems. For example, regardless of whether a pile is a ‘temporary field stored pile’ or is a ‘composting pile’, the same minimum setbacks, the same collection and containment of leachate, and the same requirement to cover in high precipitation areas will apply.

**8.2 High risk areas and conditions:** Do you have any comments regarding the proposed requirements for agricultural composting in high risk areas and conditions? [18 responses]

Most respondents felt that further clarification is required. There are concerns around compost leachate, the requirement of an impermeable base (and the definition of ‘impermeable’), and the length

of time the cover is required. Specifically, *“The impermeable base should be the final step if proper management, measuring, and recording of the nutrient storage cannot prove leaching is not taking place.”* One respondent noted that soil type should be considered [rather] than requiring impermeable bases as some soils with clay content can act as natural barriers.

Clarification is also needed on whether leachate collection and containment is part of the requirement for composting areas on impermeable bases, as well as the requirement for covering (is this related to size of operation).

Other specific comments included:

- Recommend a bi-annual soil sampling plan for below and beside compost piles, including documentation of composting techniques.
- Concern that these requirements are politically driven instead of science-based. *“...there is no evidence that agricultural composting (as with temporary field storage) in the Hullcar area contributed to the Hullcar nitrate issue. Before the requirement for an impermeable base under compost piles over vulnerable aquifers in the interior is put into legislation, there should be consideration of the actual environmental risk of this activity in the interior of BC.”*
- Consider extension of cover period, as deemed necessary.

### Ministry Response to Question 8.2

With respect to storage in high risk areas, the ministry is proposing to define ‘protective’ and the requirements will be clarified to specifically include: leachate collection and containment, duration of covering, and the soil’s hydraulic conductivity as parameters. The proposed requirements will identify the level of hydraulic conductivity as it pertains to a specific activity.

## 9. Nutrient management and land applications

**9.1 General nutrient management:** Do you have any comments regarding the newly proposed requirements for nutrient management? [27 responses]

In general, there was **significant support** among respondents for incorporating new requirements for nutrient management into the AWCR, with a broad recognition that Nutrient Management Plans (NMPs) are an appropriate tool for balancing nutrients.

Several respondents raised **concerns about the reliability and enforceability of using a nutrient trigger**, and that it would be *“more effective, and scientifically defensible, to require a nutrient management plan for certain levels and types of farming operations.”*

Two government agencies and a First Nations band noted that the Ministry should consider requiring **NMPs for all high risk and vulnerable aquifers**, regardless of whether soil nutrient levels trigger the requirement; and that government should provide clear guidance with supporting planning tools to enable this. It was noted that the Ministry cannot use a complaint-based approach in high risk areas.

Several respondents raised concerns or questions about **how this will be monitored and enforced**, what records will be required and how long they should be retained, and the need for province-wide **education, outreach and support** to effectively roll this out. One respondent was not supportive of

requiring small-scale farms to undertake nutrient testing, as it might place an unfair cost burden on these farms.

It was also noted that **climate change assessment** should be incorporated into seasonal application considerations, particularly as more frequent and intense storm events are occurring in some parts of the province during shoulder seasons.

#### Ministry Response to Question 9.1

The proposed nutrient management planning requirements are new for BC and the agriculture sector. The ministry recognizes that there is a need for education, outreach and support and is working with the Ministry of Agriculture staff to ensure these will be available during implementation.

Smaller agricultural operations may be significant leachate and contaminated runoff contributors, and many small operations in higher risk areas can lead to a larger negative cumulative impact than one or two large operations. However, the ministry is reviewing the proposed requirements to take into consideration the level of risk to ensure that the requirements are practical and achievable.

The ministry is proposing enabling provisions for a director to require more protective measures where, for example, an area is experiencing more frequent or intense storms or changing weather patterns that are outside expected seasonal weather.

#### 9.2 Environmental risk indicators and matrix:

a) Do you have any comments regarding environmental risk indicators, including the risk matrix in Table 4 and the proposed triggers for a nutrient management plan based on nitrogen or phosphorus? [17 responses]

The majority of responses to this question **identified concerns** in three core areas, while two respondents noted that Table 4 provides **useful** and easy to understand triggers.

First, there were **concerns with combining** nitrogen and phosphorus requirements into one table. It was noted that nitrate poses a risk to drinking water aquifers, while phosphorus sensitivity is a risk to surface water and these should be kept separate in the risk evaluation.

Second, several of the respondents who identified as qualified professionals raised concerns in relation to accuracy of tests, with particular concern around **testing for phosphorus** and that requiring an NMP based on phosphorus tests requires careful thought. There was also concern over lack of detail on how the tests would be required (frequency, depth, etc.).

Third, some respondents noted that the table may be unnecessary and that the use of nutrients as triggers may be **overly challenging to enforce** relative to other criteria as there are too many vagaries (accuracy, consistency, enforceability, varying conditions). *"This table should be tested in pilot projects across the Province before brought into law. In fact, as long as a NMP is a requirement based on size of operation, then this table may not be required at all."*

#### Ministry Response to Question 9.2 a)

The ministry understands the complexity of nutrient management planning and concerns about the proposed 'triggers' for requiring a nutrient management plan (NMP). There is strong, science-based evidence for using soil-based tests. These are proposed as environmental indicators to assess how well

the nutrient applications are being managed. The ministry is proposing a number of indicators to accommodate flexibility, regional and types of agriculture operation differences.

**9.2 b)** Do you have any comments on the ministry's proposed additional criteria to trigger a nutrient management plan in response to the POLIS Report recommendation? [23 responses]

The substantial majority of responses to this question were in support of including additional criteria to trigger an NMP aligned with the POLIS Report recommendation, and several noted that additional criteria in the form of **animal units and/or animal density** are more straightforward to monitor and enforce than using nutrient limits. Most submissions specifically stated that NMPs be required by all dairy farms above an animal-based trigger, and some suggested all dairy farms be included (as is the case in Washington state). Several noted that feedlots, concentrated animal feeding operations (CAFOs) and possibly other operations that use manure (e.g., berry farms) should be required to prepare NMPs as well. One response suggested any operation with a net increase in nitrogen over a land base be required to prepare an NMP.

The following submission generally aligns with many of these responses:

*"Number of animal units and number of animal units per hectare need to be triggers for an NMP requirement on livestock farms that spread manure on site. The thresholds of 50 animal units per farm and 10 AU per hectare are mentioned and are appropriate. Feedlots should have the same threshold as other livestock operations. Although the proposed limits on the amount of nutrients that may be applied are important, and do effectively limit density, this is much more difficult to monitor than animal numbers and density."*

One industry response specifically recommended using an animal density trigger relative to area of land receiving the manure (owned or rented), rather than using animal units.

One industry response advised that using animal units to trigger nutrient management planning is duplicative to the nutrient thresholds and that the AWCR focus on ensuring the Risk Matrix, NMP tools and NMP processes are effective.

Another industry response highlighted significant concerns about the impact on **nurseries** that have many different types of crops grown in smaller numbers, each with varying nutrient needs that are carefully managed.

Several responses also identified the **need to properly prepare for a successful roll-out** by phasing in over 3 years, and providing adequate funding through the EFP program in advance of introducing regulation.

#### Ministry Response to Question 9.2 b)

In response to the comments received, the ministry is proposing to add other criteria as indicators for nutrient management planning that would take into consideration the nutrient load on the available land-base, such as an animal unit or animal density, or nutrient unit or nutrient density. These may be more straightforward, easier to monitor, and would exclude the very small operations from the requirement to complete nutrient management plans. These excluded operations would still be subject to other requirements in the proposed new code.

**9.2 c)** Do you have any comments on the proposed requirements to enable a director to require a nutrient management plan to be independently verified and approved by government in response to the POLIS Report recommendation? [21 responses]

Responses to this question varied across the spectrum from not supportive of having a **director require an NMP**, particularly in reference to "potential for negative impact" as it is not clear that this would be evidence based; to request that directors have appropriate qualifications to undertake these assessments; to statements that this is a necessary step, particularly in high risk situations. One industry organization requested that clear steps be set out to guide a director's decision, and to consider having multiple directors agree on the need, and one community group requested a threshold be set for "negative impact".

Several responses questioned the meaning of "**independently verified**," whether this would be by a third party, who would bear the cost and whether this would unnecessarily lengthen the process.

With reference to the addition of a **safety factor**, responses generally fell into the following three areas:

- A 30% safety factor is appropriate until a director confirms (with test results) that the safety factor is no longer needed; or
- A safety factor is appropriate, but the factor needs to be based on science; or
- The process of preparing NMPs incorporates multiple decision points that consider uncertainty and appropriate safety factors to address the uncertainty, and an additional safety factor is not necessary.

Approximately a quarter of responses referred to the importance of **Area-Based Management Plans**, or broader planning that considers **cumulative effects** of all operations and nutrient loading at a watershed scale, as indicated by the following submission:

*"Watershed based management plans that consider cumulative effects of all operations and limit nutrient loading on a watershed scale are necessary. The proposed regulation largely focuses on individual agricultural operations and, appropriately, modifies requirements based on the level of risk anticipated given topography, aquifer vulnerability etc. It lacks, however, a framework to regulate based on cumulative impacts of operations across a watershed, particularly in areas of intensive agriculture like the Fraser Valley. Well defined triggers for requiring such plans based on nutrient loading and density of animal units at the watershed scale need to be developed."*

#### Ministry Response to Question 9.2 c)

All Nutrient Management Plans (NMPs) have two objectives: optimizing productivity and protecting sensitive environments from pollution. Throughout the NMP process, the trained NMP preparer makes a series of informed decisions to determine appropriate nutrient application rates and to achieve these objectives.

Trained NMP preparers currently have multiple opportunities to adjust factors to be more precise and accurate with a focus on various environmental safety concerns. At each step in the NMP process, there are 'safety factors' taken into consideration. The approach is inherently conservative and therefore protective.

Nutrient management plans are outcome-based and as such, they provide flexibility to accommodate differences between farms. Differences in the following factors can be accounted for to determine what actions need to be taken to minimize environmental risks of nitrogen and phosphorous losses: precipitation, evapotranspiration, soil type and texture, crop type and nutrient requirements, nutrient sources, etc. The proposed process enables producers to achieve compliance in a manner that is appropriate for different regions and cropping systems. The results of soil-based tests for the purpose of nutrient management planning (including Post-Harvest Nitrate Test (PHNT) or Soil Test Phosphorous) are not proposed to be used for compliance purposes, but may ‘trigger’ a risk assessment in the form of a nutrient management plan.

With respect to independently verified NMPs, the ministry is proposing to enable a director, on a case-by-case basis, and based on evidence of negative impact, or potential negative impact, to require an NMP be prepared if there is no NMP, or that an NMP needs to be independently verified, or both.

The proposed requirement for an NMP (that can be requested for review) and the notification that a QP-prepared NMP exists will also start to build a set of information and data on the activities on the land-base.

**9.2 d)** Do you have any comments regarding the new proposal to implement a tracking and verification process for operations located in high risk areas in response to the POLIS Report recommendation? [13 responses]

Generally respondents were **quite supportive of implementing a tracking and verification process** in high risk areas, and even more broadly, to ensure nutrients are applied as per the NMP. It was noted that the Washington State program collects information on all dairies every two years and conducts ongoing routine inspections of dairy facilities and records, and that this program has broad support from the public and industry. Other respondents requested annual routine inspections.

There was less agreement on whether NMPs should be **released to the public**. Responses were split between the need to improve transparency by making all NMPs public, and the need to **protect proprietary information** by keeping all NMPs private.

#### Ministry Response to Question 9.2 d)

The ministry’s proposed requirement for notification that an agricultural operation has a QP-prepared NMP will start to build a set of information and data, which will allow the ministry, over time, to understand the activities on the land-base and assess the trends of the nutrient loading. Information that an agricultural operation has an NMP, and a summary of the plan contents, is proposed to be publicly available to support the public’s expectations for transparency and accountability.

The ministry proposes to enable a director to request records and NMPs for an area-based review, to assess if there are concerns, such as cumulative negative impacts, and determine the contribution from agricultural operations in the area.

### 9.3 Land Applications:

**9.3 a)** Do you have any comments regarding the land application requirements (including proposed prohibited application requirements for high risk areas and conditions, proposed restricted application

requirements for high risk areas and conditions, requirements for record keeping or director requirements)? [23 responses]

Most respondents were in **general support** of the proposed requirements, with some respondents stating strong support for no spreading on frozen or snow-covered ground, saturated soils, areas having standing water, or in high precipitation areas.

Several respondents **expressed concern with specific prohibited applications**, including the following:

- **Support for flexibility in shoulder season** in high rainfall areas with approval being subject to individual risk assessment because some crops grow and require nutrients during excluded dates.
- **Lack of support for shoulder season bans**, primarily due to concern over application turn-around time and how the Ministry will handle large volumes of applications.
- Both **support and concern** for restricting all manure application on **snow-covered or frozen** ground. Support that no land application occur on snow covered or frozen ground (especially on sloped land or near water bodies); and concern that this policy is political, not science-based, as it may be safe in some areas.
- *"Rather than setting a prohibited application date in high precipitation areas, consider relying [sic] the other criteria such as soil saturation and temperature to restrict application."*
- Specific comment that "strong or diverting winds" be replaced with language acknowledging alternative forms of application not affected by wind (e.g. below soil surface or below crop canopy).
- Suggestion to extend prohibition to include the application of animal waste or synthetic products with reactive or leachable N to fields that are bare of crops, to encourage use of soil amendments that are low in reactive / leachable N content.

Two respondents noted the importance of a **phase-in period** for new restrictions, and the importance of making a **risk assessment tool user friendly and available well in advance** of changes.

One respondent noted that "direct discharge" and "direct runoff" are imprecise terms that may allow for subsequent runoff following application. It was noted that Washington State uses the **concept of Application Risk Management** instead.

#### Ministry Response to Question 9.3 a)

The proposed prohibitions, restrictions and requirements for land applications are based on experience and evidence that these types of activities pose higher risk for pollution. The 'Application Risk Assessment' proposed for use during the 'shoulder season' is intended to give flexibility during periods where there is higher risk in some areas and during some conditions. The risk assessment will take into consideration conditions, such as soil saturation and temperature, and methods of application, and is based on the proposed requirement that there needs to be a crop that will actually utilize the nutrients and that there is low risk for runoff.

The ministry will ensure that 'direct discharge' is clearly defined, and does not propose using the term 'direct runoff'.

**9.3 b)** Do you have any comments on the ministry’s proposed new requirement for application of water for field irrigation to match soil and crop needs (for fields over vulnerable aquifers) in response to the POLIS Report recommendation? [26 responses]

Responses were relatively evenly split between supportive and not supportive of requiring irrigation management, with more in favour of requiring these plans over vulnerable aquifers. Those opposed noted that this is a redundant requirement, as it is addressed in the nutrient management planning process, or that it should only be required in limited circumstances.

Two government agencies noted that this should take a different focus, as follows:

- AWCR should focus on reduction of excess nutrient content and mobilization, and N and P concentrations of irrigation water should be measured and calculated into nutrient application rates (as opposed to focusing on water conservation).
- Uncertainty on whether this appropriate in high precipitation areas, and may be best reserved for dry areas.

#### Ministry Response to Question 9.3 b)

The ministry is not proposing to prescriptively require specific technologies or methods, but rather, to use a results-based approach to achieve desirable environmental outcomes and foster innovation.

However, the ministry is revising the proposed requirement for an ‘irrigation scheduling plan’ to requiring that ‘over a vulnerable aquifer, the quantity and timing of irrigation does not exceed crop needs’, to focus on the environmental concerns, i.e., reduction of excess nutrient content and mobilization, not water conservation. Nitrogen and phosphorous concentrations in irrigation water will need to be measured and accounted for in nutrient application rates. The ministry recognizes that this is addressed in the nutrient management planning process, but it is also important in the case where there is no NMP required.

**9.3 c)** Do you have any comments on the ministry’s response to the POLIS Report recommendation for a “temporary environmental protection order (moratorium) on liquid animal waste spreading on identified areas of concern in intensive livestock operations”? [11 responses]

Responses were quite **split between agreeing and disagreeing** with this recommendation. Those in agreement noted it as an important last resort on a case-by-case basis. Two government agencies questioned why this would only apply during the months of October to March over vulnerable aquifers, as it may be too restrictive.

Those disagreeing cited concern about a moratorium at the surface due to legacy nitrates deep in the soil, as long as surface nutrients are being applied responsibly and in balance with crop needs (defined in an NMP).

One agency highlighted the legislative gap and the need for improved clarity and broader oversight of current practices where manure application may endanger public health, and suggested that the ACWR be modified to point to powers for health officers to protect public health (which would also require updating the *Public Health Act*).

### Ministry Response to Question 9.3 c)

The ministry has previously, and continues to, propose requirements for no nutrient applications to frozen, snow-covered or saturated soil, and a seasonal ‘blackout period’ (from November 1 to February 1) for nutrient applications in high precipitation areas. The ability for the ministry to issue pollution prevention and pollution abatement orders is already available through current legislative and regulatory structure and could enable a ‘temporary moratorium’ on manure applications, if needed.

This recommendation is also being addressed in the proposed revisions by the proposed nutrient management planning process, which takes into account appropriate timing and conditions for land applications.

As well, the ministry is proposing to enable a director, on a case by case basis, and based on evidence of negative or potential negative impact, such as a high risk condition (e.g., an air quality advisory), to prohibit land applications of manure (nutrients), or to designate a high risk area, e.g., based on the issuance of a Drinking Water Protection Plan, or establishment of a Water Quality Objective.

## 10. Storage and use of wood residue

**10.1 Terminology:** Do you have any comments regarding the proposed replacement of the term ‘wood waste’ with ‘wood residue’?

There is **general support** for the proposed change of terms, however some **clarification** is still needed:

- “Agree. Wood waste should apply to something that is not being used or composted for later use. Wood waste should be for wood that has no appreciable short or long term use.”
- Define “clean” in terms of clean wood residue.
- Clearly define both “wood waste” and “wood residue”.
- Clarify that “that wood residue or by-products from wood supplies used on the farm (e.g., posts, or lumber) can be stored if they are later used on the farm for an agricultural use.”
- Recommendation that ENV step back on banning post-consumer wood waste at feedlots due to concern that the ban will have unintended consequences for local landfills and feedlot operations. *“Banning the use of post-consumer wood chips on feedlots has the potential to hurt both local landfills and feedlot operations in our Regional District. There may not be locally available carbon rich materials for some feedlots in BC to use.”*

### Ministry Response to Question 10.1

Due to the general support for the proposed requirements with respect to wood residue, no further changes are proposed. Definitions will be clarified.

The use of post-consumer wood waste will be prohibited due to the difficulty in removing contaminants; and the risk that these contaminants may be applied on agricultural land growing food crops.

**10.2 General:** Do you have any comments regarding the proposed general requirements or proposed allowable uses for wood residue (including the proposed prohibition for high risk uses)?

There is **general support** for the proposed requirements as outlined in the IP3, with some **clarifications**:

- Consider including more detail on the end use, amount stored, and type of wood residue as well as the area it is applied to. *“...different types of wood waste pose different risks – cedar products can pose more issues than Douglas fir or hemlock products.”*
- Clarify “one-time application”. How long until another application can be done? *“This must be written in a different way to clearly demonstrate the intent behind this regulation.”*

#### Ministry Response to Question 10.2

The ministry will consider revising the proposed requirements to clarify intent. Guidance is available on how much and how often wood residue may be applied based on types of use and are not proposed to be set in regulations, as the recommendations may change based on a number of factors and conditions.

The ministry is proposing enabling provisions for a director to require more protective requirements on a case-by-case basis, if there are concerns regarding the quantity and use of wood residue.

**10.3 Minimum setbacks:** Do you have any comments regarding the proposed minimum setbacks, including distances proposed in Table 5 of the Intentions Paper?

Generally **responses are supportive**, with some suggested **clarifications** on terms used in this section:

- Clarify the term “bedding”; is this horticultural bedding or livestock bedding?
- “For clarity, once wood waste is used for bedding purposes, and mixed with manure, it should be treated as manure.”
- Consider defining “immediately” in terms of an allowable time period.
- Clarify the intent behind the difference in minimum setback distances between high water mark and domestic water source. *“Is it not possible that a lake could function both as a domestic water source and as a high water mark?”*

#### Ministry Response to Question 10.2

The ministry will clarify the terms, definitions and intent, as suggested; wood residue can be used for both horticultural and livestock bedding. There is a proposed change to the minimum setback from a watercourse for land applications from 1.5 meters to 3 meters.

## 11. Livestock and poultry operations

**11.1 Confined livestock and poultry areas:** Do you have any comments on the proposed provisions for management of livestock and poultry operations, including minimum setbacks? [7 responses]

Responses were either supportive, particularly in relation to not allowing direct access to watercourses, or outlined concerns, including the following:

- Need for farmers to identify flood plain areas on farms, and ensure no feed areas are located in flood plains.
- Consider vertical separation from aquifers in the setbacks section.

- Missing unacceptable odours in list of concerns to manage.
- Need distinction between CLAs and CFOs, particularly large feedlots – concern that large confined feedlots need greater than 1.5 meter setbacks from property line.
- All confined livestock areas should require permits, with approval of controls in place.

#### Ministry Response to Question 11.1

The proposed definition of minimum setback will be clarified to be the minimum distance along the horizontal plane above the surface of the ground from the watercourse, drinking water source or property boundary to the edge of the activity or structure. The ministry is proposing enabling provisions for a director to require a further setback than the minimum, based on concerns or evidence of negative, or potential negative impact.

Proposed minimum vertical distances below the ground from burial pits or storage, for example, to the seasonal high water table are specified in the section specific to those activities.

#### 11.2 Feedlot-specific: Do you have any comments on the proposed requirements specific to feedlots? [6 responses]

One response was supportive as outlined, and the remaining requested changes or additions, including:

- Delete the requirement to notify a director, or define criteria or requirements that will be needed to meet director approval.
- Define "intact protective layer" and strengthen wording to clarify that the expectation is to have a protective layer that does not leak, as this is currently unclear.
- Include paddocks in requirements for feedlots (lines 397 to 404).
- If monitoring for leaks is not overly onerous, make this a regular expectation rather than requiring direction.
- Request to consider manure in a confined livestock area as subject to "storage facility" requirements, with reference to January 2012 IP (Page 9) proposing this.

#### Ministry Response to Question 11.2

The ministry does not regulate land-use planning and zoning, and is therefore proposing to not have a requirement for notification prior to a new feedlot being established. The definitions of an intact protective layer will be clarified. The ministry will consider making regular monitoring for leaks a requirement.

The proposed requirements for feedlots are specific to management of animals, the manure pack, leachate collection and containment, and removal and land application of excess manure, etc.

Paddocks, corrals, and exercise yards more appropriately fit within the definition of a confined livestock area and not a feedlot.

#### 11.3 Feedlot-specific (high risk areas): Do you have any comments on the proposed requirements for areas over vulnerable aquifers in response to the POLIS Report recommendation? [8 responses]

Three responses were supportive as outlined, while the remaining requested the following changes or additions:

- Consider using historical 10-year high water table elevation for minimum vertical distance requirement.
- Need for clearer definition of a high risk area for feedlots, and process for notifying a director to ensure expectations are clear for farmers.
- Request to include CLOs as being in "high risk areas" if they meet conditions outlined in the January 2012 IP.
- Not supportive of an impermeable surface below all feedlots in vulnerable aquifers because clay can be very effective at reducing infiltration rates. Also a stormwater management plan is needed to manage runoff from impermeable surfaces (e.g., engineered wetlands are very effective).

#### Ministry Response to Question 11.3

The ministry will consider the recommended suggestions to clarify proposed definitions and proposed requirements.

The ministry is proposing to define 'protective' and the proposed requirements will be clarified to specifically include: leachate collection and containment, duration of covering, and the soil's hydraulic conductivity as parameters. The proposed requirements will also identify the level of hydraulic conductivity as it pertains to a specific activity.

**11.4 Seasonal feeding areas, grazing areas and temporary holding areas:** Do you have any comments on the proposed requirements for seasonal feeding areas, grazing areas and temporary holding areas? [6 responses]

Particular concern was raised regarding the following items:

- Allowance for direct access to watercourses for drinking.
- The requirement to remove animals during flood events is inadequate and should exclude animals from flood-prone areas, particularly during wet seasons. Further, concern was cited that areas prone to flooding (including during spring runoff) should have a requirement for no winter feeding.
- *"Allowing pasturing with only 5 meter setbacks in areas that experience flooding [...] is likely to result in the discharge of excess nutrients and bacteria at the times and under the conditions when elevated fecal coliform bacteria levels are frequently documented in transboundary waterways. This section does not appear to include clear and unambiguous standards that will lead to desired environmental outcomes in these waters."*
- Suggestion to define "effective" controls, as this is ambiguous.

#### Ministry Response to Question 11.4

The Ministry is proposing to allow livestock direct access to watercourses for livestock watering and will be setting requirements for protective measures to minimize trampling and soil erosion, and preventing contaminated runoff from the areas. The ministry is proposing that a director will have the ability to impose stricter protective requirements should these areas not be managed properly.

The ministry is proposing to add the requirement to remove animals prior to and during flood events. Proposed requirements include preventing storm or rainwater from flowing into manure piles, and preventing contaminated runoff from going into watercourses.

## 12. Managing mortalities and small slaughter operations processing wastes

### 12.1 General: Do you have any general comments on managing mortalities and processing wastes from small slaughter operations? [7 responses]

There was general support for the proposal in the IP, with the following concerns and considerations:

- *"The AWCR review process should have input from a veterinary and Medical Health Officer (MHO) expertise in relation to SRM and mass carcass disposal around Bovine Spongiform Encephalopathy (BSE) and other disease agents of potential concern. At minimum, the new AWCR should mention that in the event of a disease crisis (such as the UK experience), veterinary and MHO expertise must be sought for input."*
- Ensure alignment with other agency procedures currently in place for managing mortalities (i.e. local governments, Canadian Food Inspection Agency, and emergency agencies have procedures for managing these situations).
- Local governments should be made aware of slaughter operations that dispose on property.
- Consider requiring all mortalities be buried, composted or incinerated within 72 hours to reduce vector attraction.
- Some limits to the scale of managing mortalities may be needed.

Although the recommendations are supported, one group submission highlighted the need for strong enforcement:

*"To a large degree, the AWCR has been considered, by the farming community, to be a set of guidelines. The new AWCR must become a true regulation with strict enforcement. Penalties in proportion to the type and severity of infractions are essential to ensure continued compliance."*

#### Ministry Response to Question 12.1

The proposed requirements for disposal of mortalities are based on the normal mortality for livestock operations, and for the small quantities of slaughter and poultry processing waste from small slaughter and poultry processing facilities situated on the agricultural operation. The proposed new code is not intended to regulate larger than normal mortality quantities—there are proposed restrictions on the quantities that may be disposed of on the agricultural operation. Other federal and provincial regulations and protocols are in place to manage emergency mass carcass disposal.

Larger slaughter and poultry processing facilities must follow the Code of Practice for the Slaughter and Poultry Processing Industries. If a small slaughter facility on an agricultural operation generates Specified Risk Material (SRM), there are restrictions for on-site disposal of the small amount of SRM that may be generated. If SRM is moved off-site, federal regulations apply.

**12.2 Burial of mortalities:** Do you have any comments on proposed requirements for the burial of mortalities? [8 responses]

Concerns were highlighted about the need for more or stronger criteria for burial site locations, particularly in relation to high precipitation or flood-prone areas, and to align with the Code of Practice for the Slaughter and Poultry Processing Industries and the Canadian Food Inspection Agency requirements for the disposal of Specified Risk Material (SRM). Comments included the following:

- Include additional criteria to high water table, such as soil type, slope of land, rain events, and vulnerability of aquifer for allowed burial sites. The high water table should be measured over a 10-year historical record.
- *"We support the use of regulations that require protective measures to prevent the contamination of watercourses from animal mortalities"* with additional comment that monitoring is required.
- Highlight that above ground piles are a best practice.

There was also a request to clarify record requirements so that farmers know if these will be strictly required as an ongoing management practice.

**Ministry Response to Question 12.2**

The ministry is considering the comments received to improve the proposed revisions, including improved definitions and recordkeeping requirements.

**12.3 Incineration of mortalities:** Do you have any comments on incineration of mortalities, including the proposed opacity limits, particulate matter limits as per Table 6 of the Intentions Paper, or minimum setbacks? [4 responses]

Concerns were noted about air quality and the need to encourage composting over incineration, except under exceptional conditions, for disease management. One agency submission recommended developing guidance on better burning practices: to lessen negative impacts to air quality, and to ensure that burner stack gas temperature is adequate for BSE protection prior to loading the carcass material.

**Ministry Response to Question 12.3**

While incineration is an allowable method for disposal of mortalities, incineration currently is only feasible for poultry mortalities. Amendments will be considered should incineration become more feasible in the future for cattle or other mortalities. The proposed revisions include improvements for reducing impacts to air quality with lowered particulate matter and opacity limits.

**12.4 Composting of mortalities:** Do you have any comments on the proposed requirements for composting of mortalities? [5 responses]

There is general support for the proposed requirements for composting of mortalities, though a few recommendations are provided to clarify:

- Clarify that small bone fragments are tolerable in finished compost (zero tolerance is not practical).
- Clarify whether the 1.5 m requirement refers to the high seasonal water table or present ground water level.

- Note that disposal of SRM carcasses (or related compost) must follow proper provisions.

#### Ministry Response to Question 12.4

The ministry is considering the comments received to improve the proposed revisions for composting of mortalities and processing wastes.

## 13. Recordkeeping

### 13.1 General: Do you have any general comments on recordkeeping?

In general, respondents support the requirements for recordkeeping but request further clarification on the requirements and provide suggestions, such as:

- Clarify if records are required or recommended.
- *“One of the stated goals listed on page 1 is to provide “clear unambiguous requirements.” However, the paper states throughout the records may be requested or required by a director. If recordkeeping is required on an ongoing basis, this must be stated more clearly so that producers understand what they are expected to do.”*
- Outline the minimum requirements for recordkeeping, including how long the records must be kept, according to different sections of the regulation.
- Use records as evidence of good management practices. *“We would request that MOE staff and directors not only use records as grounds for disciplinary action, but to accept a farmer's records as evidence of good management.”*
- Provide support for farmers and ranchers with regard to basic monitoring and recordkeeping.
- Provide access to records for water purveyors when there is an incident that may affect water quality.
- Require the submission of annual reports on nutrient management plans and disposal or transportation of off-farm waste to ENV.

#### Ministry Response to Question 13.1

The proposed changes will state general requirements that will apply to all recordkeeping (e.g., how long records must be kept), and what records will be required specifically for each activity.

Proposed requirements include notification that an agricultural operation has a nutrient management plan prepared.

## 14. Corrective actions

### 14.1 General: Do you have any comments on corrective actions? [15 responses]

All of the responses provided **outlined concerns or requests for further clarification** on corrective actions to be taken. In particular, the vast majority of responses identified the need to define a clear framework and process for corrective actions. For example, one group response noted: *“Benchmarks should be outlined to specify the type of corrective action to be applied to certain types of problems. Creating such a framework of benchmarks would allow for uniform regulatory enforcement across*

*regions and issues in the province.*" Another submission noted that Washington State has effectively used a framework with technical assistance, to allow for voluntary compliance within appropriate timeframes, coupled with ongoing verification (on-site inspections, sampling, record reviews, outreach). This is followed by the use of enforcement actions for repeat, ongoing or egregious violations. Key suggestions included:

- Provide a clear step-by-step process.
- Establish clear criteria for when government will inspect farms with nutrient management plans and commit to conducting regular inspections.
- Work with industry and encourage the use of non-regulatory tools over correction actions. Use *"reasonable and practical corrective actions for producers who are negligent to AWCR regulations."*
- Establish a *"dispute resolution process that is fair and equitable allowing agricultural operators to defend or dispute charges made against them...mediation as an alternative to enforcement can yield positive results."*

Three responses noted that ENV staff need appropriate **qualifications, training and experience** to be prepared for effectively working with individual farmers. These comments noted that a more collaborative approach from the outset would likely result in improved cooperation and outcomes for all involved. Responses noted staff should clearly communicate the process up front so that farmers are aware of the consequences of failing to comply.

Two responses noted the importance of **aligning with other regulations**: *Spill Reporting Regulation* and the *Environmental Management Act* with regard to corrective action, fines, etc.

Finally, two responses noted concern that taking corrective action prior to having any evidence that a particular farm is polluting is inequitable and poses serious hardship to farmers, while another response emphasized the importance of using the "precautionary principle" to halt land / nutrient management until evidence is provided.

#### Ministry Response to Question 14.1

The proposed requirements will be clarified that the corrective actions are for the agricultural operator to take when a problem has occurred, e.g., the agricultural operator must take actions as soon as possible to stop and contain leachate or contaminated runoff from entering a watercourse; or, if a visual assessment indicates black smoke coming from an incinerator (i.e., above the opacity threshold)—the agricultural operator needs to take actions immediately that will reduce the opacity below the threshold, and not wait to be told to take action.

The ministry has a Compliance and Enforcement Policy and Procedures (CEPP) strategy in place to ensure consistency across the Environmental Protection Division in the conduct of compliance and enforcement activities. The CEPP supports the ministry's aim of providing greater consistency, increased clarity and predictability regarding the consequences of non-compliance, as well as assurance that resources are directed to the highest priorities. Within the CEPP, a Compliance Management Framework clearly sets out purposes and steps for conducting inspections and investigations, and tools and guidance to assist compliance and enforcement staff in how to address concerns, complaints and compliance issues, including a Non-Compliance Decision Matrix.