

Review of the Agricultural Waste Control Regulation Policy Intentions Paper for Consultation

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1. Introduction

The Ministry of Environment (the ministry) is reviewing the [Agricultural Waste Control Regulation](#) (AWCR) with the intention of revising the regulation. The AWCR describes environmentally sound practices for using, storing and managing wastes, such as manure, by-products (including composted materials) and other materials used in agriculture (such as wood waste).

The AWCR came into force in 1992 under the *Waste Management Act* (WMA). In 2004, the WMA was replaced by the [Environmental Management Act](#) (EMA) and the Waste Discharge Regulation, and minor amendments were made to the AWCR. The regulation was further amended in 2008 to establish consistent rules and emission standards for biomass (wood-fired) and other fuels for boilers used in agriculture. The current process is the first comprehensive review of the AWCR since it was enacted in 1992.

The ministry identified the AWCR as a priority for review to deal with impacts to the environment and human health from agricultural operations, maintain consistency with current provincial legislation (the *Environmental Management Act*, Waste Discharge Regulation, associated codes of practice and regulations), and address current and emerging agricultural and environmental trends and practices. As part of this review, the ministry intends to shift to regulating discharges from agricultural operations by a code of practice (minister's regulation).

The purpose of this intentions paper is to describe the ministry's proposed revisions for discussion and consultation, and to seek responses and comments from stakeholders and the public on the ministry's intentions.

The intentions paper and response form for providing comments to the ministry, as well as further information and links to related legislation, are posted on the ministry's [consultation](#) and the [AWCR](#) webpages.

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2. Ministry and Government Goals

The Ministry of Environment provides leadership in environmental management through legislation and programs, compliance activities and shared stewardship initiatives. The ministry's mandate is to protect human health and safety, and restore and maintain the diversity of native species, ecosystems and habitats.

The ministry's core business areas include environmental protection, stewardship and compliance, in support of the [Government's goals](#) of: (1) clean and safe water, land and air; and (2) healthy and diverse native species and ecosystems.

3. Objectives for Proposed Revisions

3.1 Objectives

The ministry is proposing revisions to the Agricultural Waste Control Regulation for regulating discharges to the environment from agricultural operations with the objectives of:

- ▶ Establishing consistent standards and requirements for the management of nutrients, wastes and by-products at agricultural operations in a manner that protects the environment and human health.
- ▶ Providing clear regulatory direction, appropriate to degree of risk of impact to the environment.
- ▶ Reducing and removing wastes and toxins from the environment.
- ▶ Focusing on desired environmental conditions rather than prescribed agricultural practices where appropriate, and supporting the use of sound judgment in managing agricultural operations (e.g., through use of best management practices).
- ▶ Where appropriate, incorporating current and emerging trends and technologies related to the management of nutrients, wastes and by-products on agricultural operations.

3.2 Concerns addressed

Specific concerns of the ministry regarding agricultural practices that have the potential to significantly impact the environment include:

- ▶ The creation and movement of leachate to ground and surface waters.

- ▶ Over-application of nutrients that can move to ground and surface waters.
- ▶ Erosion and transport of material (including agricultural wastes and soil) to surface waters.

To address these concerns, the ministry is proposing revisions in the following areas. Specific proposed revisions for each area are discussed in the sections following.

- ▶ On-farm transport of agricultural wastes and by-products.
- ▶ Storage of agricultural wastes and by-products.
- ▶ Storage and use of woodwaste.
- ▶ Composting of agricultural wastes.
- ▶ On-farm disposal of mortalities.
- ▶ Land application of agricultural wastes and by-products.
- ▶ Nutrient management planning.
- ▶ Emissions.
- ▶ Emerging technologies and sector-specific requirements.
- ▶ Phase-in schedule.
- ▶ Guidelines and best management practices.
- ▶ Awareness, compliance and enforcement.

4. Background

4.1 Environmental issues associated with the management of agricultural wastes

Impacts to human health and the environment associated with the management of agricultural wastes primarily involve release or emission of nutrients, such as nitrogen (N), phosphorus (P) and potassium (K), bacteria or contaminants into watercourses, groundwater or the air. Nutrients are required for optimal growth of plants however, excessive nitrates, phosphates and bacteria or other contaminants in water resources can impact fish, wildlife and water quality.

The primary environmental issues of concern to the ministry are surface water quality, ground water quality, cumulative effects, and air quality.

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A. Surface water quality

When managed properly, agricultural wastes can be beneficially used as fertilizers or soil conditioners – providing nutrients that can be utilized by plants or improve soil quality. Problems can arise however, when runoff and erosion from improperly spread or stored materials transport excess nutrients and/or bacteria into surface waters.

Phosphorus and nitrogen in runoff can result in excess nutrients in, or eutrophication of, water bodies. Eutrophication can lead to rapid, excessive algal growth and decay, which reduces oxygen levels in the water, suffocating fish and other aquatic animal life.

Water quality monitoring data for British Columbia indicate that some creeks flowing through agricultural areas have nitrate, phosphorus and bacteria concentrations that are at or over acceptable levels for drinking water and aquatic life.

B. Groundwater quality

Groundwater quality is impacted when the nutrients in manure or composted materials are applied to fields in excess of crop requirements, or when fields are supplemented with commercial fertilizers without adequate consideration of crop nutrient needs and soil capacity. This can lead to excess nutrients (primarily nitrates) in the soil, which leach down into the groundwater with rain or irrigation. Leaching into groundwater can also result from improperly stored manures or compost. This is of particular concern in areas of high precipitation, and over unconfined aquifers. As well, the potential release of pathogenic bacteria, viruses, and parasites into the environment, particularly drinking water supplies, is a significant health concern.

C. Cumulative effects

Over time, small quantities of nutrients that have run off into drainage ditches, creeks or streams, or leached into ground below the root zone, accumulate in the receiving environment, and can cause problems equal to or greater than nutrient loading from a single site.

For example, long-term Ministry of Environment monitoring of British Columbia creeks over the past three decades indicates that nitrate levels have been steadily increasing in many watercourses, resulting in what appears to be a chronic water quality issue.

D. Air quality issues

Historically, environmental concerns and regulation of agricultural wastes have focused on water quality. However, air quality issues associated in particular with livestock and poultry operations have become an increasing public concern in recent decades. Air emissions attributed to animal agriculture consist of odourous and gaseous compounds, as well as greenhouse gas emissions and particulate matter related to manure and animal management. These are of concern when they reach high levels that impact respiratory health.

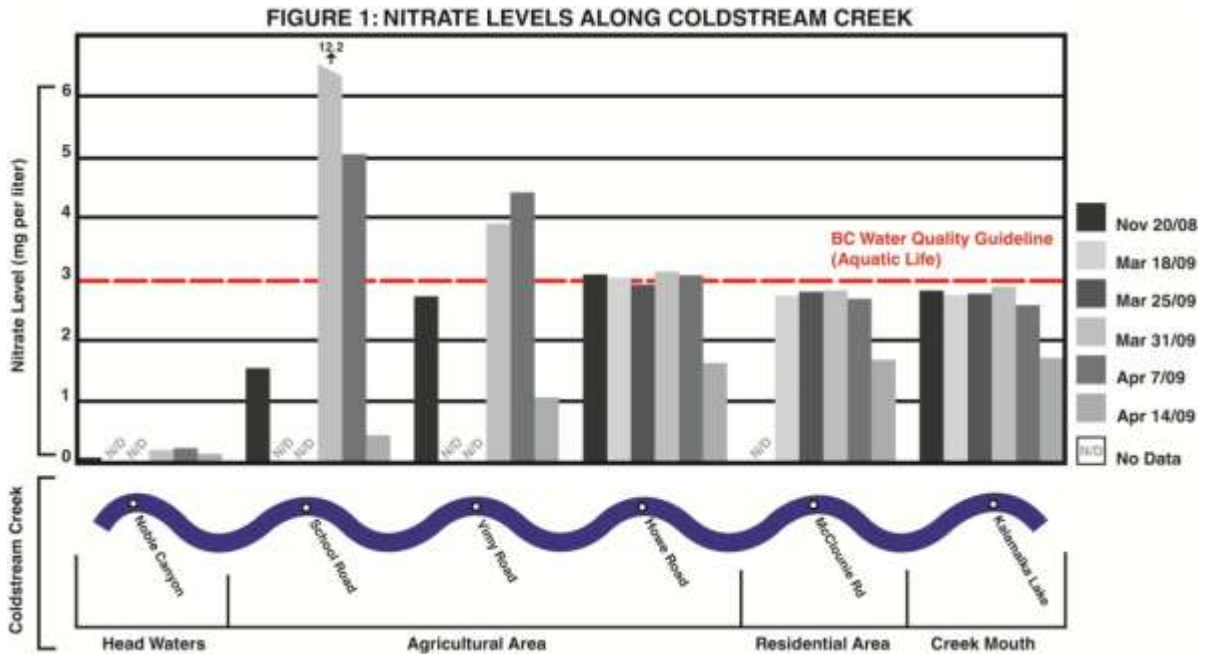
E. Examples from environmental monitoring

A Ministry of Environment water quality monitoring program in the Coldstream watershed in the North Okanagan provides an example for surface water quality concerns (see Figure 1). Coldstream Creek originates in the mountains of Silver Star Provincial Park and flows south through Noble Canyon and then west through the valley bottom where it drains into the north end of Kalamalka Lake. It is the main tributary to Kalamalka Lake, supplying 80% of the flow and is used as a source of drinking and irrigation water, for recreational activities, and provides habitat for a variety of aquatic life.

Nitrate levels at the upstream monitoring site in Noble Canyon, above the influence of agriculture and settlement activities were very low. For the sites below the canyon, nitrate levels were substantially higher at the sampling sites along the valley bottom through the agricultural area to the mouth, with many near or above the B.C. Water Quality Guidelines for aquatic life (3.0 mg nitrate/L). In early March, nitrate levels at one site spiked over the B.C. Drinking Water Quality Guidelines (10 mg nitrate/L). Bacteria levels (not shown) also tended to increase downstream of the canyon and confirmed monitoring data from numerous other studies that indicate a chronic issue with high coliform bacteria in Coldstream Creek.

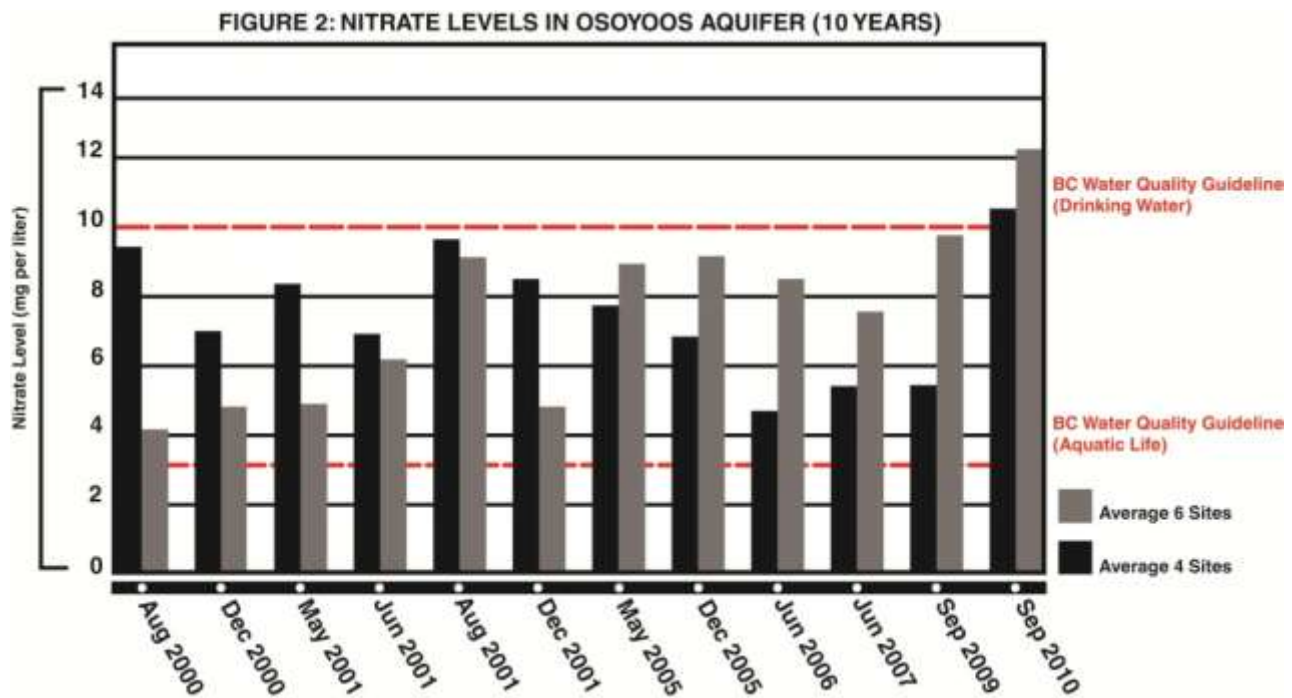
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Figure 2 shows an example of nitrate levels measured in groundwater samples from the Osoyoos Aquifer over a ten year period. The sampling sites are located to the east of Osoyoos Lake in an agricultural area. Results of ten monitoring sites were grouped and averaged for sites located in close proximity to each other to clarify presentation of data.



Source: Coldstream Creek Water Quality Monitoring: 2008-2009 Final Report – July 06, 2009
Ministry of Environment, Environmental Protection Division, Penticton

Nitrate levels over the ten-year period were consistently above BC Water Quality Guidelines for aquatic life (3.0 mg nitrate/L). The most recent nitrate levels are of particular concern, with recorded levels in 2009 and 2010 near or above the BC Drinking Water Quality Guideline of 10 mg nitrate/L.



Source: Environment Canada – Osoyoos Aquifer groundwater monitoring data – 2000 to 2010

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4.2 Regulation of agricultural wastes in other jurisdictions

The ministry commissioned a jurisdictional scan of agricultural waste regulations and guidelines in early 2010 as part of the review process. The scan included Canadian jurisdictions, US states and European Union countries.

Topics addressed in the review included nutrient management regulations, manure storage and application requirements, regulation of on-farm disposal of mortalities, control of odour and air emissions and regulation of emerging technologies and practices (such as anaerobic digestion).

The review found that although the strategies adopted by other jurisdictions vary widely, the issues being addressed are very similar and the goal is the same – to maintain or improve environmental quality, with an emphasis on surface and ground water quality. All jurisdictions surveyed regulate the application of nutrients to agricultural land, based on nitrogen, phosphorous or both. Application limits are based on maximum soil, crop or water nutrient levels, through the use of standards written into legislation, or through the use of qualified professionals and best management practices. Manure application setbacks from watercourses and neighbours are written into legislation in almost all jurisdictions surveyed.

Other findings of the review included:

- ▶ All jurisdictions have introduced new regulations for manure storage.
- ▶ Burial continues to be the standard on-farm disposal option in many jurisdictions with siting restrictions, volume limits and other requirements. However, some have banned on-farm burial. On-farm composting is becoming more common due to concerns about groundwater impacts from burial sites.
- ▶ Several jurisdictions are regulating odours with varying strategies. Alberta producers are required to use odour assessments to determine the required setback of a new barn or manure storage from the property boundary.
- ▶ Several jurisdictions have implemented regulations for the operation of on-farm anaerobic digesters and have introduced regulations requiring the digestate to be land-applied as a nutrient source.

5. Proposed Revisions

The ministry's intentions for revising the AWCR are described in this section of the intentions paper. The ministry is also proposing to phase-in a number of the proposed revisions over a period of one or more years – to provide agricultural operators with notice and sufficient time to meet requirements of the revised regulation. Proposed phase-in timing for specific requirements is described under relevant sections below and summarized in section 5.13.

5.1 Revised definitions

The ministry intends to update definitions in the revised regulation to ensure that they are consistent with ministry policy intentions, current practices and other legislation and regulations.

A. Agricultural operations

The definition of an agricultural operation will be revised to be consistent with the updated definition under the Waste Discharge Regulation.

B. Agricultural wastes

The ministry intends to clarify that the definition of agricultural waste includes all wastes produced by agricultural operations defined in the regulation.

C. Agricultural by-products

The ministry is proposing to include by-products in the revised regulation, such as composted materials, digestate from anaerobic digestion, or other materials from treatment processes.

Other terms and proposed changes to existing definitions are discussed as they relate to the specific sections in this paper.

5.2 On-farm transport of agricultural wastes and by-products

The ministry is considering including requirements for proper containment of agricultural wastes or by-products when being moved on-site (by truck, trailer, tanker or in pipes) or from site-to-site to ensure that no spills or leakage will result in runoff into watercourses, or off the property.

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5.3 Storage of agricultural wastes and by-products

A. Storage facility requirements

The ministry intends to protect surface water and groundwater by addressing leachate generation and runoff from the storage of agricultural wastes and by-products.

The ministry is proposing the following revisions related to storage facility requirements:

- ▶ Expanding the definition of a storage facility to include above ground storage (purpose-built structures), areas under elevated pens (such as pens of fur-bearing animals), confined livestock areas, and below ground storage (such as earthen manure pits and storage lagoons).
- ▶ Repealing the grandfathering clauses in the AWCR that required a plan for storage facilities that existed prior to April 1, 1992.
- ▶ Adding a requirement for agricultural wastes and by-products to be stored in a manner to:
 - prevent entry of precipitation, that can generate leachate, or fill the storage facility beyond capacity, i.e., covered;
 - contain leachate so it doesn't run off into watercourses, i.e., bermed;
 - prevent escape of agricultural waste or by-products, i.e., covered or bermed;
 - divert clean runoff water, i.e., bermed;
 - prevent leaching into groundwater, i.e., on an impermeable surface; and
 - prevent access by, and attraction of, wildlife, domestic animals, birds and associated vectors.
- ▶ Establishing 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.
- ▶ For agricultural operations over a certain size or intensity threshold (e.g., over 400 animal units per hectare, or with over 30 tonnes per year of agricultural waste), storage facilities would be required to have a qualified professional to design and supervise, or sign-off on the building and construction of a storage facility.

One concern that needs to be addressed is when a storage facility (e.g., manure pit, lagoon) is full at an unsuitable

time for beneficial land application. The ministry is proposing the following requirements:

- ▶ Minimum one year's storage for agricultural waste;
- ▶ The storage facility must be regularly maintained; and
- ▶ A storage facility should have sufficient capacity to:
 - contain the amount of waste produced until such time as the waste can be applied as a fertilizer or soil conditioner, and
 - prevent overflow from the facility, or the need to apply under inappropriate conditions, such as snow covered, frozen or saturated fields.

The ministry is proposing that storage facilities be monitored and tested to ensure that there is no leakage.

New storage facilities would have to meet requirements for cover (roof), walls and impermeable floor, and 30 metre setback distance from watercourses, as of the date of enactment of the revised regulation. Proposed phase-in dates for existing facilities are listed in Table 1 below.

Table 1. Proposed phase-in dates – existing storage facilities

Proposed Requirement – Existing Storage Facilities	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
Minimum one year's storage	3 years
Must be covered, bermed	1 year
Must have impermeable floor surface	3 years
Integrity testing	3 years
Lagoons must be lined	5 years
30 metre setback distance from watercourses and potable water sources	5 to 7 years
Waste from animals on fur farms (under pen storage) must meet same requirements as storage facilities	3 to 5 years
Proposed Requirement – New Storage Facilities	
Covered, bermed, impermeable floor	Date revised regulation is enacted
30 metre setback distance from watercourses and potable water sources	Date revised regulation is enacted
Qualified professional designed facility	Date revised regulation is enacted

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B. Field storage

The ministry is considering revising requirements for field storage of solid agricultural wastes and by-products. The ministry considers “short term field storage” to be storage of solid agricultural waste or by-products stored on a field (i.e., not within a storage facility) and used within two weeks of placement.

For short term field storage, the ministry is proposing that solid agricultural wastes and by-products be stored in a manner that:

- ▶ Prevents entry of precipitation, i.e., covered;
- ▶ Contains leachate and diverts clean water runoff from the pile, i.e., bermed;
- ▶ Prevents the escape of solid agricultural wastes and by-products, i.e., covered or bermed;
- ▶ If stored over an unconfined aquifer, is stored to prevent leaching into groundwater, i.e., impermeable surface; and
- ▶ Has a minimum setback of 30 metres from any watercourse, any source of potable water or irrigation well.

The ministry is proposing to repeal the provision for long term field storage of up to nine months. Instead, solid agricultural wastes and by-products stored in the field for longer than two weeks would be required to meet the storage facility requirements. Proposed phase-in dates for field storage are listed in Table 2 following.

Table 2. Proposed phase-in dates – field storage requirements

Proposed Requirement – Field Storage	Phase-in Date <small>(period of time from date revised regulation is enacted that requirement is effective)</small>
Short term storage – covered and bermed	Date revised regulation is enacted
Stored for longer than two weeks – must meet storage facility requirements	3 to 5 years
Stored over unconfined aquifer – must be on impermeable surface, covered and bermed	Date revised regulation is enacted

C. “Rainy season” field storage

The ministry is proposing to repeal the October 1st to April 1st “rainy season” requirement and to require that all

materials be stored in a manner that prevents leachate generation, runoff and erosion at all times of the year.

5.4 Storage and use of wood waste

Storage and use of wood waste (defined as hog fuel, mill ends, wood chips, bark and sawdust) are currently addressed in the AWCR. Specific agronomic uses are listed, although there is no maximum quantity set for the use of wood waste on land.

Primary environmental concerns related to handling and uses of wood waste are direct deposit into watercourses, improper storage, excess applications and the formation of wood waste leachate that could enter surface water and groundwater. Wood waste may also contain antisapstain chemicals, wood preservatives or fire retardant chemicals that could be detrimental to the environment. The ministry is considering strengthening the conditions governing the management of wood waste.

A. Wood waste storage

The ministry is proposing that wood waste be stored in a manner that:

- ▶ Prevents entry of precipitation;
- ▶ Contains leachate so it doesn’t run off into watercourses;
- ▶ Prevents the escape of particulate matter or solid matter;
- ▶ Diverts clean runoff water from the pile; and
- ▶ Prevents leaching into soil and groundwater.

Storage and use of wood waste in high risk areas (see section 5.9) would follow same requirements for agricultural waste and by-products in high risk areas.

Proposed minimum setbacks for wood waste storage are 30 metres from any watercourse, any source of potable water or irrigation well, and property boundaries.

The ministry is intending that these provisions (for storage of wood waste) come into force on enactment of the revised regulation.

B. Wood waste use

It is proposed that wood waste not be used within 30 metres of any source of potable water or irrigation well, that wood waste be applied to a maximum depth of 15 cm

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per year in outdoor areas, and that any leachate be contained so it doesn't run off into watercourses, any source of potable water or irrigation well, or beyond property boundaries.

5.5 Composting agricultural waste

The ministry intends to revise provisions addressing the composting of agricultural wastes to maintain consistency with other regulations, to ensure composted materials are fully degraded and to protect the environment and human health.

The ministry is proposing the following requirements for composting and curing of agricultural wastes:

- ▶ The same proposed siting and setback requirements as for the agricultural waste storage facilities.
- ▶ Minimum standards for treating agricultural wastes to ensure they are fully degraded (e.g., minimum temperature and retention times for composting of 40 degrees C or higher – maintained for five days, and curing duration of at least 21 days).
- ▶ Testing of finished composted material (after curing) for nutrient levels (e.g., N, P, K) for quantities over five m³ of composted material produced for nutrient management planning.

The ministry is proposing to repeal section 16 of the current AWCR and to include the requirements for composting mushroom medium under the proposed composting section of the revised regulation.

The ministry is intending that these provisions (for composting and curing sites) come into force on the date the revised regulation is enacted.

5.6 On-farm disposal of mortalities and slaughter & poultry processing (slaughter) wastes

A. Slaughter wastes

Discharge of wastes from slaughter and poultry processing facilities is covered under the Code of Practice for the Slaughter and Poultry Processing Industries (Slaughter) Code. However, slaughter facilities on agricultural operations producing less than five tonnes of red meat and less than 1.5 tonnes poultry meat are exempt from registering under the Slaughter Code and are therefore regulated under the AWCR.

The ministry is proposing to include these small quantities of exempt slaughter wastes under disposal of mortalities. The ministry proposes setting the same requirements for on-farm disposal as those set out in the Slaughter Code for composting, burial and incineration. As well, slaughter wastes would be required to be contained prior to disposal, to ensure there is no leakage.

B. Composting mortalities and slaughter wastes

Parameters such as time and temperature requirements for complete degradation by composting may differ between source materials. The ministry is considering establishing specific provisions for the on-farm composting of mortalities and slaughter wastes as distinct from composting agricultural wastes (e.g., manure, vegetative waste) to ensure these materials are fully degraded. The ministry is proposing to adopt the same composting requirements as under the Slaughter Code. See the [FactSheet – composting solid or semi-solid wastes](#) for further information.

C. Burial of mortalities and slaughter wastes

The ministry is proposing to update burial standards to be consistent with landfilling requirements in the Slaughter Code. These include: siting and setback restrictions; and preventing runoff, leaching to groundwater and access by wildlife and other vectors. See the [FactSheet – landfilling solid or semi-solid wastes](#) for further information.

In addition, the ministry is considering setting limits for a maximum number of animals per burial pit or trench (e.g., two cows), or a maximum size of the burial pit or trench.

D. Incineration of mortalities and slaughter wastes

The ministry is proposing to revise the standards for incineration of mortalities to be consistent with requirements in the Code of Practice for the Slaughter and Poultry Processing Industries – for siting, setbacks and operation. See [FactSheet – incineration of solid or semi-solid wastes](#) for further specific information.

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Table 3. Proposed phase-in dates – on-farm disposal of mortalities and slaughter wastes requirements

Proposed Requirement – Disposal of Mortalities and Slaughter Wastes	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
Burial	
4 meters above seasonal high water table and 50 meters from property line	Date revised regulation is enacted
100 metre setbacks from watercourses	Date revised regulation is enacted
300 metres from potable water sources, residences, business, school, hospital, etc.	Date revised regulation is enacted
Covered, prevent access, control fugitive dust and odours	Date revised regulation is enacted
Incineration	
500 metres from residences	Date revised regulation is enacted
1,000 metres from business, school, hospital	Date revised regulation is enacted
Meet emission limits, control fugitive dust and odours	Date revised regulation is enacted
Composting mortalities	
Covered and bermed	Date revised regulation is enacted
Setbacks – 30 metres from watercourses and potable water sources	Date revised regulation is enacted
Impermeable surface	Date revised regulation is enacted

5.7 Access to water in feeding areas

The ministry is proposing revisions to the regulation that will define livestock grazing and seasonal feeding areas and confined livestock areas, and will set requirements for access to watercourses.

A. Livestock grazing areas/seasonal feeding areas

The ministry is proposing that grazing areas and seasonal feeding areas for livestock, poultry and farmed game be operated in a manner that:

- ▶ Does not allow runoff or erosion of agricultural wastes, leachate or soil into watercourses; and

- ▶ Does not have direct access to watercourses in high risk areas (see section 5.9 Table 6).

B. Confined livestock areas

The ministry is proposing to include confined livestock areas within the definition of a “storage facility”. These confined livestock areas would then be subject to the proposed storage facility requirements described in section 5.3.

Agriculture operators would be required to ensure that there is no direct access to watercourses from confined livestock areas.

In the situation of holding areas on rangeland where livestock are held no longer than 72 hours *and* the watercourse is not a source of potable water – agricultural operations would be required to operate in a manner that:

- ▶ Contains leachate;
- ▶ Diverts clean runoff water from the confined area;
- ▶ Does not allow runoff or erosion of agricultural wastes, leachate or soil into watercourses; and
- ▶ Prevents leaching into groundwater.

Table 4. Proposed phase-in dates – access to water in feeding areas requirements

Proposed Requirement – Access to Water in Feeding Areas	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
No runoff, erosion or leachate into water-courses in seasonal feeding or grazing areas	Date revised regulation is enacted
High risk seasonal areas and grazing areas (Lower Mainland) – no direct access to a watercourse	3 years
High risk seasonal feeding areas and grazing areas (Interior) – no direct access to a watercourse	7 years
Confined year-round areas – no direct access to a watercourse	3 years

5.8 Land application of agricultural wastes and by-products

The ministry’s intention is to provide clear and consistent guidance for “general requirements” involving land

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application of agricultural wastes and by-products while encouraging good judgment (e.g., effective nutrient management planning).

The ministry is proposing to define fertilizer and soil conditioner to be consistent with other regulations (such as the Organic Matter Recycling Regulation).

The following general requirements and revisions to the regulation governing all land applications of agricultural waste and by-products are proposed:

- ▶ No direct discharge to surface water or groundwater.
- ▶ No land applications beyond the farm's property boundary or in a manner that allows runoff beyond the farm's property boundary. This could include the need for buffers or setbacks from the property boundary.
- ▶ Land application of nutrients from all sources must consider crop requirements, and be applied only as a fertilizer or a soil conditioner.
- ▶ Land application would not be allowed during certain times and conditions – i.e., on snow covered or frozen ground, in areas with standing water or saturated soils, in windy conditions, or at rates of application that exceed the amount of nutrients required for crop growth.

Some jurisdictions prohibit manure applications on crops grown for human consumption due to food contamination issues. The ministry is considering a requirement that manure not be applied on crops grown for human consumption within 90 days prior to harvest. Comments are being sought on other options to address this concern.

Table 5. Proposed phase-in dates – agricultural waste (manure) application practices requirements

Proposed Requirement – Agricultural Waste (Manure) Application Practices	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
No direct discharge to surface water or groundwater and no applications beyond property boundary	Date revised regulation is enacted
Land application only as a fertilizer or soil conditioner with consideration of crop requirements and all nutrient sources	Date revised regulation is enacted

Proposed Requirement – Agricultural Waste (Manure) Application Practices	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
Prohibited application times and weather conditions	3 years
No application on human food crops within 90 days of harvest	Date revised regulation is enacted

5.9 Nutrient management planning

The ministry intends to implement nutrient management planning for agricultural operations as a tool to reduce risk of harm to the environment, and as a component of good farm management.

The ministry is proposing that all agricultural operations who are land applying agricultural wastes, by-products or other nutrient sources, be required to undertake nutrient management planning to ensure that the land application of nutrients from all sources (manure, composted materials, and fertilizers) do not exceed the crop requirements.

A. Risk-based approach

Comments received during the scoping phase indicate there is a need to identify high risk areas based on climate and environmental concerns, and that more specific requirements need to be put in place to protect these areas.

The ministry is proposing a risk-based approach, whereby nutrient management planning, monitoring and testing and specific land application requirements would be based on potential impact or risk to the environment and human health. Land application in high risk areas, such as in high rainfall areas of the province or over unconfined aquifers, would constitute a higher risk for impact to the environment.

The ministry has reviewed environmental monitoring data and enforcement reviews, as well as agricultural nutrient management planning guidance documents (see, for example, the [Canada-BC Environmental Farm Planning program](#)) to identify factors and potential criteria for establishing risk categories for nutrient management planning requirements. The ministry is seeking comments regarding the applicability and practicality of the factors and potential criteria outlined in Table 6.

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Table 6. Proposed factors and criteria for determining high risk areas for land application

Factor	Criteria
Geography /Climate	▶ High precipitation regions – 600 mm/yr or greater
	▶ Areas over unconfined aquifers, or with high water tables
	▶ Areas with certain soil textures, e.g., coarse/gravelly or sandy soils
	▶ Areas with identified high levels of contaminants
	▶ Areas with ecosystems or species at risk (e.g., red-listed and/or blue-listed species) ¹
Size/Intensity	▶ Confined livestock operations over a certain size (e.g., 400 animal units per hectare) – including all species of livestock and exotics
	▶ Agricultural operations that produce or store over a certain quantity (e.g., over 30 tonnes per year) of agricultural wastes or by-products

Note 1: See Ecosystems and Species at Risk in B.C.: <http://www.env.gov.bc.ca/wld/serisk.htm>

B. Nutrient application assessment

The ministry is proposing a risk-based approach for determining nutrient management planning and application requirements. Agricultural operations that land apply agricultural wastes or by-products would complete a “nutrient application assessment” screening tool to assess whether a more comprehensive Nutrient Management Plan (NMP) is required. The screening tool is being developed jointly by the Ministry of Agriculture and Ministry of Environment, and would assess whether there is an excess of nitrogen and phosphorus in the materials to be land applied for the amount of land available and the crop’s nutrient requirements.

If the screening tool indicates that a NMP is not required, this indicates there is a low risk for over-application of nutrients, and those agricultural operations would not be required to prepare a NMP but would follow the recommended application rate outlined in the nutrient application assessment screening tool. Minimal records proposed to be kept would be actual application volumes and rates, dates of applications, area of land applied on and crops grown.

If the screening tool indicates that a NMP is required, those agricultural operations would be required to prepare and follow a nutrient management plan.

Agricultural operations in areas identified as “high risk” (see Table 6) would not complete the nutrient application assessment screening tool; they would be required to prepare and follow a nutrient management plan.

The ministry recognizes the need for flexibility in nutrient management planning. Although agriculture operations in high risk areas would be required to follow the prepared plan, operators would have options for preparing a NMP:

- ▶ Using a sector-specific (e.g., dairy, orchard, field crops) standardized plan;
- ▶ Following guidelines and documents developed by the Ministry of Agriculture;
- ▶ Applying for an Environmental Farm Plan under the Environmental Farm Planning (EFP) Program; or
- ▶ Having a qualified professional prepare the plan.

The ministry is also seeking comments on the effectiveness of requiring certified custom applicators for specified situations, and suggestions regarding an appropriate certification process.

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Table 7. Proposed phase-in dates – nutrient management planning requirements

Proposed Requirement – Nutrient Management Planning	Phase-in Date <small>(period of time from date revised regulation is enacted that requirement is effective)</small>
Nutrient management planning required	Date revised regulation is enacted
Nutrient application assessment completed	6 months
Nutrient Management Plan completed	1 – 2 years

5.10 Monitoring and testing

An understanding of soil and nutrient conditions, monitored on a regular basis, is a central element of nutrient management planning. The ministry recognizes that many agricultural operations have established monitoring and testing programs and does not wish to impose undue regulatory requirements in situations that do not pose significant potential risk.

The ministry is proposing the following monitoring and testing requirements as part of effective nutrient management planning:

- ▶ Agricultural operations in low risk areas would be required to undertake a baseline soils test prior to first land application and every three years thereafter.
- ▶ When a Nutrient Management Plan is indicated, an agricultural operation would be required to undertake a baseline soils test before the first land application of nutrients, followed by a soils test one year after initial application and at least once every three years subsequently. As well, depending on the quantity involved, the material being land applied would be required to be tested.
- ▶ Agricultural operations in high risk areas would be required to undertake a baseline soils test and testing of the material being land applied for pathogens and nutrients, a soils test in the first fall after application of nutrients, and in the spring and the fall of every year thereafter.

5.11 Record keeping

The ministry is proposing that all agricultural operations maintain any records required under the regulation for a period of at least ten years. This would include completed

nutrient application assessments (for applicable operations) and (for applicable operations) prepared nutrient management plans, nutrient test results of agricultural wastes and by-products, and soil test results. Any required records would have to be made available for review by a ministry official, immediately on request.

5.12 Additional considerations

A. Emerging technologies and waste treatment options

The current AWCR does not specifically address emerging technologies for treatment options (such as anaerobic digestion, or alkaline hydrolysis). The ministry is considering whether the revised regulation should address discharges from emerging practices and include specific provisions addressing new treatment options.

B. Sector specific requirements

The ministry is seeking comments on whether provisions are needed to address environmental impacts associated with sector-specific agricultural wastes such as effluent from greenhouses, food processing wash water or spent growing media.

C. Regulating under a Code of Practice

Under Section 22 of the *Environmental Management Act* and Schedule 2 of the *Waste Discharge Regulation*, agricultural operations are prescribed as acceptable for regulation under a code of practice.

The ministry is proposing that the current *Agricultural Waste Control Regulation* be repealed and a code of practice (as a Minister's regulation) be enacted to provide a consistent and updated regulatory underpinning for the regulation of agricultural operations.

5.13 Phase-in schedule for implementing the revised regulation

It is recognized that agricultural operations will need time to adapt to new or different ways to manage their wastes and to be able to meet the revised requirements. The ministry is proposing a phase-in schedule (see Table 8) to allow agricultural operations sufficient time to comply with the revised regulation. The ministry is seeking comments regarding how specific provisions could be adopted – as well as suggestions regarding a reasonable phase-in schedule.

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Table 8. Summary of proposed phase-in dates for implementation of requirements

Proposed Requirement	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
Existing Storage Facilities	
Minimum one year's storage	3 years
Must be covered, bermed	1 year
Must have impermeable floor surface	3 years
Integrity testing	3 years
Lagoons must be lined	5 years
30 metre setback distance from watercourses and potable water sources	5 to 7 years
Waste from animals on fur farms (under pen storage) must meet same requirements as storage facilities	3 to 5 years
New Storage Facilities	
Covered, bermed impermeable floor required	Date revised regulation is enacted
30 metre setback distance from watercourses and potable water sources	Date revised regulation is enacted
Qualified professional designed facility	Date revised regulation is enacted
Field Storage	
Short term storage - covered and bermed	Date revised regulation is enacted
Stored for longer than two weeks – must meet storage facility requirements	3 to 5 years
Stored over unconfined aquifer – must be on impermeable surface, covered and bermed	Date revised regulation is enacted
Composting and Curing Sites	
Covered, bermed, impermeable surface	Date revised regulation is enacted
30 metre setback from watercourses and potable water sources	Date revised regulation is enacted
Meet minimum temperature and retention times	Date revised regulation is enacted
No direct discharge, prevent access by vectors	Date revised regulation is enacted
Wood Waste Storage and Use	
Covered, bermed, impermeable surface	Date revised regulation is enacted
Maximum 15 cm depth per year	Date revised regulation is enacted
30 metre setback from watercourses, potable water sources	Date revised regulation is enacted
Disposal of Mortalities and Slaughter Wastes	
Burial	
4 meters above seasonal high water table and 50 meters from property line	Date revised regulation is enacted
100 metre setbacks from watercourses	Date revised regulation is enacted
300 from potable water sources, residences, business, school, hospital, etc.	Date revised regulation is enacted

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Proposed Requirement	Phase-in Date (period of time from date revised regulation is enacted that requirement is effective)
Covered, prevent vector access, control fugitive dust and odour	Date revised regulation is enacted
Incineration	
500 metres from residences	Date revised regulation is enacted
1,000 metres from business, school, hospital, etc.	Date revised regulation is enacted
Meet emission limits, control fugitive dust and odour	Date revised regulation is enacted
Composting	
Covered, bermed, impermeable surface	Date revised regulation is enacted
30 metres from watercourses and potable water sources	Date revised regulation is enacted
Access to Water in Feeding Areas	
No runoff or erosion in seasonal feeding or grazing areas	Date revised regulation is enacted
In high risk seasonal areas – no direct access to a watercourse (Lower Mainland)	3 years
In high risk seasonal areas – no direct access to a watercourse (Interior)	7 years
Confined year-round areas – no direct access to a watercourse	3 years
Land Application Practices	
No direct discharge to surface water or groundwater and no applications beyond property boundary	Date revised regulation is enacted
Land application only as a fertilizer or soil conditioner with consideration of crop requirements and all nutrient sources	Date revised regulation is enacted
Prohibited application times and weather conditions	3 years
No application on human food crops within 90 days of harvest	Date revised regulation is enacted
Nutrient Management Planning	
Nutrient management planning required	Date revised regulation is enacted
Nutrient application assessment completed	6 months
Nutrient Management Plan completed	1 – 2 years

6. Development of Guidelines and Use of Best Management Practices

The proposed revised regulation may be supported by guidelines and/or best management practices (BMPs) that could provide detailed discussion and direction related to practices and procedures. These practices and procedures may be developed by the agricultural sector and other appropriate parties jointly with government and would not have the force of law. Guidelines or BMPs may be considered as assistance to persons governed by a

regulation in meeting their legal obligations. The ministry is also interested in supporting the development and use of materials that utilize and/or support existing programs and best management practices, such as the Environmental Farm Planning (EFP) Program.

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7. Consultation With First Nations

Information concerning consultation with First Nations with respect to proposed revisions to the AWCR will be developed in accordance with legal requirements, ministry policy and government direction.

8. Awareness, Compliance and Enforcement

A. Awareness and compliance promotion

The ministry will work with agricultural organizations, industry sectors, and other agencies (Ministries of Agriculture, Health, etc.), and through other programs such as the EFP Program, on education and awareness initiatives to ensure producers are aware and understand the revised regulation and requirements.

B. Compliance verification and enforcement

The Ministry of Environment's approach to assuring compliance with the revised regulation will include regular and random compliance reviews and inspections, as well as reviews and inspections in response to identified or potential issues or concerns regarding protection of the environment or human health.

The Ministry of Environment's response to non-compliance includes requests for development of plans, requests for information or monitoring, written advisories, warnings, orders, tickets and prosecutions. The choice of response will be based on ministry-wide policy, the compliance history, and the significance of the impact from the non-compliance occurrence.

9. Providing Comment on the Proposed Intentions

Comments regarding the ministry's intentions are being solicited and will be carefully considered in revising the AWCR.

This intentions paper and a response form based on the proposed revisions to the AWCR have been posted on the [ministry's consultation web site](#).

Those interested are invited to submit comments on the ministry's intentions. The ministry also encourages associations to distribute the intentions paper among their members. All submissions will be reviewed for inclusion in a consultation summary report and comments will be treated with confidentiality by ministry staff and contractors when preparing consultation reports. Please note that comments you provide and information that identifies you as the source of those comments may be publicly available if a Freedom of Information request is made under the *Freedom of Information and Protection of Privacy Act*.

If you have any questions or comments regarding the consultation process, review the information posted on the ministry website, or contact Cindy Bertram of C. Rankin & Associates, who has been contracted to manage consultation comments, at:

Email: cindybertram@shaw.ca

Mail: PO Box 28159 Westshore RPO
Victoria BC V9B 6K8

Fax: (250) 598-9948

Comments to the ministry should be made on or before May 31, 2012.

Thank you for your time and comments!