

Code of Practice for Compost Facilities

Made under the *Environmental Protection and Enhancement Act, RSA 2000, c. E-12* and the Waste Control Regulation (192/96, as amended)

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DRAFT

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DEFINITIONS

- 1(1) All definitions in the *Environmental Protection and Enhancement Act* and associated regulations shall apply, except where expressly defined in this Code of Practice.
- (2) For the purpose of this Code of Practice,
- (a) “*Acceptable Feedstock and Amendment List for Compost Facilities*” means the *Acceptable Feedstock and Amendment List for Compost Facilities* made under this Code of Practice, as amended or replaced from time to time,
 - (b) “Act” means the *Environmental Protection and Enhancement Act*, RSA 2000, c. E-12, as amended,
 - (c) “active composting area” means the physical location where feedstock is processed during the active phase of composting but does not include a curing area,
 - (d) “actively composting material” means material that is undergoing composting in the active composting area,
 - (e) “aerated static pile composting” means a method of composting that:
 - (i) involves mechanically moving air through a compost pile, and
 - (ii) involves minimal or no agitation or turning of the compost pile,
 - (f) “aerobic conditions” means an environment that is conducive to the microbial degradation of organic solid waste in the presence of oxygen,
 - (g) “amendment” means any waste:
 - (i) that is specified as an amendment in the *Acceptable Feedstock and Amendment List for Compost Facilities*, or
 - (ii) has been authorized in writing by the Director for use as an amendment for a specific compost facility,
 - (h) “amendment storage area” means the physical location at a compost facility that is used to store amendments,
 - (i) “animal” means a vertebrate other than a human being or fish,
 - (j) “baseline groundwater quality” means the quality of groundwater, in a particular groundwater zone, that is representative of groundwater prior to the start of composting operations,
 - (k) “certified operator” means an individual who has obtained the required certification under the *Alberta Landfill and Compost Facility Operator Certification Guidelines*, published by the Government of Alberta, as amended or replaced from time to time,

- (l) "Code of Practice" means the *Code of Practice for Compost Facilities*, as amended,
- (m) "compost" means a stable humus-like material produced from composting,
- (n) "composting" means a controlled bio-oxidation process, including a thermophilic phase, of a solid heterogeneous organic substrate, that results in a stable, humus-like material,
- (o) "conceptual hydrogeologic model" means a written representation of the relationship between the site operations, hydrogeologic setting, and the potential contaminant pathways to receptors,
- (p) "curing" means the final stage of composting, in which stabilization of compost continues but the rate of decomposition is slowed to a point where turning or forced aeration of material is no longer necessary,
- (q) "curing area" means the physical location at a compost facility that is used for curing,
- (r) "day" means any period of 24 consecutive hours,
- (s) "dead animal" means dead animal as defined in the Disposal of Dead Animals Regulation (AR 132/2014) as amended,
- (t) "design capacity" means the volume in cubic meters (wet weight) of feedstock that a Class I or Class II compost facility is capable of processing per year,
- (u) "feedstock" means any waste:
 - (i) that is specified as a feedstock or amendment in the *Acceptable Feedstock and Amendment List for Compost Facilities*, or
 - (ii) has been authorized in writing by the Director for use as a feedstock or amendment for a specific compost facility,
- (v) "free air space" means a measure of space between individual particles in a composting pile that are filled with air,
- (w) "fugitive dust" means particulate matter that is generated by, emitted from, or escapes from a Class I or Class II compost facility,
- (x) "groundwater" means groundwater as defined in the *Water Act*,
- (y) "groundwater contamination" means a change in water quality that produces a noticeable or measurable change in groundwater chemistry,
- (z) "groundwater monitoring well" means a water well as defined in the *Water Act*, which is used by a compost facility to measure groundwater levels and

collect groundwater samples for the purpose of physical, chemical, or biological analysis,

- (aa) “groundwater parameter” means any of the parameters listed in Schedule A to this Code of Practice,
- (bb) “groundwater quality control limit” means a concentration of a key indicator parameter above which there is a risk that groundwater quality is impacted by site activities,
- (cc) “hatchery waste” means any or a combination of:
 - (i) broken or unhatched eggs,
 - (ii) unhatched chicks,
 - (iii) membranes,
 - (iv) embryonic fluids, and
 - (v) eggshell,
- (dd) “hydraulic conductivity” means the ease with which a fluid can be transported through a material,
- (ee) “ISO/IEC 17025” means the international standard developed and published by the International Organization for Standardization specifying the management and technical requirements for laboratories, as amended,
- (ff) “in-vessel composting” means a method of composting in which feedstock is completely encapsulated during the active composting process,
- (gg) “leachate” means a liquid that has percolated through or drained from feedstock, actively composting material, compost, or vermicompost,
- (hh) “leaf and yard waste” means plant matter resulting from gardening, horticulture, agriculture, landscaping, or land clearing operations, and includes tree and shrub trimmings, plant remains, grass clippings, leaves, trees, and stumps,
- (ii) “liner” means a continuous layer constructed of natural or man-made materials, beneath or on the sides of a structure or facility, which restricts the downward or lateral migration of the contents of the structure or facility,
- (jj) “manure” means:
 - (i) manure as defined in the *Agricultural Operation Practices Act*, RSA 2000, c. A-7, as amended, and
 - (ii) excreta in liquid or solid form from pets, animals in zoological facilities, and animals in aquaculture facilities,

- (kk) “natural protective layer” means a continuous layer of natural materials, beneath or on the sides of a structure or facility, which restricts the downward or lateral migration of the contents of the structure or facility,
- (ll) “offensive odour” means an odour originating from a compost facility that:
- (i) exceeds any of the Alberta Ambient Air Quality Objectives and Guidelines (2019) as amended or replaced from time to time, or
 - (ii) in the opinion of the Director, an inspector or an investigator, is causing or may cause an adverse effect at a receptor site,
- (mm) “overs” means oversized materials that have not completely decomposed and are removed or screened from compost,
- (nn) “pathogen” means a bacterium, virus, fungus, parasite or other organism that is capable of producing an infection or disease in a human, animal, fish or plant host,
- (oo) “pathogen reduction criteria” means the concentrations, content limits, and other criteria related to pathogens for Category A or Category B compost quality as set out in the *CCME Guidelines for Compost Quality*, published by the Canadian Council of Ministers of the Environment, as amended or replaced from time to time,
- (pp) “person responsible” means person responsible as defined in the Waste Control Regulation,
- (qq) “positive slope” means a slope that encourages positive drainage of water and minimizes ponding,
- (rr) “process water” means any or a combination of:
- (i) run-on,
 - (ii) leachate,
 - (iii) equipment wash down water, and
 - (iv) other wastewater generated at a Class I or Class II compost facility,
- (ss) “processing area” means the feedstock preparation area, the active composting area, and the curing area, inclusively, but does not include the physical locations used for:
- (i) the management of run-off water,
 - (ii) the management of process water, or
 - (iii) the product storage area,

- (tt) “product storage area” means the physical location used to store compost or vermicompost that can be offered, given away, traded, or sold in accordance with the requirements under section 20(1),
- (uu) “qualified professional” means a person who:
- (i) is registered in good standing in Alberta with a professional association and is subject to that professional association’s code of ethics and disciplinary action, and
 - (ii) has acquired the relevant education, work experience, accreditation, and expertise to provide technical advice pertaining to this Code of Practice,
- (vv) “receiving and preparation area” means the physical location at a compost facility where waste is received and temporarily placed for processing prior to active composting,
- (ww) “receptor sites” means sites that may be exposed to odours originating from a compost facility,
- (xx) “residuals” means unwanted non-organic materials that are removed from waste, feedstocks, amendments, actively composting material, or compost, but not does not include overs,
- (yy) “residuals storage area” means the physical location used to store residuals,
- (zz) “retention pond” means a pond that is designed to store process water and run-off from storm events,
- (aaa) “run-off” means any precipitation that falls on or meltwater that drains as surface flow from the:
- (i) receiving and preparation area,
 - (ii) active composting area,
 - (iii) curing area, and
 - (iv) product storage area,
- (bbb) “run-on” means any precipitation that falls on or meltwater that drains as surface flow onto the:
- (i) receiving and preparation area,
 - (ii) active composting area,
 - (iii) curing area, and

- (iv) product storage area,
- (ccc) “specified risk material” means specified risk material as defined in Part I.1 of the Health of Animals Regulations, C.R.C., c. 296, as amended,
- (ddd) “static pile composting” means a method of composting that involves no forced aeration, and limited or no mechanical turning of the compost pile,
- (eee) “subsoil” means the layer of soil directly below topsoil, to a maximum depth of 1.2 metres below the topsoil surface, that consists of the B and C horizons as defined in *The System of Soil Classification for Canada, Third Edition*, published by Agriculture and Agri-Food Canada, as amended or replaced from time to time,
- (fff) “topsoil” means the uppermost layers of soil that consist of the L, F, H, O, and A horizons as defined in *The System of Soil Classification for Canada, Third Edition*, published by Agriculture and Agri-Food Canada, as amended or replaced from time to time,
- (ggg) “water table” means the upper level of groundwater, below which the pore spaces in the soil or rock are saturated with water;
- (hhh) “water well” means water well as defined in the *Water Act*, as amended,
- (iii) “windrow” means a relatively narrow elongated pile with a triangular or trapezoidal cross-section,
- (jjj) “working surface” means a surface designed to withstand the weight and wear of compost equipment on which processing activities including gridding, mixing, composting, screening or temporary storage of material occur at a compost facility,
- (kkk) “vegetative matter” includes:
 - (i) unprocessed agricultural crop residues produced from farming operations, and
 - (ii) leaf and yard waste,
- (lll) “vermicompost” means a stable hummus-like material produced from vermicomposting,
- (mmm) “vermicomposting” means the mesophilic process of bio-oxidation and stabilization of organic solid wastes by earthworm species, that results in a stable hummus-like material, and
- (nnn) “year” means a calendar year.

COMPLIANCE WITH THIS CODE

- 2(1) This Code of Practice applies to:
- (a) a Class I compost facility that accepts not more than 20,000 tonnes of waste per year for composting, and
 - (b) a Class II compost facility that accepts not more than 20,000 tonnes of vegetative matter or manure per year for composting.

REGISTRATION AND NOTICE REQUIREMENTS

- 3(1) In an application to the Director for registration in respect of a Class I compost facility, a person responsible must include each of the following in writing:
- (a) a completed compost facility checklist, in the form prescribed in Schedule C to this Code of Practice,
 - (b) a completed registration application form, in the form prescribed in Schedule D to this Code of Practice,
 - (c) a facility design plan and specifications, prepared in accordance with section 4,
 - (d) a soil conservation plan, prepared in accordance with section 5,
 - (e) an operations plan, prepared in accordance with section 6,
 - (f) a fire prevention and control plan, prepared in accordance with section 7,
 - (g) an odour management plan, prepared in accordance with section 8,
 - (h) a groundwater monitoring program, prepared in accordance with section 9,
 - (i) a nuisance management plan, prepared in accordance with section 10,
 - (j) a report on baseline groundwater quality that has been established in accordance with section 9(1),
 - (k) financial security, as required under the Waste Control Regulation, and
 - (l) an outline of the intended products to be produced and intended markets.
- (2) In a notice to the Director in respect of a Class II compost facility, a person responsible must include each of the following in writing:
- (a) a completed compost facility checklist, in the form prescribed in Schedule C to this Code of Practice,

- (b) a completed notification form, in the form prescribed in Schedule E to this Code of Practice,
 - (c) a facility design plan and specifications, prepared in accordance with section 4,
 - (d) a soil conservation plan, prepared in accordance with section 5,
 - (e) an operations plan, prepared in accordance with section 6,
 - (f) a fire prevention and control plan, in accordance with section 7,
 - (g) an odour management plan, prepared in accordance with section 8,
 - (h) a nuisance management plan, prepared in accordance with section 10, and
 - (i) an outline of the intended products to be produced and intended markets.
- (3) A person responsible for a Class I compost facility must submit an application to the Director in accordance with subsection (1) for an amendment to an existing registration.

FACILITY DESIGN PLAN AND SPECIFICATIONS

- 4(1) In the facility design plan and specifications, the person responsible must include at least each of the following:
- (a) a design report that describes the:
 - (i) feedstocks and amendments that will be accepted at the compost facility,
 - (ii) composting method that will be used to process feedstock,
 - (iii) maximum capacities, by volume in cubic meters, of the:
 - (i) receiving and preparation area,
 - (ii) amendment storage area,
 - (iii) active composting area,
 - (iv) curing area,
 - (v) product storage area, and
 - (vi) residuals storage area,
 - (iv) maximum lengths, widths, heights and volumes of each windrow or pile of feedstocks, amendments, compost and other materials that will be located in each of the areas listed in subsection (1)(a)(iii),
 - (v) total number of windrows or piles of feedstocks, amendments, compost and other materials that will be located in each of the areas listed in subsection (1)(a)(iii),
 - (vi) orientation of each windrow or pile of feedstocks, amendments, compost and other materials, relative to the grading of each of the areas listed in subsection (1)(a)(iii),

- (vii) physical locations of, and spacing between, each windrow or pile of feedstocks, amendments, compost and other materials that will be located in each of the areas listed in subsection (1)(a)(iii),
- (viii) minimum setbacks from the compost facility's property line for each of the windrows or piles of feedstocks, amendments, compost and other materials that will be located within the compost facility,
- (ix) density ranges of feedstocks and amendments in kilograms per cubic meters that will be processed at the compost facility,
- (x) locations of each fire access lane and fire break at the compost facility,
- (xi) environmental control measures included in the design of the compost facility,
- (xii) monitoring systems included in the design of the compost facility,
- (xiii) design of the liner used for the
 - (i) receiving and preparation area,
 - (ii) active composting area,
 - (iii) curing area, and
 - (iv) process water retention ponds,
- (xiv) design of the liner used for each of the retention ponds,
- (xv) design, including materials and slope, of each working surface,
- (xvi) run-on control system, with, at a minimum, the capability of preventing the flow of water onto developed areas of the compost facility in an amount not less than the peak discharge from a 1-in-25 year storm event lasting 24 hours in duration,
- (xvii) run-off control system, with, at a minimum, the capability of collecting and controlling the volume of run-off expected from a 1-in-25 year storm event lasting 24 hours in duration,
- (xviii) in the case of a Class I compost facility, and unless otherwise authorized in writing by the Director, design of a groundwater monitoring system that, at a minimum, provides for:
 - (i) at least one groundwater monitoring well up gradient of the compost facility within the target monitoring zones identified by a qualified professional in the development of the conceptual hydrogeologic model,
 - (ii) at least two groundwater monitoring wells down gradient of the compost facility within the target monitoring zones identified by a qualified professional in the development of the conceptual hydrogeologic model, and

- (iii) all groundwater monitoring wells to be constructed in accordance with suggested operating procedures outlined in Volumes 1 and 3 of the Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, published in 2016 by the Canadian Council of Ministers of the Environment, as amended from time to time,
 - (xix) in the case of a Class I compost facility, provide a map showing the location(s) of proposed groundwater monitoring wells,
 - (xx) in the case of a Class I compost facility, a description and interpretation of current groundwater elevations, flow, patterns and composition,
 - (b) maps, drawings, and specifications that, at a minimum, include:
 - (i) a site plan or aerial photograph showing the geographic location of the compost facility relative to adjacent developments, residences, potable water sources, domestic water wells, public roadways, and natural water bodies,
 - (ii) topographic site plans showing the overall site development and setbacks from property lines,
 - (iii) cross-sections showing grades and elevations of each working surface, and
 - (iv) cross-sections showing grades and elevations of each retention pond, and
 - (c) a statement that, in the opinion of an independent qualified professional, the site proposed for the compost facility is suitable for composting.
- (2) Unless otherwise authorized in writing by the Director, the person responsible must ensure the processing area of a compost facility is not located:
- (a) within 30 meters of a water body,
 - (b) within 100 metres of a water well (excluding a groundwater monitoring well),
 - (c) within 15 meters of the property line of the compost facility, and
 - (d) within 10 meters of a groundwater monitoring well.
- (3) The person responsible must design the liner referred to in subsection (1)(a)(xiv) in accordance with each of the following:
- (a) the liner must have a separation of at least 1 metre between the seasonally high water table and the bottom of the liner,
 - (b) the liner must have a positive slope that will prevent ponding,
 - (c) the liner must be constructed of:
 - (i) a clayey material with:

- (A) a thickness of at least 0.5 metres measured perpendicular to the liner surface, and
 - (B) a hydraulic conductivity of 1×10^{-9} metres per second or less, or
- (ii) a concrete, asphalt or alternative material that will achieve advective performance equivalent to subsection (3)(c)(i)(B), and
- (d) the liner may be comprised of a natural protective layer only when:
 - (i) the natural protective layer prevents the lateral movement and downward migration of process water,
 - (ii) the natural protective layer is comprised of 2 metres or more of a massive, undisturbed, unfractured fine-grained material with a bulk hydraulic conductivity that is less than or equal to 1×10^{-8} metres per second,
 - (iii) there is at least 1 metre of a material between the bottom of the natural protective layer and the seasonally high groundwater table, and
 - (iv) the natural protective layer has a positive slope that will prevent ponding.
- (4) The person responsible must design the liner for each retention pond, referred to in subsection (1)(a)(xv), in accordance with each of the following:
 - (a) the liner must have a separation of at least 1 metre between the seasonally high water table and the bottom of the liner,
 - (b) the liner must be constructed of:
 - (i) a clayey material with:
 - (A) a thickness of at least 1 metre measured perpendicular to the liner surface, and
 - (B) a hydraulic conductivity of 1×10^{-9} metres per second or less, or
 - (ii) a concrete, asphalt or alternative material that will achieve advective performance equivalent to subsection (4)(b)(i)(B), and
 - (c) the liner may be comprised of a natural protective layer only when:
 - (i) the natural protective layer prevents the lateral movement and downward migration of process water,
 - (ii) the natural protective layer is comprised of 5 metres or more of a massive, undisturbed, unfractured fine-grained material with a bulk hydraulic conductivity that is less than or equal to 1×10^{-8} metres per second, and
 - (iii) there is at least 1 metre of material between the bottom of the natural protective layer and the seasonally high groundwater table.
- (5) Unless otherwise authorized in writing by the Director, the facility design plan and specifications must be signed by an independent qualified professional.

SOIL CONSERVATION PLAN

- 5(1) In the soil conservation plan, the person responsible must include at least each of the following:
- (a) detailed plans to conserve all topsoil and subsoil for reclamation,
 - (b) detailed plans to stockpile topsoil and subsoil in compliance with each of the following:
 - (i) locating topsoil and subsoil stockpiles at the compost facility,
 - (ii) placing topsoil and subsoil stockpiles on stable foundations,
 - (iii) placing topsoil stockpiles on undisturbed topsoil, and
 - (iv) placing subsoil stockpiles on undisturbed subsoil,
 - (c) a map showing the locations where each stockpile referred to in subsection (1)(b) will be located,
 - (d) the content of each of the stockpiles referred to in subsection (1)(b), and
 - (e) the volume of each of the stockpiles referred to in subsection (1)(b).

OPERATIONS PLAN

- 6(1) In the operations plan the person responsible must include at least each of the following:
- (a) a list of the feedstocks that are used in the composting process at the compost facility,
 - (b) policies and procedures for the receipt, inspection, and storage of waste and other materials that meet, at a minimum, the following requirements:
 - (i) all waste received at the compost facility must be visually inspected,
 - (ii) any and all materials that are not feedstocks or amendments must be removed from the waste and segregated for disposal at a waste management facility authorized under the Act,
 - (iii) any material removed under subsection (1)(b)(ii) must not be stored at the compost facility for more than five days, or in quantities greater than 15 cubic meters, whichever occurs first,
 - (iv) within 48 hours of arriving at the compost facility, waste must be:

- (A) processed to remove any and all materials that are not feedstocks or amendments, and
 - (B) incorporated into an active composting pile,
- (v) if the requirements of subsection (1)(b)(iv) cannot be met, waste must be covered with a biocover or waterproof cover that:
- (A) provides at least 1.8 metres (or 6 feet) of overlap of adjacent covers, and
 - (B) is securely anchored.
- (c) a description of how waste that has a high moisture content or has a high potential for creating an offensive odour will be managed upon arrival at the compost facility,
- (d) a description of how feedstock that has a high moisture content or has a high potential for creating an offensive odour will be managed during the composting process,
- (e) procedures describing how residuals will be handled,
- (f) identification of the specific waste management facility at which residuals will be disposed,
- (g) site security and public access control procedures,
- (h) a site safety and emergency response plan,
- (i) a maintenance program for working surfaces,
- (j) a composting process plan, including:
- (i) a description of the composting method or technology used,
 - (ii) procedures for maintaining aerobic conditions continuously,
 - (iii) corrective measures for eliminating offensive odours,
 - (iv) a pathogens reduction plan, in accordance with the requirements set out in section 17,
 - (v) a composting process monitoring plan that includes details regarding the monitoring of:
 - (A) temperature,
 - (B) carbon-to-nitrogen ratio,
 - (C) moisture, and
 - (D) free air space,
 - (vi) quality assurance and quality control processes,
 - (vii) procedures for curing,

- (viii) procedures for the storage and management of compost, which must be in accordance with the following:
 - (A) individual storage piles must not exceed either 5000 cubic metres in volume or 8 meters in height,
 - (B) a clear aisle of not less than 3 meters must be maintained between adjacent storage piles,
 - (C) the moisture content of compost must be managed to prevent the generation of odours and fugitive dust, and
 - (D) compost must be stored at a moisture level of between 35 per cent and 50 per cent, by weight, and
 - (ix) procedures for preventing the re-growth of pathogens in compost,
 - (k) a product quality testing and verification plan, in accordance with the requirements set out in sections 19 and 20,
 - (l) process water management procedures including:
 - (i) detailed plans for monthly monitoring of water levels in each retention pond, and
 - (ii) detailed plans for monthly process water reuse or removal to a wastewater treatment facility, and
 - (m) procedures for the handling and disposal of residuals.
- (2) In the case of a Class I compost facility, in the operations plan referred to in subsection (1), the person responsible must also include at least each of the following:
- (a) a liner inspection and maintenance program, and
 - (b) a groundwater monitoring program, in accordance with section 9.

FIRE PREVENTION AND CONTROL PLAN

- 7(1) In addition to the requirements of the Alberta Fire Code (2019), as amended, the fire prevention and control plan must include at least each of the following:
- (a) the actions that will be taken at all times to prevent all combustible materials from coming into contact with all ignition sources, including but not limited to cutting and welding, static electricity discharges, and smoking,
 - (b) procedures and schedules for the:
 - (i) regular inspection and monitoring, and
 - (ii) prevention of internal temperatures rising above 70 degrees Celsius,
 of each stockpile of feedstocks, amendments, residuals, compost, and other materials throughout the compost facility,

- (c) the actions that will be taken to prevent the accumulation of each of combustible dust, combustible liquids, flammable liquids, or debris on or around buildings, fences, vegetation, vehicles, stationary equipment, and mobile equipment,
- (d) an access plan that:
 - (i) outlines roadways, aisles, and lanes that, at all times, provide fire control equipment with sufficient access to, around the perimeter of, and within all areas of the compost facility, and
 - (ii) provides sufficient space, at all times, to allow for the teardown of each stockpile of feedstocks, amendments, residuals, compost and other materials,
- (e) a training program for site personnel related to the extinguishing of any fires on or in each stockpile of feedstocks, amendments, overs, residuals, compost and other materials at the compost facility,
- (f) provision for the availability at all times of an adequate supply of water, or alternative product or method, for fire suppression activities, and
- (g) provision for regular inspections of the compost facility by appropriately trained personnel.

ODOUR MANAGEMENT PLAN

- 8(1) In the odour management plan, the person responsible must include, at a minimum, each of the following:
 - (a) a description of all odour control technologies and odour management practices that will be used to prevent and mitigate offensive odours,
 - (b) a method to monitor and detect odours,
 - (c) a procedure to track and document public complaints regarding odours,
 - (d) a procedure to respond to public complaints regarding odours,
 - (e) a map showing the locations and distances to receptor sites within minimum of 450 meters of the compost facility, and
 - (f) an odour contingency response plan to remedy offensive odours originating from the compost facility.
- (2) In the odour contingency response plan referred to in subsection (1)(f), the person responsible must include at a minimum each of the following:

- (a) monitoring, containing, removing, destroying, or otherwise disposing of any substance or thing that is causing an offensive odour, in order to control or prevent the offensive odour from occurring again,
- (b) installing, replacing, or altering any equipment or item, as necessary, in order to control or eliminate an offensive odour,
- (c) constructing, improving, extending, or enlarging any facility, structure, or item, as necessary, in order to control or eliminate an offensive odour, and
- (d) mitigating an offensive odour in accordance with other provisions of the odour management plan referred to in subsection (1).

GROUNDWATER MONITORING PROGRAM

- 9(1) An applicant or a person responsible for a Class I compost facility must use at least one of the following methods to establish baseline groundwater quality:
 - (a) by using historical data,
 - (b) by obtaining groundwater samples from monitoring wells established hydraulically up gradient in nearby physical locations not more than 200 meters from the compost facility site boundary on which composting operations have not taken place, or
 - (c) through the collection and analysis of groundwater samples from groundwater monitoring wells at the compost facility.
- (2) In the groundwater monitoring program the person responsible must include, at a minimum, each of the following:
 - (a) establish groundwater quality control limits for each naturally occurring groundwater parameter using the Shewhart quality control chart method as outlined in the Evaluation of Control Chart Methodologies for RCRA Waste Sites, published by the United States Environmental Protection Agency, 1998, as amended or replaced from time to time,
 - (b) outline a detailed groundwater monitoring program that includes detailed plans for:
 - (i) collection and analysis of groundwater samples, including the frequency of sampling,
 - (ii) monitoring the depth of water at each groundwater monitoring well prior to each sampling event,
 - (iii) collection of representative groundwater samples semi-annually for each groundwater monitoring well for four consecutive years (minimum of 8 sampling events and data points) until groundwater quality trend is established,

- (iv) collection of one representative groundwater sample per year after groundwater quality trend is established and after receiving notice in writing from the Director of no impacts to groundwater quality,
 - (v) laboratory analysis of each groundwater sample for each groundwater parameter as set out in Schedule A, and
 - (vi) laboratory analysis of each groundwater sample for any additional parameters that are specified in writing by the Director, and
 - (vii) The groundwater monitoring data shall be presented using control charts and interpreted by a qualified professional to determine any groundwater quality impacts as a result of the compost facility operations,
- (c) outline a groundwater response plan that include, at a minimum, each of the following:
- (i) measures to address any exceedances of any groundwater parameter, and
 - (ii) measures to prevent adverse effect or further adverse effect to groundwater quality,
- (d) the groundwater response plan must meet the following outcomes:
- (i) the release of contamination into the environment is immediately stopped,
 - (ii) the extent and spread of the contamination to soil and groundwater is understood,
 - (iii) further spread of contamination to groundwater is controlled,
 - (iv) reasonable efforts are taken to remove contamination from the environment, and
 - (v) any other objectives identified in writing by the Director.
- (3) The groundwater monitoring program must be signed by a qualified professional.

NUISANCE MANAGEMENT PLAN

- 10(1) In the nuisance management plan, the person responsible must include at a minimum each of the following:
- (a) actions that will be taken to prevent and control nuisances, including but not limited to litter, wildlife, noise, weeds, disease vectors, and dust,
 - (b) litter controls that accomplish each of the following:
 - (i) prevent the escape of litter from the compost facility,

- (ii) prevent litter from being washed, blown, or otherwise transported onto a property adjacent to the compost facility, and
 - (iii) provide for the retrieval of litter that has been washed, blown, or otherwise transported onto a property adjacent to the compost facility, with the consent of the property owner,
- (c) manage the storage of feedstocks, amendments, residuals, compost and other materials to minimize disease vectors,
- (d) manage the composting process to minimize disease vectors,
- (e) establish and maintain weed controls to prevent the accumulation of weeds at the compost facility, and
- (f) provide for the establishment of artificial barriers, the use of natural barriers, or other effective measures, in order to:
- (i) control access to the compost facility,
 - (ii) prevent the attraction of wildlife to the compost facility, and
 - (iii) prevent the uncontrolled deposit of wastes or other materials on the site of the compost facility.

COMPOSTING METHODS

- 11(1) Unless otherwise authorized in writing by the Director, the person responsible must use only the following composting methods:
- (a) a windrow composting process that complies with each of the following:
- (i) the establishment, carbon to nitrogen ratio, moisture content, free air space, and turning frequency of windrows must ensure that controlled biological decomposition under aerobic conditions is maintained at all times throughout the composting process,
 - (ii) each windrow must be constructed parallel to the slope of the land at the compost facility, and
 - (iii) each windrow:
 - (A) must not exceed a height of 4 meters, and must not exceed a width of 8 meters as measured at the windrow's base, or
 - (B) must be in a configuration that is authorized in writing by the Director,
- (b) an in-vessel composting process undertaken such that the construction, loading, carbon to nitrogen ratio, moisture content, free air space, and aeration rate ensure that controlled biological decomposition in which aerobic conditions is maintained at all times throughout the composting process,

- (c) an aerated static pile composting process, undertaken such that the establishment of aerated static piles, aeration system, aeration rate, carbon to nitrogen ratio, free air space and moisture content ensure that controlled biological decomposition under aerobic conditions is maintained throughout the composting process,
 - (d) a static pile composting process, undertaken consistent with the following:
 - (i) the establishment, carbon to nitrogen ratio, moisture content, and turning frequency of static piles must ensure that managed biological decomposition under mainly aerobic conditions is maintained throughout the composting process,
 - (ii) sufficient free air space must be maintained in the static piles,
 - (iii) static piles must be turned at least two times per year, and
 - (iv) static piles must not exceed a height of 5 metres,
 - (e) a vermicomposting process, undertaken consistent with the following:
 - (i) the establishment, placement, and maintenance of vermicomposting beds, bins, and batch reactor systems must ensure the survival of earthworms, and
 - (ii) the process must be managed to achieve the pathogen reduction requirements set out in Schedule B to this Code of Practice.
- (2) A person who wishes to use a composting method other than one of the methods specified in subsection (1) may request written authorization to do so by submitting to the Director, in writing:
- (a) a description of the alternative composting method that is proposed,
 - (b) an explanation of how the alternative composting method will achieve each of the following:
 - (i) aerobic conditions at all times,
 - (ii) controlled biological decomposition, and
 - (iii) comply with all other requirements specified in this Code of Practice, and
 - (c) any other information requested in writing by the Director, in the form and manner specified by the Director.
- (3) Upon receipt of a request under subsection (2), the Director must:
- (a) review the request, and
 - (b) respond in writing to the request.

- (4) In authorizing a request made under subsection (2), the Director may attach any conditions to the authorization that the Director believes are necessary.

ACCEPTABLE FEEDSTOCKS AND AMENDMENTS

- 12(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II compost facility must not use any material in composting other than a feedstock or an amendment.
- (2) The Director may at any time, in writing, amend the *Acceptable Feedstock and Amendment List for Compost Facilities*.
- (3) The person responsible for a Class I or Class II compost facility who wishes to use in a composting process a material that is not listed in the *Acceptable Feedstock and Amendment List for Compost Facilities* must submit to the Director, in writing, the following:
- (a) the nature of the proposed material,
 - (b) the nature of the composting process in which the person plans to use for the proposed material,
 - (c) the estimated volume of the proposed material in tonnes that the person wishes to compost during a year,
 - (d) a description of any amendment that the person plans to use in composting the proposed material,
 - (e) details in the following plans, in the case of a new compost facility, or details of how the following plans will be amended, in the case of an existing compost facility, to reflect the use of the proposed material:
 - (i) facility design plan and specifications,
 - (ii) soil conservation plan,
 - (iii) operations plan,
 - (iv) fire prevention and control plan,
 - (v) nuisance management plan,
 - (vi) odour management plan, and
 - (vii) groundwater monitoring program, and
 - (f) any other information requested in writing by the Director, in the form and manner specified by the Director.
- (4) Upon receipt of a request under subsection (3), the Director must:

- (a) review the request, and
 - (b) respond in writing to the request.
- (5) In authorizing a request made under subsection (3), the Director may attach any conditions to the authorization that the Director believes are necessary.

CHANGES TO PLANS AND PERSONS RESPONSIBLE

- 13(1) The person responsible for a Class I or Class II compost facility must submit to the Director, in writing, any proposed change to the
- (a) facility design plan and specifications,
 - (b) operations plan,
 - (c) fire prevention and control plan,
 - (d) nuisance management plan,
 - (e) odour management plan, or
 - (f) groundwater monitoring program,
- if the proposed change represents a fundamental change to the authorized composting activity, or will potentially impact the compost facility's operation or the environment.
- (2) The person responsible for a Class I or Class II compost facility must not implement a proposed change referred to in subsection (1) without written authorization from the Director.
- (3) Upon receipt of a proposed change under subsection (1), the Director must:
- (a) review the proposed change, and
 - (b) respond in writing to the person who submitted the proposed change.
- (4) If the Director authorizes a proposed change referred to in subsection (1), the person responsible for a Class I or Class II compost facility must as soon as practicable:
- (a) record the change in the compost facility's operating record,
 - (b) notify all relevant compost facility personnel about the change, and
 - (c) provide appropriate training to all relevant compost facility personnel regarding the change.

- (5) When there is a change in the person responsible for a Class I or Class II compost facility, the person responsible for a Class I or Class II compost facility must notify the Director, in writing, within 30 days of the change occurring.

CONSTRUCTION OF FACILITIES

- 14(1) No person may commence the construction a new compost facility or the expansion of an existing compost facility until the Director:
- (a) has issued a registration, in the case of a Class I compost facility, or
 - (b) has acknowledged, in writing, the receipt of a notification, in the case of a Class II compost facility.
- (2) The person responsible for a Class I or Class II compost facility must construct a new compost facility, or expand an existing compost facility, in accordance with the plans that have been authorized in writing by the Director, including the:
- (i) facility design plan and specifications,
 - (ii) soil conservation plan,
 - (iii) fire prevention and control plan,
 - (iv) nuisance management plan,
 - (v) odour management plan, and
 - (vi) groundwater monitoring program, and
- any conditions that the Director has specified in writing.
- (3) A person responsible for a Class I or Class II compost facility may, in writing, request written authorization from the Director to construct a new compost facility or expand an existing compost facility in a way that deviates from the requirements in subsection (2).
- (4) Upon receipt of a request under subsection (3), the Director must:
- (a) review the request, and
 - (b) respond in writing to the person who submitted the request.
- (5) If the Director authorizes, in writing, a request referred to in subsection (3), the person responsible for a Class I or Class II compost facility must record the deviation in the compost facility's operating record before undertaking any activity that implements the deviation.

OPERATION OF COMPOST FACILITY

- 15(1) A person responsible for a Class I or Class II compost facility must operate the compost facility in accordance with:
- (a) each of plans that have been authorized in writing by the Director, including the:
 - (i) facility design plan and specifications,
 - (ii) soil conservation plan,
 - (iii) operations plan,
 - (iv) fire prevention and control plan,
 - (v) nuisance management plan,
 - (vi) odour management plan, and
 - (vii) groundwater monitoring program,
 - (b) all other requirements set out in this Code of Practice,
 - (c) any conditions that the Director has specified in writing, and
 - (d) any authorizations that the Director has specified in writing.
- (2) The person responsible for a Class I or Class II compost facility must not accept any of the following waste:
- (a) hazardous waste or hazardous recyclables,
 - (b) dangerous oilfield waste as defined by the Alberta Energy Regulator,
 - (c) biomedical waste,
 - (d) radioactive materials defined as Class 7 by the Transportation of Dangerous Goods Regulations (SOR/2001-286), as amended from time to time,
 - (e) substances regulated by the Canadian Nuclear Safety Commission,
 - (f) explosive materials defined as Class 1 by the Transportation of Dangerous Goods Regulations (SOR/2001-286), as amended from time to time,
 - (g) naturally occurring radioactive waste,
 - (h) car wash sump wastes,
 - (i) industrial sump wastes,
 - (j) drilling waste as regulated by the Alberta Energy Regulator,

- (k) sulphur waste,
 - (l) hydrovac waste,
 - (m) oil and grease,
 - (n) asbestos waste, and
 - (o) any other material specified in writing by the Director.
- (3) The person responsible for a Class I or Class II compost facility must ensure that the compost facility is supervised by a certified operator during hours of operation.
- (4) The person responsible for a Class I or Class II compost facility must at all times post and maintain, at the entrance to the compost facility, signage that includes:
- (a) the name of the person responsible for the Class I or Class II compost facility,
 - (b) telephone numbers for:
 - (i) the 24-hour emergency contact for the compost facility,
 - (ii) the local fire department, and
 - (iii) Alberta Environment and Parks (1-800-222-6514), and
 - (c) the hours of operation of the compost facility, and
 - (d) a notice that no person may dispose of waste, feedstocks or amendments at the facility outside of operating hours.
- (5) In implementing the soil conservation plan referred to in subsection (1)(a)(ii), the person responsible for a Class I or Class II compost facility must:
- (a) prevent erosion of topsoil and subsoil stockpiles, including:
 - (i) revegetating the stockpiles, and
 - (ii) any other steps that the Director has specified in writing,
 - (b) immediately suspend the conservation of topsoil or subsoil when wet or frozen field conditions will result in mixing, loss, or degradation of soil, and
 - (c) recommence the conservation of topsoil or subsoil when the conditions referred to in subsection (5)(b) no longer exist.
- (6) In the event of a fire at or in the compost facility, the person responsible for a Class I or Class II compost facility must:

- (a) implement each part of the fire prevention and control plan referred to subsection (1)(a)(iv),
 - (b) make available appropriate material handling equipment for moving feedstocks, amendments, residuals, compost and other materials during fire-fighting operations,
 - (c) undertake any procedures or actions specified by the local fire authority, and
 - (d) undertake any procedures or actions specified in writing by the Director.
- (7) The person responsible for a Class I or Class II compost facility must compile each composting recipe such that the initial material mix results in the following conditions:
- (a) a bulk density of less than 700 kilograms per cubic metre,
 - (b) a pH in the range of 6 to 8, and
 - (c) a moisture content of between 40 per cent and 60 per cent, inclusively.
- (8) The person responsible for a Class I or Class II compost facility must operate the compost facility so as not to exceed:
- (a) the design capacity of the compost facility that is authorized in writing by the Director,
 - (b) the maximum capacity that is authorized in writing by the Director for each of the:
 - (i) amendment storage area,
 - (ii) receiving and preparation area,
 - (iii) active composting area,
 - (iv) curing area,
 - (v) product storage area, and
 - (vi) residuals storage area.
- (9) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II compost facility must not dispose of or use sediments or process water from the retention pond in any manner other than the following:
- (a) disposed of at a wastewater treatment facility authorized under the Act,
 - (b) used in a land application in accordance with the *Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Lands* published by Alberta Environment, as amended, or
 - (c) incorporated into actively composting material at the compost facility.

COMPOSTING OF DEAD ANIMALS

- 16(1) The person responsible for a Class I compost facility must not accept deadstock cattle and cattle parts designated as specified risk materials (SRM) for composting unless the person has obtained a Canadian Food Inspection Agency (CFIA) permit, and follows all the CFIA composting, labelling and distribution requirements for SRM.
- (2) The person responsible for a Class I compost facility must, upon accepting a dead animal not containing SRM at the compost facility, either:
- (a) immediately incorporate the dead animal into an active composting area, in accordance with this section, or
 - (b) as soon as practicable, dispose of the dead animal at a waste management facility authorized under the Act.
- (3) Unless otherwise authorized in writing by the Director, when incorporating a dead animal into an active composting area, the person responsible for a Class I compost facility must, at a minimum, do each of the following:
- (a) prepare a bed of material that is at least 60 centimeters in depth and comprised of carbon-rich amendment,
 - (b) lay the dead animal at the centre of bed referred to in subsection (2)(a),
 - (c) cover the dead animal with a layer of material that is at least 60 centimeters in depth and comprised of carbon-rich amendment,
 - (d) continue to fashion the composting pile, as necessary, by layering each dead animal in the composting pile separately, with each layer separated by a cover referred to in subsection (3)(c), and
 - (e) use a sufficient amount of the amendment referred to in subsections (2)(a) and (2)(c) so that the volume of the dead animal does not exceed 25 per cent of the total volume of the composting pile.
- (4) The person responsible for a Class I compost facility must:
- (a) ensure that the each pile referred to in subsection (2) is not disturbed in any way for at least 90 consecutive days from the date on which each dead animal was placed,
 - (b) after the time period referred to in subsection (3)(a), visually examine a pile referred to in subsection (2) to determine whether the pile needs to be turned or mixed based upon:
 - (i) the degree to which the dead animal have degraded, and
 - (ii) the presence or absence of offensive odors, and
 - (c) continue the composting process by repeating the steps outlined in subsections (3)(a) and (3)(b) until:

- (i) no soft animal tissue is present,
 - (ii) no offensive odours are present,
 - (iii) no bones or bone fragments larger than 15 centimeter in dimension are present, and
 - (iv) no other animal matter larger than 2.5 centimeter in dimension is present.
- (5) The person responsible for a Class I compost facility must ensure that windrow piles containing dead animals do not exceed:
- (a) 2.1 meters in height, or
 - (b) 3.6 metres in width, as measured at the base of the windrow.
- (6) The person responsible for a Class I compost facility must ensure that the use of compost generated from dead animals will not:
- (a) cause or contribute to the spread of disease,
 - (b) cause scavenging, or
 - (c) create a nuisance.
- (7) In the event that the composting of dead animals cannot be effectively managed in accordance with the requirements in this Code of Practice, then the person responsible for a Class I compost facility must, as soon as possible,
- (a) cease the use of dead animals as feedstock,
 - (b) cease acceptance of dead animals at the compost facility,
 - (c) dispose of any dead animals at a waste management facility authorized under the Act,
 - (d) dispose of, at a waste management facility authorized under the Act, any actively composting material that is derived from dead animals, and
 - (e) dispose of, at a waste management facility authorized under the Act, any compost that is derived from dead animals.
- (8) The person responsible for a Class I compost facility must cease accepting dead animals as feedstock upon receipt of written notice from the Director.

PATHOGEN REDUCTION

- 17(1) Unless otherwise authorized by the Director in writing, the person responsible for a Class I or Class II compost facility must manage a composting process to reduce the presence of pathogens by doing, at a minimum, each of the following:
- (a) for an in-vessel composting process, maintain the actively composting material at a temperature of at least 55 degrees Celsius for at least three consecutive days,
 - (b) for an aerated static pile composting process:
 - (i) maintain the actively composting material at a temperature of at least 55 degrees Celsius for at least three consecutive days,
 - (ii) during the period referred to in subsection (1)(b)(i), cover the aerated static pile with a layer of insulating material, such as compost or wood chips, having a depth of not less than 15 centimetres, and
 - (iii) during the period referred to in subsection (1)(b)(i), apply the insulating material referred to in subsection (1)(b)(ii) so that the actively composting material is completely covered,
 - (c) for a windrow composting process:
 - (i) maintain the actively composting material at a temperature of at least 55 degrees Celsius for at least 15 consecutive days, and
 - (ii) during the period referred to in subsection (1)(c)(i), turn the windrow at least five times.
- (2) The temperature requirements specified in subsection (1) refer to the lowest temperature measured in the actively composting material each day.
- (3) The person responsible for a Class I or Class II compost facility must ensure that no:
- (a) process water, or
 - (b) other sources of moisture that may contain pathogens,
- are added to the actively composting material during any of the periods and requirements specified in subsection (1).
- (4) The person responsible for a Class I or Class II compost facility must establish and maintain a written record of pathogen reduction activities, including:
- (a) measured temperatures of actively composting materials,
 - (b) dates and times at which those temperatures were measured, and
 - (c) details regarding the turning of windrows or piles, as applicable.

- (5) The person responsible for a Class I or Class II compost facility may request authorization from the Director to use an alternative to the requirements in subsection (1) by submitting to the Director, in writing:
 - (a) an explanation of the alternative that the person proposes to use, and
 - (b) evidence that the proposed alternative will achieve a reduction in pathogens equivalent to that achieved using the applicable requirement in subsection (1).
- (6) Upon receiving a request under subsection (5), the Director must:
 - (a) review the request, and
 - (b) respond in writing to the person who submitted the request.
- (7) If the Director issues written authorization for a specific compost facility to use an alternative to the requirements in subsection (1), then the person responsible for that Class I or Class II compost facility must comply with the authorized alternative, including any conditions the Director attaches to the authorization.

ODOUR COMPLAINTS AND RESPONSES

- 18(1) The person responsible for a Class I or Class II compost facility must at all times prevent the production of offensive odours.
- (2) Upon discovering that an offensive odour is being produced from the compost facility, the person responsible for a Class I or Class II compost facility must immediately:
 - (a) implement the odour contingency response plan that forms part of the odour management plan authorized by the Director,
 - (b) take any action specified in writing by the Director, and
 - (c) establish and maintain a written record of:
 - (i) the date on which the offensive odour was discovered, and
 - (ii) the actions taken to reduce, eliminate, or otherwise remedy the offensive odour.
- (3) Upon receiving any report from any person regarding an odour, the person responsible for a Class I or Class II compost facility must do each of the following:
 - (a) investigate the report, and
 - (b) establish and maintain a written record of:
 - (i) the place, date, and time of the report,

- (ii) the name and address of the complainant, if provided,
- (iii) the nature of the report,
- (iv) the actions taken to investigate the report,
- (v) the findings from the investigation of the report, and
- (vi) the actions taken to respond to the report.

MONITORING AND TESTING STANDARDS

- 19(1) The person responsible for a Class I or Class II compost facility must collect, preserve, store, handle, and analyze any sample required to be taken under this Code of Practice in accordance with:
- (a) the *Standard Methods for the Examination of Water and Wastewater*, published by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 1998, as amended or replaced from time to time,
 - (b) the *CCME Guidelines for Compost Quality*, published by the Canadian Council of Ministers of the Environment, 2005, as amended or replaced from time to time,
 - (c) the *Test Methods for the Examination of Composting and Composts*, published by the United States Department of Agriculture and the United States Composting Council, as amended or replaced from time to time, or
 - (d) a method authorized in writing by the Director.
- (2) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II compost facility must have each sample referred to in subsection (1) analyzed in a laboratory that is accredited to the ISO/IEC 17025 standard in respect of the specific parameter to be analyzed.
- (3) Unless otherwise specified in writing by the Director, this section does not apply to samples that are directed to continuous monitoring equipment.

COMPOST AND VERMICOMPOST QUALITY MONITORING AND REQUIREMENTS

- 20(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II compost facility must not offer, give away, trade, or sell any material produced by or brought to the compost facility:
- (a) for use as a soil amendment, or
 - (b) for use in the production of a soil amendment,
- unless that material:

- (c) meets all of the criteria for either Category A or Category B compost quality as set out in the *CCME Guidelines for Compost Quality* published by the Canadian Council of Ministers of the Environment, as amended or replaced from time to time, or
 - (d) meets all of the criteria set out in Schedule B to this Code of Practice.
- (2) Subject to subsection (3), the person responsible for a Class I or Class II compost facility must meet the following requirements:
- (a) at least one representative composite sample of compost material produced at the compost facility must be tested:
 - (i) for each 1000 tonnes, in dry weight, of material produced, or
 - (ii) at least once each year,whichever occurs first, and
 - (b) the composite sample referred to in subsection (2)(a) must be prepared from no fewer than 15 sub-samples that are representative of the entire volume of compost being tested.
- (3) The person responsible for a Class I or Class II compost facility using a vermicomposting process must ensure the following testing requirements are met:
- (a) at least one representative composite of vermicompost produced at the compost facility must be tested:
 - (i) for each 1000 tonnes, in dry weight, of compost that is produced, or
 - (ii) at least once each year,whichever occurs first, and
 - (b) the composite sample referred to in subsection (3)(a) must be prepared from no fewer than 15 sub-samples that are representative of the entire volume of material being tested.
- (4) The person responsible for a Class I or Class II compost facility must receive and verify the analytical results from testing before the compost or vermicompost that is the subject of testing is removed from the compost facility or used on site.
- (5) The person responsible for a Class I or Class II Compost Facility must screen vermicompost to remove earthworms before that vermicompost is removed from the compost facility.

GROUNDWATER QUALITY MONITORING

- 21(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I compost facility must continuously implement and maintain a groundwater monitoring program, throughout:
- (a) the operation of the Class I compost facility, and
 - (b) the final closure of the Class I compost facility.
- (2) Unless otherwise specified in writing by the Director, the person responsible for a Class I compost facility must:
- (a) protected each groundwater monitoring well from damage,
 - (b) keep each groundwater monitoring well in good working condition, and
 - (c) lock each groundwater monitoring well, except when groundwater samples are being taken.
- (3) Unless otherwise authorized in writing by the Director, in the event that a groundwater sample cannot be obtained at a scheduled sampling time due to the improper functioning of a groundwater monitoring well, the person responsible for a Class I compost facility must:
- (a) immediately repair or replace that groundwater monitoring well, and
 - (b) immediately obtain a groundwater sample once the groundwater monitoring well has been repaired or replaced.
- (4) In the event that, during the period referred to in subsection (1),
- (a) groundwater contamination occurs,
 - (b) the measured level of a groundwater parameter displays an increasing trend,
 - (c) the measured level of a groundwater parameter exceeds a groundwater quality control limit,
 - (d) a groundwater parameter that is not naturally present in groundwater is detected in three consecutive sampling events,
- then the person responsible for a Class I compost facility must:
- (e) immediately notify the Director,
 - (f) immediately implement the groundwater response plan and take all necessary and applicable actions under the groundwater response plan,
 - (g) as soon as practicable:

- (i) identify the source or cause of the event referred to in subsections (4)(a), (4)(b), or (4)(c) or 4(d),
 - (ii) remove or control that source or cause,
 - (iii) construct, repair, or replace any structure or item, as necessary, to remedy the event referred to in subsections (4)(a), (4)(b), or (4)(c), or 4(d) and
 - (iv) conduct additional groundwater monitoring to verify that the event referred to in subsections (4)(a), (4)(b), or (4)(c) or 4(d) is being or has been remedied,
- (h) take any other actions that are required under the Act or regulations,
- (i) do any thing that is specified in writing by the Director, and
- (j) provide any information to the Director that is requested in writing by the Director, in the form and manner specified by the Director.

REPORTING AND RECORD KEEPING

- 22(1) The person responsible for a Class I or Class II compost facility must establish and maintain an operating record:
- (a) during the operation of the compost facility, and
 - (b) during the final closure period of the compost facility.
- (2) The operating record referred to in subsection (1) must be in writing and must contain, at a minimum, the following information:
- (a) a copy of the registration or notification related to the compost facility,
 - (b) a current organizational chart of the personnel operating the compost facility,
 - (c) an operation or procedures logbook,
 - (d) the most recent version of the design plan and specifications,
 - (e) a record of public reports, in accordance with section 18,
 - (f) a record of nuisance management activities,
 - (g) monitoring reports, set out in subsection (3)
 - (h) inspection reports,
 - (i) maintenance records,
 - (j) records of contraventions, set out in subsection (4),

- (k) compost and vermicompost product quality reports,
 - (l) tonnage reports, set out in subsection (5), and
 - (m) all annual reports, set out in subsection (7).
- (3) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or II compost facility must record and, for not less than 5 years, retain all of the following information in respect of any sampling conducted or analyses performed in accordance with this Code of Practice:
- (a) the place where the sample was taken,
 - (b) the date and time on which the sample was taken,
 - (c) the dates on which the analysis on the sample was performed,
 - (d) the techniques, methods, or procedures used in analyzing the sample,
 - (e) the name of the person who collected the sample,
 - (f) the name of the person who analyzed the sample, and
 - (g) the results of the analysis.
- (4) In addition to any other reporting requirements under the Act, or regulations under the Act, the person must, upon learning of any contravention of this Code of Practice:
- (a) immediately notify the Director by telephone to the incident reporting line that has been specified by the Director,
 - (b) within seven days of learning of the contravention, submit a report in writing to the Director that contains, at a minimum, the following information:
 - (i) a description of the contravention,
 - (ii) the date of the contravention,
 - (iii) an explanation as to why the contravention occurred,
 - (iv) a legal land description of the location of the contravention,
 - (v) the name of the registered owner or owners of the land on which the contravention occurred,
 - (vi) a summary of all measures and actions taken to mitigate any effects of the contravention,
 - (vii) the registration or notification number of the compost facility, as provided by the Director,

- (viii) the name of the person who held the registration or notification number at the time when the contravention occurred,
 - (ix) the names, job titles, addresses, and contact information of all persons who were operating, managing or in control of the site at the time of the contravention,
 - (x) a summary of proposed measures to prevent similar contraventions from occurring in the future, and a schedule for implementation of those measures,
 - (xi) any information recorded in accordance with this Code of Practice in relation to or as a result of the contravention, and
 - (xii) any other information required in writing by the Director,
- (c) record and, for a period of not less than five years, retain, the information in subsection (4).
- (5) The person responsible for a Class I or Class II compost facility must, each year:
- (a) prepare, in writing, a tonnage report that contains, at a minimum, the following information:
 - (i) the total number of tonnes, by wet weight, of waste accepted by the compost facility during the year,
 - (ii) the total number of tonnes, by wet weight, of compost produced by the compost facility during the year,
 - (iii) the total number of tonnes, by wet weight, of vermicompost produced by the compost facility during the year,
 - (iv) the total number of tonnes, by wet weight, of compost that is used, sold, or given away by the compost facility during the year,
 - (v) the total number of tonnes, by wet weight, of vermicompost that is used, sold, or given away by the compost facility during the year, and
 - (vi) the total number of tonnes, by wet weight, of residuals disposed of by the compost facility during the year,
 - (b) submit the tonnage report to the Director, in the form and manner specified by the Director, no later than March 31 following the year on which the tonnage report is based.
- (6) In preparing the tonnage report referred to in subsection (5), the person responsible for a Class I or Class II compost facility must:
- (a) use information and records from certified vehicle weigh scales, wherever possible, and

- (b) where information and records from certified vehicle weigh scales are not available, use measurements or reasonable estimates of volumes and densities of applicable materials.
- (7) The person responsible for a Class I or Class II compost facility must, each year:
- (a) prepare, in writing, an annual report that contains, at a minimum, the following information:
- (i) a summary of any changes in the person responsible for the Class I or Class II compost facility made during the year,
 - (ii) a summary of any changes in the certified operator of the Class I or Class II compost facility during the year,
 - (iii) an updated personnel training log,
 - (iv) a summary of any changes made to the operations plan, facility design plan and specifications, soil conservation plan, fire prevention and control plan, nuisance management plan, or odour management plan made during the year,
 - (v) for a Class I compost facility, a summary of any changes to the groundwater monitoring program made during the year,
 - (vi) the types and quantities of feedstock processed at the compost facility during the year,
 - (vii) the amounts of compost and vermicompost permanently removed from the compost facility during the year,
 - (viii) the amounts of compost and vermicompost used or stored on site during the year,
 - (ix) in respect of compost and vermicompost produced during the year:
 - (A) records demonstrating pathogen reduction, and
 - (B) copies of reports from testing of compost and vermicompost undertaken pursuant to section 19,
 - (x) records and interpretations of those records in respect of:
 - (A) monitoring of process water,
 - (B) the quality and quantity of process water removed from the compost facility for irrigation or disposal, and
 - (C) the quality and quantity of sediments removed from the retention pond for land application or disposal,
 - (xi) for a Class I compost facility, a tabular and graphical representation of groundwater monitoring records during the year,
 - (xii) a summary of any remedial actions taken at the compost facility for any purpose,

- (xiii) a summary of all incidents of non-compliance at the compost facility during the year, including information on actions taken to return to compliance,
 - (xiv) a summary of nuisance management issues at the compost facility during the year, including information on actions taken to remedy those issues,
 - (xv) a summary of complaints received by the compost facility, including information on actions taken in response to those complaints, and
 - (xvi) for a Class I compost facility, a summary of any adjustments made during the year to financial security, if applicable, and
- (b) place the Annual Report in the Operating Record by March 31 of the year following the year on which the report is based.
- (8) The person responsible for a Class I or Class II compost facility must record and, for a period of not less than five years, retain, the following information for each complaint received by the compost facility:
- (a) the place, date, and time of the complaint,
 - (b) the name, address, and contact information of the complainant,
 - (c) the nature of the complaint,
 - (d) a description of the actions taken to investigate and, if applicable, remedy any issues related to the nature of the complaint, and
 - (e) a description of actions taken to respond to the complaint.
- (9) Upon receiving a request in writing from the Director, the person responsible for a Class I or Class II compost facility must provide to the Director any records, reports, documents, or other information required to be created under this Code of Practice:
- (a) in the form and manner specified in writing by the Director, and
 - (b) within the time limits prescribed in writing by the Director.

FINAL CLOSURE

- 23(1) Within six months of the last day on which a compost facility accepts waste, the person responsible for a Class I or Class II compost facility must submit to the Director, in writing, a final closure plan that includes, at a minimum, the following information:
- (a) a schedule for completion of all activities at the compost facility,
 - (b) a description of the final use for each of the areas of compost facility, if applicable,
 - (c) a description of proposed site restoration procedures, including those in relation to:

- (i) drainage
 - (ii) soil replacement,
 - (iii) erosion control, and
 - (iv) revegetation, where applicable,
- (d) plans for the removal of compost and vermicompost,
- (e) plans for the disposal of residuals and other waste, and
- (f) for a Class I compost facility, plans for the maintenance and operation of groundwater monitoring systems.
- (2) Upon receiving a final closure plan referred to in subsection (1), the Director must:
- (a) review the final closure plan, and
 - (b) respond in writing to the person who submitted the final closure plan.
- (3) After receiving written authorization of the final closure plan from the Director, the person responsible for a Class I or Class II compost facility must:
- (a) implement the final closure plan in accordance with the authorization, and
 - (b) do any other thing specified in writing by the Director.
- (4) The person responsible for a Class I or Class II compost facility must prepare in writing a final closure report that includes, at a minimum, the following information:
- (a) the date of completion of the final closure of the compost facility,
 - (b) a statement that the final closure has been completed in accordance with the final closure plan, along with supporting evidence,
 - (c) a description of any deviations made from the final closure plan and the reasons for those deviations,
 - (d) if applicable, a description of actions that have been or will be taken in relation to:
 - (i) the final use of the closed areas,
 - (ii) drainage restoration,
 - (iii) soil replacement,
 - (iv) erosion control, and
 - (v) re-vegetation, and

- (e) for a Class I compost facility, a groundwater report demonstrating that groundwater parameters do not exceed groundwater quality control limits at the compost facility, along with supporting evidence.
- (5) The person responsible for a Class I or Class II compost facility must file a copy of the final closure report referred to in subsection (4) in the operating record for the year in which final closure is completed.

DEVIATIONS FROM THE CODE OF PRACTICE

- 24(1) A person may request authorization from the Director to deviate from a requirement under this Code of Practice by submitting to the Director, in writing, the following:
- (a) the requirement under this Code of Practice for which a deviation is sought,
 - (b) details regarding how the person wishes to deviate from the requirement,
 - (c) details regarding the processes, methods, responses, and actions the person proposes to undertake in place of the requirement,
 - (d) evidence and other details that demonstrate how the proposed processes, methods, responses, and actions referred to in subsection (1)(c) will achieve an outcome or performance that is equivalent to the outcome or performance that is achieved under the requirement, and
 - (e) any other information that is requested in writing by the Director, in the form and manner specified by the Director.
- (2) Upon receipt of a request under subsection (1), the Director must:
- (a) review the request, and
 - (b) respond in writing to the request.
- (3) In authorizing a request made under subsection (1), the Director may attach any conditions to the authorization that the Director believes are necessary.
- (4) The person responsible for a Class I or Class II compost facility must comply with any authorization issued by the Director, including any conditions attached to that authorization.

TRANSITION FOR EXISTING FACILITIES

- 25(1) Subject to subsection (2), an existing Class I or Class II compost facility must comply with this Code of Practice within 12 months of the date this Code of Practice comes into force.
- (2) An existing Class I compost facility must comply with sections 6(2)(b), 9, 15(1)(a)(vii), and 21 of this Code of Practice within 24 months of the date this Code of Practice comes into force.
- (3) An existing Class I compost facility is exempt from complying with the requirements in Sections 4(3), 4(4), 4(5), 5 and 15 (1)(a)(ii) of this Code of Practice.
- (4) An existing Class II compost facility is exempt from complying with Sections 4, 5, and 15(1)(a)(ii) of this Code of Practice.

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SCHEDULE A

LIST OF GROUNDWATER PARAMETERS

Parameters	Parameters	Parameters
Arsenic, total	Total phosphorus	Total organic carbon
Barium, total	Ammonia	Calcium
Boron, total	Nitrate-Nitrogen	Magnesium
Cadmium, total	Total Kjeldahl Nitrogen	Sodium
Chromium, total	pH	Potassium
Copper, total	Total dissolved solids	Chloride
Iron, total	Electrical conductivity	Sulphate
Lead, total	Chemical oxygen demand	E. coli
Manganese, total		Total coliform
Mercury, total		
Vanadium, total		

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SCHEDULE B

VERMICOMPOST QUALITY CRITERIA

Parameter	Limit
CCME Standards	
Maximum concentration for trace elements	Standards established in the most recent edition of <i>CCME Guidelines for Compost Quality</i> , published by the Canadian Council of Ministers of the Environment as amended.
Foreign matter	
Sharp Foreign matter	
Other Parameters	
Electrical Conductivity	150 – 350 dS/m
pH	6 – 7.4
Boron	< 20 ppm
Carbon	< 300,000 ppm or 30 per cent
Sodium	< 750 ppm
C:N ratio	10:1 to 30:1
Iron	< 15,000 ppm
Manganese	< 700 ppm
Calcium	1 – 3 per cent
Magnesium	0.2 – 0.8 per cent
Phosphorus	0.15 – 1.5 per cent
Sulphur	0.1 – 1.0 per cent
Nitrogen	0.75 – 3 per cent
Potassium	0.4 – 2 per cent
Pathogen Reduction Requirements	
Fecal coliforms	< 1,000 most probable number (MPN) per gram of total solids calculated on a dry weight basis
Salmonella sp.	< 3 most probable number (MPN) per 4 grams of total solids calculated on dry weight basis.

ppm – parts per million

dS/m – decisiemen per metre

SCHEDULE C

COMPOST FACILITY CHECKLIST

The following information is to be submitted with a registration or notification form.

The purpose of this checklist is to ensure the person responsible for the siting and construction of a newly proposed or expanding compost facility has taken the necessary measures to suitably locate the facility according to the *Code of Practice for Compost Facilities*. This includes consultation with municipal planning staff regarding planning and development approvals.

NOTE: This checklist is not intended for compost facilities that are proposed at landfills or wastewater treatment plants where land use is already designated.

1. Name of the proposed facility_____
2. Name of applicant:_____
3. Address:___
4. Email:_____
5. Phone number:___
6. Project Location:___
7. Legal Land Description:___
8. Facility Street Address:___
9. Parcel Size:_____
10. Tentative Facility Construction Start date:_____
11. Start up Date:_____
12. List any provincial registrations, approvals or municipal permits that will be needed for your proposal, (e.g. compost facility registration, development permit, roadside development permit, etc.) and provide the names of local officials you are working with. If you need more space please attach a separate sheet.

Permit:_____
- Officer/Planner's Name:_____
- Permit:_____
- Officer/Planner's Name:_____
13. Attach a site plan, vicinity map, and/or topographic map of the proposed location, if reasonably available.
14. How much land (hectares) will be leased/purchased for your proposal?
15. How much of that land will be used by the compost facility (facility footprint)? If possible, please provide the size of the area designated for receiving, processing, curing, retention pond, and buffer zones.
16. Give a brief description of the type and maximum annual quantity of organic materials that will be composted at this facility. Please included all primary feedstocks and amendments.
17. What general types of soils are found on the site (for example, clay, sand, gravel, peat)?
18. What is the current use of the site?

19. What is the current land use designation of the site?
20. Is the facility within 450 metres from schools, residential housing, hospitals, or food establishments?
 - a. Yes No
21. Identify existing roads or highways serving the site. Show on-site plans, if any.
22. What designated and informal recreational opportunities are in the immediate vicinity?
23. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, rivers, lakes, ponds, wetlands)?
 - a. If yes, describe the type and provide names (if applicable).
24. Will the project require any work within 30 metres of the described bodies of water?
 - a. If yes, please describe
25. Is there a drinking water well within 300 metres from the site?
 - a. Yes No
26. Does the proposed compost facility located within a 100-year floodplain? *Flood risk maps are available from Alberta Environment and Parks.*
 - a. If yes, note the location on the site plan.
27. Will any wastewater be discharged to surrounding land?
28. If so, please provide a general description and indicate the area on the site plan.
29. How deep is the seasonal high water table from the surface?
30. Have you included the information required in Section 5 of this Code of Practice?
 - a. Yes No

The above answers are true and complete to the best of my knowledge.

Print Name: _____ Signature: _____

Date: _____

SCHEDULE D

REGISTRATION APPLICATION FORM FOR CLASS I COMPOST FACILITY

1. General Information

Applicant Name

Mailing Address

Legal Land Description for compost facility

Contact Person

Phone Number

E-mail address

2. Maximum Annual Facility Capacity

What is the maximum annual quantity of feedstocks and amendments that will be accepted at this facility?

3. Technical Information

Please provide the following information as specified in this Code of Practice:

- (a) a compost facility checklist;
- (b) a facility design plan and specifications;
- (c) a soil conservation plan;
- (d) an operations plan;
- (e) fire prevention and control plan;
- (f) nuisance management plan;
- (g) an odour management plan;
- (h) a groundwater monitoring program;
- (i) a baseline groundwater quality report

4. Deviations from Code of Practice

Are you requesting deviations from the Code of Practice for Compost Facilities for environmental setbacks, design, and construction, feedstock accepted, or environmental monitoring?

Yes No

If yes, please fill in section below:

Requested deviation	Yes	No
Environmental setbacks	<input type="checkbox"/>	<input type="checkbox"/>
Facility construction, design plan and specifications	<input type="checkbox"/>	<input type="checkbox"/>
Facility liner	<input type="checkbox"/>	<input type="checkbox"/>
Retention pond liner	<input type="checkbox"/>	<input type="checkbox"/>
Feedstock List	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Sampling and analytical methods	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Groundwater monitoring	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Odour monitoring	<input type="checkbox"/>	<input type="checkbox"/>

Note: Director authorization is required prior to deviating from the Code of Practice for Compost Facilities.

5. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

Please provide:

- (a) Where appropriate, a copy of the field approval issued under section of the *Public Lands Act*.
- (b) The rationale for the compost facility, in writing.

I acknowledge that I have reviewed a copy of the *Code of Practice for Compost Facilities* and that I am bound by the provisions of the *Code of Practice for Compost Facilities*, including any amendments made to the Code subsequent to this date.

Applicant Signature: _____ Date: _____

Date received:

Registered by:

Director's Signature _____ Date: _____

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SCHEDULE E

NOTIFICATION FORM FOR CLASS II COMPOST FACILITY

1. General Information

Applicant Name

Mailing Address

Legal Land Description for compost facility

Contact Person

Phone Number

E-mail address

2. Maximum Annual Facility Capacity

What is the maximum annual quantity of feedstocks and amendments that will be accepted at this facility?

3. Technical Information

Please provide the following information as specified in this Code of Practice:

- (a) a compost facility checklist;
- (b) a facility design plan and specifications;
- (c) a soil conservation plan;
- (d) an operations plan;
- (e) fire prevention and control plan;
- (f) nuisance management plan; and
- (g) an odour management plan;

4. Deviations from Code of Practice

Are you requesting deviations from the Code of Practice for Compost Facilities for environmental setbacks, design, and construction, or environmental monitoring? Yes No

If yes, please fill in section below:

Requested deviation	Yes	No
Environmental setbacks	<input type="checkbox"/>	<input type="checkbox"/>
Facility construction, design plan, and specifications	<input type="checkbox"/>	<input type="checkbox"/>
Facility liner	<input type="checkbox"/>	<input type="checkbox"/>
Retention pond liner	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Sampling and analytical methods	<input type="checkbox"/>	<input type="checkbox"/>
Environmental monitoring: Odour monitoring	<input type="checkbox"/>	<input type="checkbox"/>

Note: Director authorization is required prior to deviating from the Code of Practice for Compost Facilities.

5. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

Please provide:

- (a) Where appropriate, a copy of the field approval issued under section of the *Public Lands Act*

(b) The rationale for the compost facility, in writing.

I acknowledge that I have reviewed a copy of the *Code of Practice for Compost Facilities* and that I am bound by the provisions of the *Code of Practice for Compost Facilities*, including any amendments made to the Code subsequent to this date.

Applicant Signature: _____ Date:

Date received:

Notification received by:

Director's Signature _____ Date:

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