

Fertilizing Residuals Regulation

Environment Quality Act
(chapter Q-2, s. 95.1, 2017, chapter 4)

CHAPTER I SCOPE AND DEFINITIONS

1. This Regulation applies to storage and spreading of fertilizing residuals on a raising site or on a spreading site within the meaning of the Agricultural Operations Regulation (chapter Q-2, r. 26), to certain composting activities on a raising site or on a spreading site, to storage and spreading of fertilizing residuals during a forest development activity within the meaning of section 4 of the Sustainable Forest Development Act (chapter A-18.1), and to other types of uses of fertilizing residuals and certain types of storage of them, in particular for domestic, ornamental horticultural purposes such as mulch, and litter.

It also applies to certain activities where farm products are mixed with fertilizing residuals.

2. Fertilizing residuals are residual materials used to separately or simultaneously maintain or improve plant nutrition as well as the physical and chemical properties and biological activity of the soil.

Despite the first paragraph, animal waste is not recognized as a fertilizing residual within the meaning of this Regulation.

3. In this Regulation, unless the context indicates otherwise,

"agri-food biosolid" means matter from the treatment of agri-food wastewater, having a minimum dryness value of 0.5%. The treatment cannot consist solely of a physical treatment; (*biosolide agroalimentaire*)

"agri-food plant waste" means brewery waste, grape pomace and waste consisting exclusively of fruit and vegetables, originating from the preparation or distribution of food and beverages, from a non-residential sector, sorted on source site and collected in bulk; (*résidu agroalimentaire végétal*)

"agri-food wastewater" means process water, including wash water, from an agri-food plant, before treatment; (*eau usée agroalimentaire*)

"biochar" means a solid resulting from biomass carbonization or from thermochemical conversion of biomass in an oxygen-limited environment; (*biochar*)

"calcitic paper mill residue" means lime sludge, green liquor dregs or residue from lime slaking; (*résidu calcique papetier*)

"de-inking sludge" means a mixture of fibre fines, mineral fillers and absorbed chemicals from paper and cardboard recycling plants; (*boue de désencrage*)

"dried biosolid" means matter resulting from thermal treatment of sludge, having a moisture content less than or equal to 8%; (*biosolide séché*)

"foreign matter" in a fertilizing residual means matter greater than 2 mm in size, either organic or inorganic, from human intervention, other than mineral soils, woody matter, shells and rocks; (*corps étranger*)

"green waste" means bark, leaves, grass, trimmings, garden refuse, shavings, wood chips, sawdust and macrophytes; (*résidu vert*)

"kraft or sulfate process" means a process of converting wood chips into wood pulp in an alkaline NaOH and Na₂S white liquor; (*procédé kraft ou procédé au sulfate*)

"municipal biosolid" means matter from the treatment of municipal wastewater, having a minimum dryness value of 0.5%; (*biosolide municipale*)

"paper mill biosolid" means matter from the treatment of pulp and paper mill process water, having a minimum dryness value of 0.5%; (*biosolide papetier*)

"paper mill biosolid having undergone bacterial lysis treatment" means a paper mill biosolid resulting from acid treatment of secondary biologic sludge where the sludge pH has been reduced to a value less than or equal to 3. The biosolid may be mixed with primary sludge from the same pulp and paper mill; (*biosolide papetier ayant reçu un traitement de lyse bactérienne*)

"protected immovable" means

(1) a built-up lot situated within a built-up area determined by a land use planning and development plan or a metropolitan land use and development plan, except a lot zoned by municipal authorities for industrial purposes;

(2) a building referred to in paragraph 1 of section 2 of the Building Act (chapter B-1.1) situated outside a built-up area, including the 30 m strip around the building, except a building used as a dwelling-house that is situated in a forest area and used from time to time;

(3) the land on which the following are situated:

(a) a recreation, sports or cultural centre;

(b) an outdoor recreation centre or a nature interpretation centre;

(c) a camping establishment described in paragraph 9 of section 7 of the Regulation respecting tourist accommodation establishments (chapter E-14.2, r. 1);

(d) a municipal park or a public beach;

(e) a golf club;

(f) an ecological reserve established under the Natural Heritage Conservation Act (chapter C-61.01); and

(g) a park established under the Parks Act (chapter P-9) or under the Canada National Parks Act (S.C. 2000, c. 32); (*immeuble protégé*)

"rendering plant biosolid" means matter from the treatment of rendering plant wastewater, having a minimum dryness value of 0.5%; (*biosolide d'équarrissage*)

"septic biosolid" means pump out septage, including peat filtering media from domestic wastewater, having a minimum dryness value of 0.5%; (*biosolide de fosse septique*)

"sharp foreign matter " means foreign matter greater than 5 mm in size having a shard, blade or point capable of cutting or puncturing skin; (*corps étranger tranchant*)

"slaughterhouse biosolid" means matter from the treatment of slaughterhouse wastewater, having a minimum dryness value of 0.5%. (*biosolide d'abattoir*)

4. This Regulation applies to the following fertilizing residuals:

(1) a municipal biosolid containing less than 125,000 mg of the following blend: (Al + 0.5 Fe) per kg on a dry basis or containing more than 25% organic matter on a dry basis and less than 150,000 mg of the following blend: (Al + 0.5 Fe) per kg on a dry basis;

(2) a septic biosolid containing less than 125,000 mg of the following blend: (Al + 0.5 Fe) per kg on a dry basis or containing more than 25% organic matter on a dry basis and less than 150,000 mg of the following blend: (Al + 0.5 Fe) per kg on a dry basis;

(3) green waste containing no human feces, animal waste or other animal-related matter and containing no varnished, painted or treated wood, engineered wood or strandboard, plywood or particleboard. It must also contain no propagules, seeds or rhizomes of an invasive exotic species within the meaning of section 6 of the Crop Health Protection Act (chapter P-42.1);

(4) a paper mill biosolid;

(5) de-inking sludge;

(6) calcitic paper mill residue;

(7) ash designated under BNQ 0419-090;

(8) an agri-food biosolid;

(9) a slaughterhouse biosolid;

(10) agri-food plant waste exempt from human feces, animal waste or other animal-related matter;

(11) milk, whey, a whey by-product or white water from cheese making, that are not farm products;

(12) compost;

(13) biomethanation digestate;

(14) leachate from a facility biologically treating organic matter;

(15) matter studied in an agronomic study carried out by a recognized research institution showing that use of the matter improves the productivity or quality of plants or soil in the agro-environmental conditions of Québec or in comparable conditions;

(16) matter that has been shown through germination and development testing of barley to not be toxic and to increase biomass production growth on a dry basis when compared to non-amended soil;

(17) matter having a neutralizing power equal to or greater than a calcium carbonate equivalent of 25% on a dry basis; and

(18) matter having a multiple valorization index (MVI) equal to or greater than 1, calculated using the following equation:

$$MVI = \frac{Dryness}{100} \times \left[\frac{OM}{15} + \frac{NP}{25} + \frac{N\ total + P2O5\ total + K2O\ total}{2} \right]$$

where

Dryness = dryness level of the fertilizing residual expressed as a percentage;

OM = percentage of organic matter in the fertilizing residual on a dry basis;

NP = neutralizing power of the fertilizing residual expressed as a calcium carbonate equivalent percentage on a dry basis;

N_{total} = percentage of total nitrogen in the fertilizing residual on a dry basis;

$P_2O_5_{\text{total}}$ = percentage of total P_2O_5 in the fertilizing residual on a dry basis;

K_2O_{total} = percentage of total K_2O in the fertilizing residual on a dry basis.

For oil, grease and other concentrated fatty substances, the organic matter content is automatically set at 0%.

CHAPTER II

CLASSIFICATION

DIVISION I

CLASSIFICATION CRITERIA

5. For the purposes of the issue of an authorization under section 22 of the Environment Quality Act (chapter Q-2), of designation under section 31.0.6 of that Act of activities eligible for a declaration of compliance, and of designation under section 31.0.11 of that Act of activities exempted from subdivision 1 of Division II of Chapter IV of that Act, fertilizing residuals are classified according to their trace element content (C), their pathogen content (P), their olfactory characteristics (O) and their foreign matter content (E).

6. Fertilizing residuals are classified on the basis of the criteria set out in Tables 1 to 6 in Schedule I which allow their environmental risk to be determined and their use to be restricted on the basis of the following classes:

- (1) Class C2-alternative, C2 or C1, according to trace element content;
- (2) Class P2 or P1, according to pathogen content;
- (3) Class O3, O2 or O1, according to olfactory characteristics; and
- (4) Class E2 or E1, according to foreign matter content.

A fertilizing residual in none of the classes in subparagraphs 1 to 4 of the first paragraph is designated as "non-classified".

The level of restriction associated with the use of fertilizing residuals is determined, from the most restrictive to the least restrictive class, in the following order:

- (1) the "non-classified" designation;
- (2) classes having the figure "3";
- (3) the "C2-alternative" class;

(4) classes having the figure "2"; and

(5) classes having the figure "1".

7. If a fertilizing residual results from a blend of several fertilizing residuals, it is classed in the same class as that assigned to the fertilizing residual in the blend in the most restrictive class.

8. Fertilizing residuals having trace element content lower than or equal to the Class C1 maximum content prescribed for each element, as set out in Table 1 of Schedule I, are classed C1. Fertilizing residuals having trace element content lower than or equal to the Class C2 maximum content prescribed for each element, as set out in Table 1 of Schedule I, and where the content for at least one element is greater than the Class C1 maximum prescribed for that element, are classed C2. Fertilizing residuals having a trace element content for at least one element in Table 1 that is greater than the Class C2 maximum prescribed content for that element, are designated as non-classified.

9. Some fertilizing residuals designated as non-classified on the basis of trace element content may also be classed C2-alternative if they meet the ratios listed in Table 2 of Schedule I.

Despite the first paragraph, a fertilizing residual designated as non-classified cannot be classed C2-alternative if the content of a trace element in Table 1 of Schedule I exceeds the Class C2 maximum content for that element and no ratio exists for the element in Table 2 of the Schedule.

10. Classification on the basis of pathogen content is determined according to the criteria set out in Table 3 of Schedule I.

Fertilizing residuals that do not meet the Class P1 and P2 conditions set out in Table 3 are designated as non-classified.

11. Fertilizing residuals listed as "other fertilizing residuals" in Table 3 of Schedule I that have been thermally treated with complete organic matter combustion are classed P1.

12. Classification according to olfactory characteristics is determined according to the criteria set out in Table 4 of Schedule I. The following fertilizing residuals are designated as non-classified:

(1) a municipal biosolid from a biomethanation process and dewatered using high-speed centrifuges;

(2) a paper mill biosolid from a kraft or sulfate process having a carbon/nitrogen ratio less than 50 and that has not been treated to remove odours; and

(3) a slaughterhouse biosolid after primary treatment.

13. A fertilizing residual may also be classed according to olfactory characteristics using a method different from that in section 12, after the Minister has been shown that the classification is based on criteria from a recognized method and was done by a qualified professional.

14. Classification according to foreign matter content is determined according to Table 5 or on the basis of the classification criteria in Table 6 of Schedule I.

Fertilizing residuals that do not meet the conditions set out in Tables 5 and 6 for Classes E1 and E2 are designated as non-classified.

15. A municipal biosolid and a septic biosolid must have first been screened before any classification using the criteria in Table 6 of Schedule I. The screening must

(1) be performed by having the liquid matter flow under low pressure or by gravity through a bar screen with maximum 1.25 parallel bar spacing and frequent rejection of the retained foreign matter; or

(2) be performed using equipment or technology capable of achieving results equivalent to those obtained under paragraph 1.

16. Leaves may be classified according to the criteria set out in Table 6 of Schedule I if they have first been sorted by a green waste sorting facility.

DIVISION II

SAMPLING

17. Classification of fertilizing residuals is based on analysis of the residual from sampling performed in compliance with this Regulation.

Samples must be analyzed using the parameters in Table 7 of Schedule I according to the type of fertilizing residual sampled.

The minimum sample size to be taken and analyzed in a 12-month period is determined in Table 8 of Schedule I. That size is determined using the analysis parameters in that Table and the total quantity of fertilizing residual produced annually and accumulated per production site, irrespective of the quantity recycled.

18. Despite the criteria in Table 8 of Schedule I, the minimum sample size to be taken of a fertilizing residual for analysis of dioxin and furan content may be reduced to one sample per 24-month period if, for 36 consecutive months immediately preceding the sampling, the analysis results obtained from the sample size required by Table 8 remain below the maximum dioxin and furan content for the class of the fertilizing residual according to Table 1 of Schedule I, and the production process remains unchanged.

19. Despite the criteria in Table 8 of Schedule I, the minimum sample size to be taken of any of the following fertilizing residuals for analysis of dioxin and furan content may be determined on the basis of the frequency set out in the certification protocol under BNQ 0419-090:

(1) ash designated under that standard;

(2) compost or a biomethanation digestate from treatment of a residual, including the fertilizing residual referred to in paragraph 1; and

(3) leachate from treatment referred to in paragraph 2.

20. Despite Table 8 of Schedule I, the minimum sample size to be taken for analysis necessary for trace element classification may be reduced to 50% of the requirements of Table 8 if the fertilizing residual originates from a continuous production process, that process remains unchanged and, for 24 consecutive months immediately preceding the sampling, the analysis results obtained using the sample size required by Table 8 remain below the maximum content for the class of the fertilizing residual according to Table 1 of Schedule I.

21. Every analysis must be accompanied by an analysis certificate signed by a qualified professional.

22. The analysis certificates for any result justifying a sample size smaller than that set out in Table 8 of Schedule I must be appended to the agro-environmental recycling plan prescribed by Division II of Chapter III.

23. The sampling used for the analyses referred to in section 17 must be composite and representative of the fertilizing residual to be analyzed.

24. The sampling to ascertain the presence of salmonella and *E. coli* in fertilizing residuals from continuous production processes must be performed on the basis of one sample per analysis.

25. Each analysis must be performed by a laboratory accredited by the Minister under section 118.6 of the Environment Quality Act (chapter Q-2) and situated in Québec. The parameter analyzed must be within the field of accreditation obtained by the laboratory. In the absence of such a laboratory, the analysis may be performed by a laboratory situated in Québec and accredited by the Bureau de normalisation du Québec to analyze the parameter. If there is no laboratory in Québec accredited to perform the analysis, it may be performed by a laboratory accredited by the Minister for other fields requiring accreditation.

The analyses must be performed using the methods covered by the certification or accreditation issued by the Minister.

26. A sampling of the following fertilizing residuals for verification purposes must be done each year by a person or municipality accredited or certified for that purpose under section 118.6 of the Environment Quality Act (chapter Q-2):

(1) a fertilizing residual from a pulp and paper mill whose annual production volume for the residual is equal to or greater than 500 tonnes on a wet basis;

(2) a municipal biosolid from a mechanized station whose annual production volume for the residual is equal to or greater than 500 tonnes on a wet basis;

(3) a fertilizing residual whose annual production volume is equal to or greater than 5,000 tonnes on a wet basis; and

(4) a fertilizing residual whose volume accumulated by the generator of the residual, including annual production, is equal to or greater than 5,000 tonnes on a wet basis.

The sampling referred to in the first paragraph is intended to verify, through analysis, the classification of the fertilizing residuals concerned, or whether they meet a standard certified by a qualified professional.

A verification report must be produced by the person or municipality described in the first paragraph.

CHAPTER III

STORING, COMPOSTING AND SPREADING OF FERTILIZING RESIDUALS

DIVISION I

GENERAL

27. Spreading of fertilizing residuals is permitted only with a view to soil fertilization and plant cultivation. It can take place only in compliance with an agro-environmental recycling plan established in accordance with Division II of this Chapter.

28. The addition of water or agri-food wastewater to a fertilizing residual is permitted for the purpose of creating a slurry if the slurry is necessary for handling and spreading the fertilizing residual. Agri-food wastewater cannot be from a slaughterhouse, a rendering plant or a plant that processes or prepares foods that include or are likely to include animal products. Agri-food wastewater is considered for the purposes of classification and is classified using the same criteria as for an agri-food biosolid.

29. Blending of fertilizing residuals is permitted only for fertilizing residuals that are not designated as non-classified.

DIVISION II

AGRO-ENVIRONMENTAL RECYCLING PLAN

30. The use of fertilizing residuals is possible only in compliance with an agro-environmental recycling plan established in accordance with this division.

31. The agro-environmental recycling plan must contain all the information necessary to apply it, such as fertilizing residual quantities and spreading methods and periods.

The plan must contain the following information in particular concerning the fertilizing residual:

(1) type of fertilizing residual;

(2) source of the fertilizing residual;

(3) a description of the process generating the fertilizing residual and of any conditioning;

(4) classification of the fertilizing residual and an explanation of the various options retained, if applicable, in accordance with Tables 1 to 6 of Schedule I, to obtain the classification; and

(5) date of the annual verification.

32. The agro-environmental recycling plan must also contain a compilation of analyses of the fertilizing residual to be used. For each parameter to be analyzed, the compilation must contain the following information:

(1) quantity of fertilizing residual produced annually and accumulated by the residual generator, expressed in tonnes on a dry basis;

- (2) sample size analyzed for the 12 or 24 consecutive month period immediately preceding the sampling, if the sampling is done pursuant to section 18;
- (3) sampling method, including sample type, number of samples taken per sampling and date of sampling;
- (4) sample analysis method, for each parameter;
- (5) analysis results for each sample;
- (6) calculation data and value of the parameter obtained from the calculation if a calculation is necessary to determine the parameter value;
- (7) for each parameter to be analyzed, the sample with the highest value;
- (8) annual arithmetic mean of parameter values for chemical parameters, maturity and stability data and total foreign matter;
- (9) annual geometric mean of analysis results for the E. coli pathogen;
- (10) percentage of samples for which analysis results show an absence of salmonella;
- (11) percentage of samples for which the foreign matter analysis result is less than or equal to one piece of sharp foreign matter per 500 ml of fertilizing residual; and
- (12) percentage of samples for which the foreign matter analysis result is less than or equal to 2 pieces of foreign matter greater than 25 mm in length and greater than 3 mm in width per 500 ml of fertilizing residual.

33. The agro-environmental recycling plan must contain a scale plan of the premises on which the activity relating to the use of the fertilizing residual is to be carried out, in compliance with subparagraph c of subparagraph 6 of the first paragraph of section 7 of the Regulation respecting ministerial authorizations and declarations of compliance in environmental matters (*insert the reference to the Compilation of Québec Laws and Regulations*).

The scale plan of the premises must also indicate soil type, land slope, wind rose and prevailing wind direction for each place where the activity is to take place.

The scale plan of the premises must also indicate, if applicable, the boundaries of the intermediate bacteriological and virological protection zones for groundwater withdrawals and the boundaries of the inner protection zone for surface water withdrawals made for human consumption or food processing purposes, delimited in accordance with the Water Withdrawal and Protection Regulation (chapter Q-2, r. 35.2).

34. For an activity involving a Class O3 fertilizing residual, the site location plan must cover an area at least 500 m from the boundaries of the site of the proposed activity.

35. The agro-environmental recycling plan must, to prevent risks to health, include an information program for workers in contact with a Class P2 fertilizing residual.

36. The agro-environmental recycling plan must contain an odour management plan to specifying the various measures that will be implemented in connection with the activity to mitigate the impact of odour on the surroundings, including covering the fertilizing residual, prior liming of the fertilizing residual, a specific period where the fertilizing residual cannot be delivered or disturbed, implementation of self monitoring measures and the keeping of a record of odour-related complaints.

37. A copy of the lease or title of ownership of every parcel, raising site or spreading site on which storage or spreading activities are carried on must be appended to the agro-environmental recycling plan.

38. The plan must be signed by an agronomist or a forest engineer, depending on the activity concerned.

39. An agronomist or a forest engineer, as applicable, must ensure the plan recommendations are carried out and, at the end of the activity, append to the plan a report on the activity that took place.

The report must be sent to the Minister on or before 31 January of the year following the year in which the activity took place.

The requirement under the second paragraph does not apply to the activities referred to in paragraphs 2 to 4, 8, 12 and 14 of section 45 and section 47 of Schedule III to the Regulation respecting ministerial authorizations and declarations of compliance in environmental matters (*insert the reference to the Compilation of Québec Laws and Regulations*).

40. A copy of the plan must be kept by the person carrying on the activity covered by the plan, by the owners of the premises and, if applicable, by any mandatory authorized by the Minister.

The copy of the plan required under the first paragraph must be kept for a minimum period of 5 years after the plan is no longer in effect and, on a request and within the time indicated by the Minister, the owner of the premises or the mandatory authorized by the Minister must provide the plan to the Minister or, if so authorized by the Minister, an overview of it.

41. The signatory to the agro-environmental recycling plan cannot be the same person as the signatory to the verification report for the same fertilizing residual.

DIVISION III

STORAGE

42. A fertilizing residual may not be stored at a distance of less than

(1) 500 m from a dwelling-house or a protected immovable in the case of a Class O3 fertilizing residual;

(2) 100 m from a dwelling-house or a protected immovable in the case of a Class P2 fertilizing residual; or

(3) 75 m from a dwelling-house or a protected immovable in the case of a Class O2 fertilizing residual.

43. A fertilizing residual may be stored within distances shorter than those required by paragraphs 1 and 3 of section 42 if the owner or lessee of the dwelling-house or protected immovable so consents in writing. The agreement must, if applicable, be given by all the owners or lessees of the dwelling-house or protected immovable.

An agreement under the first paragraph must be appended to the agro-environmental recycling plan.

44. Every fertilizing residual storage facility used on a raising site or on a spreading site must satisfy the requirements of the Agricultural Operations Regulation (chapter Q-2, r. 26).

The facility must have received a technical opinion from an engineer in the 5 years preceding its use. The technical opinion must attest to the facility's compliance with the requirements of the Agricultural Operations Regulation.

45. Field storage is prohibited less than 50 m from all wetlands and bodies of water.

46. Field storage of liquid fertilizing residuals or fertilizing residuals having a dryness value of less than 15% is prohibited.

Field storage of fertilizing residuals having a dryness value of less than 30% and that are not paper mill biosolids or encapsulated biosolids is prohibited between 23 November and 31 March.

47. A fertilizing residuals pile must not be placed on snow-covered soil or on land with a slope greater than 5% if the fertilizing residual has a carbon/nitrogen ratio less than 25.

48. Field storage of dried biosolids or gypsum must at all times be covered.

49. A field pile of fertilizing residuals must be encapsulated or covered between 23 November and 31 March, except in the following cases:

(1) pile volume is less than 500 m³ per site;

(2) the pile is surrounded by backfill at least 30 cm thick consisting of peat moss or compost certified under CAN/BNQ 0413-200 or of mature commercial Class O1 compost;

(3) the fertilizing residual is a paper mill biosolid with a carbon/nitrogen ratio greater than or equal to 25, having a dryness value greater than or equal to 25%, or greater than or equal to 20% if the biosolid is a paper mill biosolid having undergone bacterial lysis treatment;

(4) the fertilizing residual is ash having a dryness value greater than or equal to 50; and

(5) the fertilizing residual has a combined total nitrogen and total P₂O₅ content of less than 1% on a dry basis.

50. The covering required under sections 48 and 49 may consist of a roof or tarp, or encapsulation.

The encapsulation must consist of a non-compacted layer of mature commercial compost, de-inking sludge or Class O1 paper mill biosolid at least 30 cm thick.

If a paper mill biosolid or de-inking sludge is used for the encapsulation, that fertilizing residual must have a carbon/nitrogen ratio greater than 70.

51. A field pile of fertilizing residuals may not be situated less than

(1) 100 m from a rock outcrop; or

(2) 100 m from the location of a pile of fertilizing residuals having a carbon/nitrogen ratio less than 25 or from the location of such a pile removed at any time in the last 12 months, if the fertilizing residuals have a carbon/nitrogen ratio less than 25.

52. A field pile of fertilizing residuals must meet the following conditions:

- (1) contaminated water from the pile must not reach any surface water body; and
- (2) runoff water must not reach the pile.

The setting up of the pile must have been recommended and monitored by an agronomist if the fertilizing residual has a carbon/nitrogen ratio less than 25.

53. The maximum volume of a field pile of fertilizing residuals is 500 m³ if their dryness value is less than 20%.

DIVISION IV COMPOSTING

54. Composting of fertilizing residuals may take place only in a storage facility or a composting yard having containment capacity.

55. If the composting is done in a composting yard having containment capacity, the yard must be designed according to the plans and specifications of an engineer and meet the siting standards set out in this Regulation for the storing of a fertilizing residual.

The facility must have received a technical opinion from an engineer in the 5 years preceding its use attesting to the containment capability.

56. The composting of a fertilizing residual must be done according to a composting plan prepared by an agronomist or an engineer. The composting plan must include the following information:

- (1) a description of the composting process;
- (2) a mitigation measures plan for contingent environmental impacts; and
- (3) a monitoring protocol for compost quality control and environmental follow-up.

Every person composting a fertilizing residual must retain the composting plan throughout the entire composting period and for at least 5 years after the activity has ceased. At the Minister's request, the person must provide the composting plan to the Minister within the time the Minister specifies.

DIVISION V
SPREADING

57. The type of fertilizing residual, its source and its classification must be entered in the spreading register kept pursuant to section 27 of the Agricultural Operations Regulation (chapter Q-2, r. 26).

58. The spreading of a municipal biosolid, compost or biomethanation digestate originating entirely or in part from municipal biosolids having a copper content greater than 1,000 mg/kg on a dry basis, or whose zinc content is greater than 1,850 mg/kg on a dry basis, is not permitted on soil that has received at least one spreading of pig slurry in the 5 consecutive years immediately preceding the spreading if the soil has a total copper content greater than 100 mg/kg on a dry basis or a total zinc content, using the Mehlich 3 extraction procedure, greater than 14 mg/kg on a dry basis.

59. The total quantity spread of a Class C2 fertilizing residual must never exceed 13.2 tonnes on a dry basis per hectare over a period of 3 years.

60. The spreading of a Class P2 fertilizing residual, a municipal or septic biosolid, compost or biomethanation digestate originating entirely or in part from such residuals is not permitted on a parcel if the crop cultivated is intended for human consumption, nor on a pasture.

61. The spreading of a Class P2 fertilizing residual on a cultivated parcel must be followed by a period of at least 36 months before a plant intended for human consumption can be cultivated on the parcel. That minimum period is, however, reduced to 14 months if the harvested portion does not come into contact with the soil.

62. The spreading of a Class P2 fertilizing residual on a cultivated parcel must be followed by a period of at least 30 days before a crop on the parcel intended for animal consumption can be harvested.

63. The spreading of a Class P2 fertilizing residual on a cultivated parcel must be followed by a period of at least 12 months before the parcel can become a pasture or sod can be harvested.

64. The spreading of a Class P2 fertilizing residual is not permitted in a peat bog or on soil having an organic matter content greater than 30% on a dry basis of the total of the soil components.

65. The spreading of a Class E2 fertilizing residual is not permitted on a pasture or on a parcel used to cultivate root vegetables.

66. The spreading of a Class E2 fertilizing residual is not permitted on a meadow, except before seeding or before plowing.

67. The spreading of leaves from an autumn bulk or paper bag leaf collection that have not been through a green waste sorting centre must be immediately followed by surface soil cleaning to remove any foreign matter larger than 15 cm.

68. The spreading of fertilizing residuals is prohibited

(1) less than 3 m from wetlands and bodies of water, other than floodplains, or less than the distance set out in municipal by-laws; and

(2) less than 1 m from ditches referred to in subparagraphs 2 to 4 of the first paragraph of section 103 of the Municipal Powers Act (chapter C-47.1) and, where there is a slope, the distance must include a width of at least 1 m at the top of the slope.

Fertilizing residuals must be spread in such manner as to prevent runoff from the residuals reaching the areas described in the first paragraph.

The relative distance to a lake or body of water is measured from the high-water mark and, if there is a slope, the distance must include a width of at least 1 m at the top of the slope. The relative distance to a pond, marsh, swamp and bog is measured from their boundary.

For the purposes of this section, floodplains do not include slopes or banks.

69. Despite section 68, the spreading of fertilizing residuals is prohibited

(1) less than 5 m from a non-agricultural ditch in the case of a Class P2 fertilizing residual;

(2) less than 5 m from a property line and road in the case of a Class P2 fertilizing residual;

(3) less than 50 m from a dwelling-house or protected immovable in the case of a Class P2 fertilizing residual;

(4) less than 500 m from a dwelling-house or protected immovable in the case of a Class O3 fertilizing residual that is not worked into the soil within 6 hours after being spread;

(5) less than 250 m from a dwelling-house or protected immovable in the case of a Class O3 fertilizing residual that is worked into the soil within 6 hours after being spread and is spread using a boom spreader with a drop pipe. That distance is not required if the fertilizing residual is worked into the soil less than 5 minutes after being spread;

(6) less than 75 m from a dwelling-house or protected immovable in the case of a Class O2 fertilizing residual that is not worked into the soil within 6 hours after being spread; and

(7) less than 40 m from a dwelling-house or protected immovable in the case of a Class O2 fertilizing residual that is worked into the soil within 6 hours after being spread and is spread using a boom spreader with a drop pipe. That distance is not required if the fertilizing residual is worked into the soil less than 5 minutes after being spread.

70. Fertilizing residuals may be spread within distances shorter than those required by paragraphs 5, 6 and 7 of section 69 if the owner or lessee of the dwelling-house or protected immovable so consents in writing for the entire duration of the activity. The agreement must, if applicable, be given by all the owners or lessees of the dwelling-house or protected immovable.

An agreement under the first paragraph must be appended to the agro-environmental recycling plan.

71. Fertilizing residuals must be spread on soil that is neither frozen nor covered with snow.

Fertilizing residuals may be spread only between 1 April and 30 September of each year.

Fertilizing residuals may be spread, however, in the period from 1 October to 31 March of each year if justified and recommended by the agronomist or forest engineer who designed the agro-environmental recycling plan used for the activity. The justification and recommendation must be appended to the plan.

72. On soil without plant cover, a fertilizing residual must be worked into the soil less than 48 hours after being spread, except if

(1) the residual has a carbon/nitrogen ratio greater than 30 and a total P₂O₅ content less than 0.25% on a dry basis;

(2) the residual is used as mulch; and

(3) the parcel is direct sowed.

73. Fertilizing residuals must be spread on a parcel with a slope of less than 9%, or less than 5% if the fertilizing residual has a dryness value of less than 15%.

74. Fertilizing residuals must be spread using equipment that satisfies the requirements of section 32 of the Agricultural Operations Regulation (chapter Q-2, r. 26).

75. The spreading of fertilizing residuals must have received agronomic recommendations as to the fertilizing elements in the fertilizing residual, the spreading method and the spreading period, for each cultivated parcel receiving the fertilizing residual.

The agronomic recommendations referred to in the first paragraph must be appended to the agro-environmental recycling plan.

76. The spreading of fertilizing residuals having any of the following characteristics must have received justification for their use and an agronomic recommendation, for each cultivated parcel receiving the fertilizing residual:

- (1) a pH less than 3.5 or greater than 10;
- (2) sodium content greater than 1 mg/kg on a dry basis;
- (3) manganese content greater than 3,000 mg/kg on a dry basis;
- (4) boron content greater than 200 mg/kg on a dry basis; or
- (5) neutralizing power greater than or equal to 25% CCE on a dry basis.

77. The spreading of a fertilizing residual must have received agronomic recommendations as to best management practices for copper and zinc if the fertilizing residual is a municipal biosolid, compost or biomethanation digestate originating entirely or in part from municipal biosolids.

78. Every recommendation referred to in sections 75 to 77 for the spreading of a fertilizing residual must be based on a soil analysis performed by a laboratory accredited by the Minister under section 118.6 of the Environment Quality Act (chapter Q-2).

79. The spreading of any of the following fertilizing residuals is prohibited:

(1) a fertilizing residual designated as non-classified according to one or more of the classification criteria described in section 5;

(2) a fertilizing residual that is not homogeneous; and

(3) a municipal biosolid, paper mill biosolid or septic biosolid from a pond in which an invasive exotic species within the meaning of section 6 of the Crop Health Protection Act (chapter P-42.1) is present.

CHAPTER IV

PUBLIC NOTICE

80. The operator of a forest area in the domain of the State who proposes to spread a fertilizing residual over more than 100 ha in the same administrative region in the same year must, before the work begins, publish a notice describing the work to be carried out in a newspaper circulated in the territory where the work will be carried out or broadcast the notice on a radio or television station in that territory; the notice must contain the following information:

(1) the contact information of the owner or operator in the territory in which the work will be carried out;

(2) the nature and purpose of the work and the place where the work will be carried out;

(3) the time period in which the work will be carried out;

(4) the restrictions on access to the treated premises and on consumption of plants from the premises; and

(5) the contact information of the permit holder responsible for the work.

The permit holder responsible for carrying out the work referred to in the first paragraph may not begin the work until the notice describing the work has been published or broadcast.

81. All activity to which this Regulation applies involving the use of a Class O2 or O3 fertilizing residual must be preceded by written notice to the municipality in which the work is to be carried out. The notice must be sent at least two working days before the activity is to begin and must specify the frequency and times of delivery and spreading of fertilizing residuals.

82. All activity to which this Regulation applies involving the use of a Class O2 fertilizing residual must be preceded by written notice to the owner or lessee of any dwelling-house or protected immovable situated less than 100 m from the place where the activity is to be carried out. The notice must be sent at least seven working days before the activity is to begin and must specify the frequency and times of delivery and spreading of fertilizing residuals.

83. All activity to which this Regulation applies involving the use of a Class O3 fertilizing residual must be preceded by written notice to the owner or lessee of any dwelling-house or protected immovable situated less than 600 m from the place where the activity is to be carried out. The notice must be sent at least seven working days before the activity is to begin and must specify the frequency and times of delivery and spreading of fertilizing residuals.

84. A sign must be posted at each passable road leading to a site where an activity involving the use of fertilizing residuals will be carried out. The sign must contain the following information:

- (1) a description of the fertilizing residuals and their classification;
- (2) the name of the person responsible for the spreading or storage activities;
- (3) the telephone number of the person or the person's representative; and

(4) the telephone number of the appropriate regional branch of the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques.

The first paragraph does not apply to a Class P1 or O1 fertilizing residual if the quantity to be spread per year over the spreading site is less than 150 m³.

85. During the spreading of a Class P2 fertilizing residual on public land or in a private forest, the sign posted pursuant to section 84 must also

- (1) display the following pictogram; and



(2) contain the wording "Interdiction d'accès public et de cueillette jusqu'au :", as well as the date on which the prohibition ends, which must be later than 12 months after the end of the spreading.

The sign must remain posted for the entire duration of the prohibition.

CHAPTER V MONETARY ADMINISTRATIVE PENALTIES

86. A monetary administrative penalty of \$250 in the case of a natural person and \$1,000 in any other case may be imposed on any person failing

(1) to keep a spreading register complying with section 57 and retain it for a minimum period of 5 years after the end of the last spreading period;

(2) to give public notice, as required by sections 80 to 85; or

(3) to send a report on the activity carried out with fertilizing residuals on or before 31 January of the year following the year in which the activity took place, as required by section 39.

87. A monetary administrative penalty of \$350 in the case of a natural person and \$1,500 in any other case may be imposed on any person failing

(1) to keep a copy of the agro-environmental recycling plan throughout the entire duration of the activity and for a minimum period of 5 years after the plan is no longer in effect, as required by section 40;

(2) to append to the agro-environmental recycling plan every written agreement signed by the owner or lessee of a dwelling-house or protected immovable, as required by the second paragraph of section 43;

(3) to retain a copy of the composting plan throughout the entire composting period and for a minimum period of 5 years after the activity has ceased, as required by the second paragraph of section 56;

(4) to append to the agro-environmental recycling plan every written agreement signed by the owner or lessee of a dwelling-house or protected immovable, as required by the second paragraph of section 70;

(5) to append to the agro-environmental recycling plan all agronomic recommendations as to the fertilizing elements in the spreading dosage, the spreading method and the spreading period, for each cultivated parcel receiving the fertilizing residual, as required by the second paragraph of section 75; or

(6) to append to the agro-environmental recycling plan the justification and recommendation as to the spreading of fertilizing residuals between 1 October and 31 March of a year, as required by the third paragraph of section 71.

88. A monetary administrative penalty of \$500 in the case of a natural person and \$2,500 in any other case may be imposed on any person failing

(1) to use fertilizing residuals in accordance with an agro-environmental recycling plan complying with sections 30 to 39 and 41;

(2) to have in the person's possession an agro-environmental recycling plan that contains the information obtained in accordance with sections 5 to 26; or

(3) to obtain the necessary justifications and recommendations before the spreading of fertilizing residuals, as required by sections 75 to 77.

89. A monetary administrative penalty of \$750 in the case of a natural person and \$3,500 in any other case may be imposed on any person spreading fertilizing residuals with equipment that does not satisfy the requirements of section 32 of the Agricultural Operations Regulation (chapter Q-2, r. 26), as required by section 74.

90. A monetary administrative penalty of \$1,000 in the case of a natural person and \$5,000 in any other case may be imposed on any person

(1) failing to store fertilizing residuals in accordance with section 42, the first paragraph of section 43 and sections 44 to 53;

(2) failing to compost fertilizing residuals in accordance with sections 54 and 55 and the first paragraph of section 56; or

(3) spreading leaves from an autumn bulk or paper bag leaf collection that did not go through a green waste sorting centre, without doing the cleaning required by section 67.

91. A monetary administrative penalty of \$1,500 in the case of a natural person and \$7,500 in any other case may be imposed on any person spreading fertilizing residuals

(1) for purposes other than soil fertilization and plant cultivation, as required by section 27;

(2) in a manner that does not comply with sections 58 to 66, section 69 and sections 72 and 73;

(3) in any of the areas referred to in the first paragraph of section 68; or

(4) that are described in paragraphs 1 to 3 of section 79.

92. A monetary administrative penalty of \$2,000 in the case of a natural person and \$10,000 in any other case may be imposed on any person

(1) adding, to a fertilizing residual, agro-food wastewater from a slaughterhouse, a rendering plant or a plant that processes or prepares foods that include or are likely to include animal products, in a manner non-compliant with section 28; or

(2) blending fertilizing residuals that are designated as non-classified with other fertilizing residuals, in a manner non-compliant with section 29.

CHAPTER VI

OFFENCE PROVISIONS

93. Whoever contravenes section 39, 57, 80, 81, 82, 83, 84 or 85 commits an offence and is liable to a fine of \$1,000 to \$100,000 in the case of a natural person and \$3,000 to \$600,000 in any other case.

94. Whoever contravenes section 40, the second paragraph of section 43, the second paragraph of section 56, the second paragraph of section 70, the third paragraph of section 71 or the second paragraph of section 75 commits an offence and is liable to a fine of \$2,000 to \$100,000 in the case of a natural person and \$6,000 to \$600,000 in any other case.

95. Whoever contravenes section 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 75, 76 or 77 commits an offence and is liable to a fine of \$2,500 to \$250,000 in the case of a natural person and \$7,500 to \$1,500,000 in any other case.

96. Whoever contravenes section 74 commits an offence and is liable to a fine of \$4,000 to \$250,000 in the case of a natural person and \$12,000 to \$1,500,000 in any other case.

97. Whoever contravenes section 42, the first paragraph of section 43, section 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54 or 55, the first paragraph of section 56 or section 67 commits an offence and is liable to a fine of \$5,000 to \$500,000 in the case of a natural person and \$15,000 to \$3,000,000 in any other case.

98. Whoever contravenes section 27, 58, 59, 60, 61, 62, 63, 64, 65 or 66, the first paragraph of section 68, section 69, the first or second paragraph of section 71 or section 72, 73 or 79 commits an offence and is liable to a fine of \$8,000 to \$500,000 in the case of a natural person and \$25,000 to \$3,000,000 in any other case.

99. Whoever contravenes section 28 or 29 commits an offence and is liable to a fine of \$10,000 to \$1,000,000 in the case of a natural person and \$30,000 to \$6,000,000 in any other case.

CHAPTER VII

FINAL

100. This Regulation comes into force on the fifteenth day following its publication in the *Gazette officielle du Québec*.

SCHEDULE I
CLASSIFICATION OF FERTILIZING RESIDUALS
(ss. 5 to 11, 13 to 19, 21 and 31)

Table 1 Classification criteria for fertilizing residuals according to trace element content

Trace elements	Units of measurement	Maximum content	
		C1	C2
Arsenic	mg/kg on a dry basis	13	41
Cobalt	mg/kg on a dry basis	34	150
Chrome	mg/kg on a dry basis	210	1,000
Copper	mg/kg on a dry basis	400	1,000
Molybdenum	mg/kg on a dry basis	10	20
Nickel	mg/kg on a dry basis	62	180
Selenium	mg/kg on a dry basis	2.0	14
Zinc	mg/kg on a dry basis	700	1,850
Cadmium	mg/kg on a dry basis	3.0	10
Mercury	mg/kg on a dry basis	0.8	4
Lead	mg/kg on a dry basis	120	300
Dioxins and furans	ng TEQ/kg on a dry basis	17	50

TEQ: 2,3,7,8-tetrachlorodibenzodioxin toxic equivalent

Table 2 C2-alternative classification criteria for fertilizing residuals according to trace element content

Trace elements	C2 alternative		
	Base neutralizing power	Phosphor base (applicable only for fertilizing residuals to be spread on a spreading site or on a raising site)	
		for fertilizing residuals other than municipal biosolids containing > 50,000 mg Al + 0.5 Fe/kg on a dry basis	for municipal biosolids containing > 50,000 mg Al + 0.5 Fe/kg on a dry basis
	Ratio $\frac{FR \text{ neutralizing power}}{FR \text{ trace element content}}$	Ratio $\frac{FR \text{ P205 content}}{FR \text{ trace element content}}$	Ratio $\frac{FR \text{ P205 content}}{FR \text{ trace element content}}$
(% CCE / mg/kg)	(% / mg/kg)	(% / mg/kg)	
Arsenic	> 0.67	> 0.024	> 0.048
Cobalt	> 0.33	> 0.007	> 0.014
Chrome	> 0.047	> 0.001	> 0.002
Copper	> 0.066	> 0.001	> 0.002
Molybdenum	> 2.5	> 0.050	> 0.1
Nickel	> 0.28	> 0.006	> 0.012
Selenium	> 3.6	> 0.07	> 0.14
Zinc	> 0.027	> 0.0005	> 0.001
Cadmium	> 2.5	n/a	n/a
Mercury	> 10.0	n/a	n/a
Lead	> 0.10	n/a	n/a
Dioxins and furans	n/a	n/a	n/a

CCE: Calcium carbonate equivalent

FR: fertilizing residual

Table 3 Classification criteria for fertilizing residuals according to pathogen content

Types of fertilizing residuals	P1 Criteria	P2 Criteria
Paper mill biosolids or De-inking waste	Written statement and proof signed by the head of the mill environmental service, to the effect that no municipal or domestic wastewater is discharged into the industrial wastewater treatment system or that such discharge accounts for less than 0.1% of total industrial water matter, evaluated on a dry basis and Salmonella not detected in $\geq 2/3$ of samples	Written statement and proof signed by the head of the mill environmental service, to the effect that no municipal or domestic wastewater is discharged into the industrial wastewater treatment system or that such discharge accounts for less than 0.1% of total industrial water matter, evaluated on a dry basis
Compost	Salmonella not detected in $\geq 2/3$ of samples and One of the maturity and stability requirements in CAN/BNQ 0413-200 is met	Corresponds to at least one of the following situations: Written statement and proof signed by the person in charge, of a liming treatment at $\text{pH} \geq 12$ for a minimum of 2 hours and maintained $\text{pH} \geq 11.5$ for a minimum of 22 hours
Municipal biosolids or Biomethanation digestate or various fertilizing residuals contaminated by any of the following: o human feces in a proportion equal to or greater than 0.1% of the fertilizing residual, evaluated on a dry basis o manure o slaughterhouse wastes or manure o rendering plant wastes o animal carcasses o various animal wastes o egg waste	Salmonella not detected in $\geq 2/3$ of samples and Written statement and proof signed by the person in charge, of thermal or alkaline treatment whose control measures specific to the treatment concerned comply with the requirements of CAN/BNQ 0413-400 for microbiological characteristics or Written statement and proof signed by the person in charge, of a treatment recognized on the basis of the approach described in Annex E in CAN/BNQ 0413-400, to reduce pathogen content.	<i>E. coli</i> < 2,000,000 UFC/g on a dry basis and written statement and proof signed by the person in charge, of aerobic biological treatment and oxygen uptake rate $\leq 1,500 \text{ mg O}_2/\text{kg}$ of organic matter/hour. To determine the oxygen uptake rate, use the analysis method in CAN/BNQ 0413-200 specified for the maturity and stability requirement concerned unless the fertilizing residual is slurry, in which case use the method "EPA 1683 Specific Oxygen Uptake Rate in Biosolids" <i>E. coli</i> < 2,000,000 UFC/g on a dry basis and waste is worked into soil in less than 6 hours <i>E. coli</i> < 2,000,000 UFC/g on a dry basis and written statement and proof signed by the person in charge, of a biological activated sludge treatment, and sludge age ≥ 20 days <i>E. coli</i> < 2,000,000 UFC/g on a dry basis and Class O1 or O2 fertilizing residual Salmonella not detected in $\geq 2/3$ of samples and Class O1 or O2 fertilizing residual Salmonella not detected in $\geq 2/3$ of samples and waste is worked into soil in less than 6 hours Class O1 biosolid from municipal pond and written statement from the purification station confirming the pond pump out date previous to the pump out from which the biosolid originates. For a biosolid from a blend of biosolids from various ponds in the same purification station, the statement must confirm the pump out date for the pond with the most recent previous pump out date
Green waste or fertilizing residual designated under BNQ 0419-090 and for which the standard does not require salmonella analysis. Such matter must not be soiled by animal waste or human feces	No criteria; Class P1 by default	n/a
Other fertilizing residuals	Salmonella not detected in $\geq 2/3$ of samples and A written statement and proof signed by the person in charge to the effect that the fertilizing residual is not contaminated by human or animal feces	n/a

Table 4 Classification of fertilizing residuals according to olfactory characteristics

Classes	Types of fertilizing residuals
O1	<ul style="list-style-type: none"> a) Calcium or magnesium non-putrescible amendments b) Class P1 compost c) Leaves d) Bark e) Paper mill biosolids and de-inking sludge with C/N ratio ≥ 70 f) De-inking sludge with CCE neutralizing power $\geq 30\%$ on a dry basis and constant dryness $\geq 40\%$ g) Primary and secondary biosolids with CCE neutralizing power $\geq 30\%$ on a dry basis and constant dryness $\geq 40\%$ h) Municipal pond or paper mill biosolids where time from previous total or partial pump out and pump out producing the biosolids, plus any time spent in sludge drying bed or dewatering bag, is at least 4 years i) Biomethanation digestate from dried and moisture-protected municipal biosolids
O2	<ul style="list-style-type: none"> a) Municipal pond or paper mill biosolids where time from previous total or partial pump out and pump out producing the biosolids, plus any time spent in sludge drying bed or dewatering bag, is at least 4 years b) Municipal biosolids from mechanized stations, dried and moisture protected c) Municipal biosolids from mechanized stations, with a written statement and proof signed by the person in charge, of a liming treatment at pH ≥ 12 for a minimum of 2 hours and maintained pH ≥ 11.5 for a minimum of 22 hours d) Biomethanation digestate dewatered by a process other than high-speed centrifugation e) Septic biosolids f) Agri-food biosolids, with a written statement and proof signed by the person in charge, of a liming treatment at pH ≥ 12 for a minimum of 2 hours and maintained pH ≥ 11.5 for a minimum of 22 hours g) De-inking sludge with CCE neutralizing power $\geq 30\%$ on a dry basis and average annual dryness $\geq 35\%$ h) Primary and secondary biosolids with CCE neutralizing power $\geq 30\%$ on a dry basis and average annual dryness $\geq 35\%$ i) Paper mill biosolids with C/N ratio ≥ 50 and < 70, with a written statement and proof signed by the person in charge, of treatment other than by a kraft or sulfate process j) Paper mill biosolids, with a written statement and proof signed by the person in charge, of bacterial lysis treatment k) Class O3 fertilizing residuals, with a written statement and proof signed by the person in charge, of a liming treatment at pH ≥ 12 for a minimum of 2 hours and maintained pH ≥ 11.5 for a minimum of 22 hours
O3	<ul style="list-style-type: none"> a) Municipal biosolids from mechanized stations, dewatered b) Paper mill biosolids with C/N ratio ≥ 50 and < 70 from a kraft or sulfate process c) Paper mill biosolids with C/N ratio ≥ 50 not from a kraft or sulfate process d) Class P2 compost e) Untreated waste from fish, shrimps and other crustaceans f) Biosolids from meat processing g) Slaughterhouse or rendering plant biosolids, with a written statement and proof signed by the person in charge, of treatment at the plant meeting the following requirements: <ul style="list-style-type: none"> ▪ liming at pH ≥ 12 liming for a minimum of 2 hours and maintained pH ≥ 11.5 for a minimum of 22 hours ▪ Calcium $\geq 10\%$ on a dry basis ▪ Daily pH sampling of sludge h) Grass clippings i) Agri-food biosolids

C/N = carbon/nitrogen ratio

Table 5 Classification of fertilizing residuals according to foreign matter content

Types of fertilizing residuals	Classes	Conditions to meet
Municipal biosolids from mechanized stations	E1	Statement and screening proof, written and signed by the person in charge
Municipal biosolids – from a non-first stage treatment pond	E1	Statement and screening proof, written and signed by the person in charge
Agri-food biosolids	E1	Statement and screening proof, written and signed by the person in charge for slaughterhouse and rendering plant biosolids
Paper mill biosolids	E1	Statement and proof that the paper mill biosolid is not the result of waste paper pulping, written and signed by the person in charge
De-inking sludge	E1	Statement and proof of equipment in mill to remove foreign matter, written and signed by the person in charge
Fly ash	E1	-
Bottom ash	E2	-
Municipal biosolids – from a first stage treatment pond	E2	Statement and screening proof, written and signed by the person in charge
Septic biosolids	E2	Statement and screening proof, written and signed by the person in charge
Leaves	E2	Statement and proof that leaves are from an autumn bulk or paper bag collection, written and signed by the person in charge
Bark	E1	Statement and proof that the bark is not from former deposit sites, written and signed by the person in charge

Table 6 Classification criteria for fertilizing residuals according to foreign matter content

Types	E1 Criteria	E2 Criteria
Sharp foreign matter (> 5 mm)	≤ 1 unit per 500 ml for ≥ 2/3 of samples	n/a
Foreign matter <ul style="list-style-type: none"> ▪ length > 25 mm ▪ width > 3 mm 	≤ 2 units per 500 ml for ≥ 2/3 of samples	n/a
Total foreign matter (> 2 mm)	0.5% on a dry basis	1.0% on a dry basis

Table 7 Sampling analysis parameters for fertilizing residuals according to type

Parameters	Units of measurement	Green waste	Pulp and paper biosolids and de-inking sludge	Calcitic paper mill residue (other than ash)	Ash designated in BNQ 0419-090	Municipal biosolids and septic biosolids	Slaughterhouse and rendering plant biosolids	Agri-food biosolids	Milk, whey, by-products and white water from cheese making	Compost, biomethanation digestate and leachates	Other fertilizing residuals
Dryness value	%	x	x	x	x	x	x	x	x	x	x
Total nitrogen	% on a dry basis	x	x			x	x	x	x	x	x
Ammoniacal nitrogen		x ⁽¹⁾	x			x	x	x	x	x	x
Total P ₂ O ₅		x	x	x	x	x	x	x	x	x	x
Total K ₂ O		x	x	x	x	x	x	x	x	x	x
Organic matter		x	x		x	x	x	x	x	x	x
Neutralizing power	% CCE ⁽¹¹⁾ on a dry basis		x ⁽²⁾	x	x	x ⁽²⁾	x ⁽²⁾	x ⁽²⁾	x ⁽²⁾		x ⁽²⁾
C/N ⁽¹²⁾	n/a	x	x			x	x	x	x	x	x
pH	n/a		x ⁽²⁾	x	x	x ⁽²⁾	x ⁽²⁾	x ⁽²⁾	x ⁽²⁾		x
Aluminium	mg/kg on a dry basis		x ⁽³⁾			x	x ⁽³⁾	x ⁽³⁾			x
Arsenic		x	x	x	x					x	x
Boron		x ⁽⁴⁾	x ⁽⁴⁾	x ⁽⁴⁾	x						x
Cadmium		x	x	x	x					x	x
Cobalt		x	x	x	x					x	x
Chrome		x	x	x	x					x	x
Copper		x	x	x	x		x ⁽⁵⁾	x		x	x
Iron		x ⁽³⁾			x	x ⁽³⁾	x ⁽³⁾				x
Mercury		x	x	x	x					x	x
Manganese					x	x					x
Molybdenum		x	x	x	x				x	x	x
Sodium				x	x		x	x	x		x
Nickel		x	x	x	x					x	x
Lead		x	x	x	x					x	x
Selenium		x	x	x	x					x	x
Zinc		x	x	x	x					x	x
Dioxins and furans	ng TEQ ⁽¹³⁾ /kg on a dry basis		x ⁽⁶⁾		x ⁽⁷⁾	x ⁽⁶⁾				x ⁽⁸⁾	x ⁽⁹⁾
Other organic chemicals	mg/kg on a dry basis				x ⁽¹⁰⁾					x ⁽¹⁰⁾	x ⁽¹⁰⁾

Analysis is required for x-marked parameters

(1) Analysis not required for waste with a carbon/nitrogen ratio ≥ 70 .

(2) Analysis required for alkaline treated fertilizing residuals and for de-inking sludge.

(3) Analysis required for fertilizing residuals from an aluminum salts or iron process and for mechanically dewatered fertilizing residuals with those salts added.

(4) Analysis required for fertilizing residuals from paperboard manufacturing or any other process with boron added.

(5) Analysis required for biosolids and other pig slaughterhouse waste and rendering plant biosolids and other rendering waste.

(6) Analysis required for the biosolids from a pulp and paper making process using a chlorine oxidizing compound in pulping, bleaching or wastewater treatment, for municipal pond biosolids to be classed C1, for municipal biosolids dried by direct contact with incinerator combustion gas and for municipal biosolids treating wastewater from a plant where there is a possibility of wastewater contamination from the compounds, in particular wastewater from a textile mill or tannery.

(7) Analysis required for ash for which BNQ 0419-090 requires analysis and for other ash for which there is a possibility of contamination from the compounds.

(8) Analysis required for compost and biomethanation digestate from residuals from a textile mill or tannery, mixed fertilizing residuals, residuals listed in notes 6, 7 and 9, and for leachate generated during their treatment.

(9) Analysis required for all fertilizing residuals for which BNQ 0419-090 requires analysis and for any fertilizing residual for which there is a possibility of contamination from the compounds, in particular residuals from a textile mill or tannery.

(10) Analysis required for all fertilizing residuals for which BNQ 0419-090 requires analysis and for any fertilizing residual for which there is a possibility of contamination from the compounds. Analysis also required for all compost and biomethanation digestate from such fertilizing residuals, and for leachate generated during their treatment.

(11) CCE: Calcium carbonate equivalent

(12) C/N = carbon/nitrogen ratio

(13) TEQ: 2,3,7,8-tetrachlorodibenzodioxin toxic equivalent

Table 8 Minimum sample size for analysis

Quantity of fertilizing residuals produced annually and accumulated per production site (tonnes, on a dry basis)	12-month minimum sample size		
	Dioxins and furans and Foreign matter	Salmonella and <i>E. coli</i>	Other parameters
0 – 300	1	2	2
301 – 1,500	2	4	4
1,501 – 15,000	3	6	6
> 15,000	4	12	12

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