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MEMO

TO: Philippe Lucas

FROM: Shannon Otruba, Lawyer
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DATE: 9 June 2025

OUR FILE: 2025-01-07A Land Application of Biosolids – Update

RE: **LAW ON THE LAND APPLICATION OF BIOSOLIDS IN BRITISH COLUMBIA**

CONTENTS

SUMMARY

In 2011 and 2013 we provided to you an overview of case law addressing biosolids. At that time federal and state or provincial governments were not typically regulating biosolids as a waste or organic matter stream. You are still concerned with the disposal of biosolids, in particular with the Capital Regional District's ("CRD") treatment of the land application of biosolids and biosolids' potential contamination by "contaminants of emerging concern" ("CECs"), including a large class of chemicals called per- and polyfluorinated alkyl substances ("PFAS"), also known as forever chemicals.

To address your concerns, in this memo we examine the current law relating to the land application of biosolids in British Columbia ("BC") and whether that law specifically addresses contamination by PFAS. Our conclusion is that although the federal government has indicated an intention to regulate all classes of PFAS, BC law (and governments/agencies regulating pursuant to it) does not address all PFAS in the regulation of biosolids and, therefore, has not addressed the significant risks of soil contamination posed by PFAS. It is important to note that the law is changing rapidly in this area.

We first explain the issue of biosolids contamination by CECs and PFAS. We then set out the biosolids policy context in the CRD and, third, describe the regulatory framework for PFAS and biosolids application in BC, which includes federal and provincial law. Fourth, we identify gaps in the law and, finally, point to some legal developments related to biosolids in Canada and the United States. We conclude that the lack of comprehensive regulation by the federal and provincial governments of PFAS in biosolids could put local governments at risk of permitting contamination of land with forever chemicals.

BIOSOLIDS CONTAMINATION

There are divergent views about the risks associated with biosolids land application.[1] PFAS are termed forever chemicals because of their persistence in the environment and their accumulation in humans and nearly all components of the environment, including air, surface water, groundwater, marine water, and soil, including wastewater effluent and biosolids.[2]

Research finds that PFAS can cause adverse health effects to humans even at low concentrations.[3] Publications on the adverse effects of PFAS demonstrate reproductive and developmental effects, and impacts to human livers, kidneys, and immune systems.[4] PFAS exposure is also associated with lung toxicity, cancer, hormone disruption, and environmental toxicity.[5] Recent studies on well-researched PFAS show that exposure can result in adverse effects in humans and wildlife at lower levels than previously thought.[6] Unfortunately, research on PFAS has largely focused on a small number of well-studied PFAS, resulting in significant uncertainty regarding the behaviour and effects of other PFAS.[7]

Scientists have expressed alarm about the land application of biosolids due to the likelihood of biosolids contamination with PFAS.[8] Research shows that municipal wastewater treatment systems can provide a pathway for PFAS to enter the terrestrial environment when biosolids are applied to land, which can subsequently impact groundwater.[9] This research also finds that since

[1] E.A. Pozzebon & L. Seifert, "Emerging environmental health risks associated with the land application of biosolids: a scoping review" (2023) 22:57 *Environmental Health.*
[2] Environment and Climate Change Canada & Health Canada, *State of per- and polyfluoroalkyl substances (PFAS) report* (Gatineau: Environment and Climate Change Canada & Health Canada, 2025) at 7 [Environment & Climate Change Canada, Report].
[3] *Ibid* at 7.
[4] *Ibid*.
[5] *Ibid*.
[6] *Ibid* at 145.
[7] *Ibid* at 1, 4, 36, 43, 143.
[8] Pozzebon & Seifert, *supra* note 1.
[9] Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 28.

municipal wastewater treatment systems are not designed to treat trace contaminants like PFAS, forever chemicals like PFAS will end up in biosolids.[10]

Some of the most commonly identified groups of PFAS include side-chain fluorinated polymers ("SCFPs"), which have been found in Canadian biosolids.[11] In 2017 the federal government commissioned a study on the distribution of certain PFAS in aquatic sediment and agricultural soils where biosolids application occurred.[12] The study found SCFPs in 100% of soil samples from agricultural sites where biosolids were applied and found that concentrations of SCFPs in the soil and sediment were much greater than the total concentration of other PFAS, including the more commonly monitored PFAS of PFOs and PFOA.[13] Relatedly, another study detected SCFPs in biosolids at much higher concentrations than those of other commonly monitored PFAS, including PFOs and PFOA.[14] Therefore, there is scientific evidence that PFAS are present in biosolids and relying on PFOs and PFOAs as indicators of overall PFA contamination can be misleading.

A March 2025 assessment of a broad class of PFAS[15] by Environment and Climate Change Canada and Health Canada on PFAS and the numerous scientific studies it describes (the "Report") expose two key issues related to the regulation of PFAS. First, the Report underscores the significant uncertainty surrounding the behaviour and effects of PFAS. As described above, only a limited number of well-studied PFAS make up most research on PFAS.[16] Second, the Report exposes that the limited, well-studied PFAS relied upon as standards in the law – for instance, PFOs, PFBs, PFOAs, and LC-PFCAs – may be insufficient indicators of overall PFAS contamination.[17]

This federal assessment concluded that the entire class of PFAS defined in the Report meets several of the federally legislated criteria for toxic substances.[18]

Regarding uncertainty, scientists note that despite evidence demonstrating universal exposure to PFAS[19] and the potential severe adverse effects on human health, there is a "major gap" in scientific understandings of PFAS' impacts, particularly for lesser-studied subgroups.[20] This lack of scientific certainty surrounding PFAS has scientists calling for and regulators applying the precautionary principle.[21] Where science has demonstrated the potential for PFAS to cause severe adverse effects to the environment, including humans, yet the extent of those effects and what level of contamination causes them is unclear, the precautionary principle mandates that decision-

[10] *Ibid*; Note that Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 28 states 'Therefore, persistent chemicals such as PFAS that enter [wastewater treatments plants] *will* end up in…biosolids'[emphasis added].
[11] Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 11, 45.
[12] *Ibid* at 53, citing Chu & Letcher 2017.
[13] *Ibid*.
[14] *Ibid* at 53, citing Letcher et al 2020.
[15] Note that in Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 4-5, the class of PFAS defined in the Report excludes fluoropolymers. The Report does not address PFAS meeting the definition of fluoropolymers but notes that they are planned for consideration in a separate assessment.
[16] See Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 1, 4, 36, 43, 143.
[17] *Ibid* at 143-4.
[18] *Ibid* at 146.
[19] See Pozzebon & Seifert, *supra* note 1 which cites a study from the US Centers for Disease Control and Prevention that detected PFAS in the blood of all people tested and found that nearly all humans showed evidence of exposure.
[20] Pozzebon & Seifert, *supra* note 1.
[21] Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 8, 130, 132, 141, 144, 145.

makers act on this uncertainty (rather than wait for definitive proof of harm) to prevent harmful PFAS contamination for the entire class defined in the Report.

It is within this scientific context that local governments are contemplating the land application of biosolids.

POLICY CONTEXT IN THE CAPITAL REGIONAL DISTRICT

In 2011 the CRD banned the land application of biosolids.[22] In 2020 the CRD undertook to build a wastewater treatment project that produces biosolids the CRD must manage.[23] The Province of British Columbia (the "Province") required the CRD to develop a biosolids management plan and directed it to consider land application as a potential beneficial use in forestry, land reclamation, landfill closure, and agriculture.[24] In its 2024 *Long Term Biosolids Management Strategy* (the "Strategy"), the CRD includes in its list of management priorities the land application of biosolids for forest fertilization and the production of biosolids growing medium and/or feedstock in soil production.[25] In the Strategy, the CRD acknowledges concerns that biosolids application could contaminate soil and groundwater with CECs, including PFAS.[26]

The CRD Board has used the precautionary principle to guide its work related to biosolids land application policy. In an August 2023 Board meeting, the CRD passed a motion requiring staff to report back with a proposal to fund an independent review determining the risks and benefits of the application of biosolids and "based on this and on The Precautionary Principle, whether the CRD may have legal liability for such application".[27]

The CRD Board's consideration of permitting the land application of biosolids occurs within the context of both federal and provincial regulation of potential contaminants and organic matter.

FEDERAL AND PROVINCIAL LAW RELATED TO THE LAND APPLICATION OF BIOSOLIDS IN BC

The *Constitution Act, 1867* divides areas of legislative jurisdiction between the federal and provincial governments.[28] Biosolids regulation is an aspect of waste management and protection

[22] Capital Regional District, *Long-Term Biosolids Management Strategy* (Victoria: Capital Regional District, 2024) at 2 [CRD, Strategy]; See also Capital Regional District, "FAQs – Why is the CRD the only regional district in BC to ban land application?*",* online: https://getinvolved.crd.bc.ca/biosolids/widgets/170487/faqs#question34074; Note that the CRD took this action pursuant to its authority under s. 25 of the *Environmental Management Act,* SBC 2003, c 53.
[23] CRD, Strategy, *supra* note 17 at 1.
[24] *Ibid*.
[25] *Ibid* at 4.
[26] *Ibid* at 5.
[27] Capital Regional District Board, "Meeting Minutes" (9 August 2023), online: https://www.crd.ca/media/file/2023-08-09minutesrb?sfvrsn=18941dce_4 at 7.
[28] *Constitution Act, 1867* (UK), 30 & 31 Vict, c 3, ss 91-2, reprinted in RSC 1985, Appendix II, No 5 [*Constitution Act*].

of the environment, which are areas of shared jurisdiction.[29] The federal government can regulate waste management through its authority to regulate toxic substances under the criminal law power,[30] however the localized nature of waste management makes it primarily a matter of provincial and municipal jurisdiction. Provincial authority related to property and civil rights,[31] matters of a local or private nature,[32] and authority over municipal institutions[33] ground provincial responsibility for waste management policy and oversight, while municipalities are typically responsible for the day-to-day operation of waste management facilities.[34]

FEDERAL LAW

PFAS contamination in biosolids attracts federal authority to regulate toxic substances.[35] The federal government regulates toxics under the *Canadian Environmental Protection Act* ("*CEPA*"),[36] under which the federal government must perform its duties according to a number of guiding principles including pollution prevention and the precautionary principle.[37] The precautionary principle requires that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".[38]

CEPA provides the federal government with authority to assess whether substances are toxic or capable of becoming toxic.[39] When a substance meets one or more of *CEPA's* criteria, *CEPA* establishes measures the federal government can take, including recommending that the Governor in Council (federal Cabinet) list the substance as toxic under Schedule 1 of the Act.[40] The Minister of the Environment and the Minister of Health (the "Ministers") must then publish statements in the *Canada Gazette* indicating which measure it intends to take and how it intends to regulate the substance.[41] Both statements are subject to a 60-day public comment period that allows any person to file written comments the Ministers must consider.[42] After this process and upon the recommendation of the Ministers, the Governor in Council can make an order adding the substance to the list of toxic substances.[43]

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[29] P. Becklumb, *Federal and Provincial Jurisdiction to Regulate Environmental Issues* (Ottawa: Library of Parliament, 2019) at 3.3.3.
[30] Becklumb, *supra* note 23 at 3.3.3.
[31] *Constitution Act*, s 92(13).
[32] *Ibid*, s 92(16).
[33] *Ibid*, s 92(8)
[34] Becklumb, *supra* note 23 at 3.1.5, 3.3.3.
[35] *Ibid* at s 3.3.3.
[36] *Canadian Environmental Protection Act*, SC 1999, c 33 [*CEPA*].
[37] *CEPA*, Preamble, s 2(1)(a)(iii); See also Environment and Climate Change Canada, *A Guide to Understanding the Canadian Environmental Protection Act, 1999* (Ottawa: Environment and Climate Change Canada, 2004) at 3.
[38] *CEPA*, Preamble, s 2(1)(a)(ii).
[39] *CEPA*, s 68.
[40] *CEPA,* s 77(2).
[41] *CEPA,* s 77(1),(6).
[42] *CEPA,* s 77(5).
[43] *CEPA*, s 90(1); Note that amendments to *CEPA* split Schedule 1 into two parts. Part 1 contains a list of the highest risk toxic substances, the priority for which is prohibition. Part 2 contains substances that do not meet the criteria for Part 1, the priority for which is pollution prevention, although it is worth noting that pollution prevention actions can include

Since 2016 the *CEPA* regime has listed as toxic three subgroups of PFAS - PFOs, PFOA, and long-chain perfluorocarboxylic acids (LC-PFCAs),[44] and regulates these substances under the *Prohibition of Certain Toxic Substances Regulations, 2012,*[45] which prohibits the manufacture, use, sale, offer for sale, or import of a listed substance.[46] The only exceptions to this prohibition are where the product containing the substance is designed for a permitted use described in the Regulation's schedules, does not exceed a prescribed concentration, or where the toxic substance is "incidentally present".[47]

Since 2021 the federal government has published several notices of intent to address PFAS as a class of substances, with the significant development in March 2025 of publishing notice in the *Canadian Gazette* triggering a 60 day comment period on a proposed risk management approach and the listing of PFAS except fluoropolymers to Schedule 1 (Part 2) of *CEPA* given scientific findings that regulating PFAS in discrete subgroups is an inefficient and incautious approach.[48] The articulated PFAS risk management approach (the "Approach") proposes phased prohibition, in which Phase 1 would prohibit uses of PFAS not currently regulated in firefighting foams, and Phase 2 would prohibit the use of PFAS "not needed for the protection of health, safety, or the environment", including in cosmetics, health products and drugs, food packaging, paints, cleaning products, textiles, and waxes.[49] Phase 3 would prohibit the use of PFAS "for which there may not be feasible alternatives" including in spray-foam insulation, refrigeration, prescription drugs, medical devices, certain industrial processes, and transport and military applications.[50] The Approach was subject to a public comment period that closed on May 7, 2025.[51]

In addition to existing and proposed regulation under *CEPA*, the federal Canadian Food Inspection Agency (the "CFIA") established interim PFAS standards for commercial biosolids imported or sold in Canada as fertilizer.[52] The standard applies to municipal biosolids and states that biosolids

prohibition; See Government of Canada, "Bill S-5, Strengthening Environmental Protection for a Healthier Canada Act – Summary of Amendments" (28 September 2023), online: https://www.canada.ca/en/services/environment/pollution-waste-management/strengthening-canadian-environmental-protection-act-1999/bill-c-28-strengthening-environmental-protection-healthier-canada-act-summary-amendments.html#toc16.

[44] *CEPA,* Schedule 1, Parts 1 and 2.

[45] SOR 2012-285 [*PCTSR*].

[46] *PCTSR*, s 6(1); See also *PCTSR,* Schedule 2, Parts 1, 1.1, 2, 3.1, & Schedule 2.1.

[47] *Ibid*, ss 6(1)-(2.5); Note that for substances with a designated concentration limit for certain uses, incidental presence of the substance must not exceed the prescribed limit, see *PCTSR*, s 6(2.5); See also *PCTSR*, Schedule 2, Part 3.1.

[48] For a list of notices since 2021 see Government of Canada "Per- and polyfluoroalkyl Substances (PFAS)" at https://www.canada.ca/en/health-canada/services/chemical-substances/other-chemical-substances-interest/per-polyfluoroalkyl-substances.html; Environment and Climate Change Canada & Health Canada, Report, *supra* note 2 at 8

[49] Environment and Climate Change Canada & Health Canada, *Risk Management Approach for Per- and polyfluoroalkyl substances (PFAS), excluding fluoropolymers* (Ottawa: Environment and Climate Change Canada & Health Canada, 2025) at 9; Note that firefighting foams are already partially regulated due to existing prohibitions on certain subgroups of PFAS. The Approach proposes prohibiting firefighting foams from containing any PFAS, see 16.

[50] *Ibid* at 9.

[51] Government of Canada, "Canada Gazette, Part 1, Volume 159, Number 10: Order Adding a Toxic Substance to Part 2 of Schedule 1 to the Canadian Environmental Protection Act, 1999" (8 March 2025), online: https://gazette.gc.ca/rp-pr/p1/2025/2025-03-08/html/reg2-eng.html.

[52] Canadian Food Inspection Agency, *T-4-132 – Per- and polyfluoroalkyl substances (PFAS) standard for commercial biosolids imported or sold in Canada as fertilizers* (23 October 2024), online: https://inspection.canada.ca/en/plant-health/fertilizers/trade-memoranda/t-4-132-commercial-biosolids.

intended for use as commercial fertilizer must contain less than 50 parts per billion of PFOs. The standard uses PFOs as an indicator of PFAS contamination.[53]

PROVINCIAL LAW

BC primarily regulates biosolids under the *Environmental Management Act* (the "*EMA*") and the *Public Health Act*. The *EMA* provides broad regulatory authority to the Lieutenant Governor in Council (provincial Cabinet) to regulate waste,[54] with the *Public Health Act* enabling the Lieutenant Governor in Council to regulate operators engaging in the land application of biosolids.[55] Pursuant to these regulatory powers, the Province enacted the *Organic Matter Recycling Regulation* (the "*OMRR*")[56] and the *Contaminated Sites Regulation* (the "*CSR*").[57]

The *OMRR* establishes treatment standards and procedural requirements that must be met before biosolids are applied to land. The *OMRR* divides biosolids into two classes, one of which is subject to more stringent quality criteria than the other,[58] but it does not provide standards for concentrations of chemicals like PFAS.[59]

It is significant to note that the Province has stated that it intends to update the *OMRR* to respond to CEC contamination of biosolids and supports a prevention-first approach in light of ongoing scientific research on the impacts of CECs on human health and the environment.[60] However, the Province has not expressed an intent to regulate the concentration of CECs in biosolids.[61]

The *CSR* establishes that a site is "contaminated" where concentrations of listed substances exceed the Regulation's standards.[62] The *CSR* lists a broad range of substances, including several subgroups of PFAS, namely PFOs,[63] PFBs,[64] and PFOA.[65] Where a site is "contaminated", the *CSR* provides guidance for the remediation of the site,[66] liability for remediation costs,[67] and soil removal,[68] among other activities. The *CSR* does not directly deal with the land application of biosolids but is relevant where biosolids could contaminate land with PFAS.

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[53] *Ibid*, s 3.
[54] *Environmental Management Act*, SBC 2003, c 53, ss 21, 138 [*EMA*].
[55] *Public Health Act*, SBC 2008, c 28, s 115; See also *Regulated Activities Regulation*, BC Reg 286/2012, s 7.
[56] *Organic Matter Recycling Regulation*, BC Reg 76/2022 [*OMRR*].
[57] *Contaminated Sites Regulation*, BC Reg 133/2022 [*CSR*].
[58] *OMRR*, ss 6, 8, & Schedule 4, ss 1, 3.
[59] See *OMRR,* Schedules 1, 2, 3, 4 for details on the *OMRR*'s treatment standards.
[60] Ministry of the Environment and Climate Change Strategy, *Organic Matter Recycling Regulation Project Update* (Victoria: Government of British Columbia, 2022) at 4-5; Note that the Province stated its intention to add authority in the *OMRR* for a director to require assessment of biosolids for CECs, see Ministry of the Environment and Climate Change Strategy at 4.
[61] Ministry of the Environment and Climate Change Strategy, *supra* note 53; See also CRD, Strategy, *supra* note 17 at 5.
[62] *CSR,* s 11.
[63] *CSR*, Schedule 3.1, Part 1, Matrix 27; Also *CSR*, Schedule 3.2.
[64] *CSR*, Schedule 3.1 Parts 2 & 3; Also *CSR*, Schedule 3.2.
[65] *CSR*, Schedule 3.2.
[66] See *CSR,* Parts 6, 9, 13.
[67] See *CSR,* Part 7.
[68] See *CSR,* Part 8.

Finally, under the *EMA* regional districts may regulate by bylaw the management of municipal solid waste or recyclable material for the purpose of implementing an approved waste management plan, which includes regulating or prohibiting:[69]

- The types, qualities or quantities of municipal solid waste or recyclable material that may be brought onto or removed from a site; and
- Establishing different prohibition, conditions, requirements and exemptions for different classes of persons, sites, operations, activities, municipal solid wastes or recyclable materials.[70]

The law described above establishes standards that permit the land application of treated biosolids. However, these standards are evolving due to the federal government's intention to regulate the entire class of PFAS defined in the Report under *CEPA* and the Province's stated intent to provide additional regulation for CEC's. Given these stated intents to update regulation to cover the full class of PFAS, it is clear that the gap in existing regulation relates significantly to its limited application to a small subset of PFAS.

GAPS IN THE LEGAL REGIME RELATED TO THE LAND APPLICATION OF BIOSOLIDS

The regulatory framework for biosolids creates a regime under which municipalities can permit the land application of biosolids if they comply with federal and provincial standards. Although these standards interact, they regulate PFAS in distinct ways: *CEPA* establishes a narrow set of permissible uses for the three subgroups already listed as toxic but allows limited use of products containing PFAS, including where they are incidentally present;[71] the CFIA's standards prohibit biosolids used as commercial fertilizer from exceeding a certain concentration of an indicator PFAS;[72] the *CSR* establishes standards for permissible concentrations of certain subgroups of PFAS in soil and groundwater;[73] and the *OMRR* sets standards for contaminants such as pathogens and vectors but does not address PFAS.[74]

As noted above, those standards rely on limited subgroups of PFAS, whereas emerging science suggests that relying on those limited well-studied sub-groups of PFAS as an indicator of overall PFAS contamination may fail to expose the extent of PFAS contamination and thus disguise the risks associated with that contamination. The CFIA standards rely on PFOs as an indicator of overall PFAS contamination, and the *CSR* only sets standards for PFOs, PFBs, and PFOA. This suggests that treated biosolids could meet legal standards but still be contaminated with other PFAS at much greater concentrations than those used in the standards. Therefore, the PFAS used

[69] *EMA*, s 25(3).
[70] *Ibid*, s 25(3)(a),(m).
[71] *CEPA,* Schedule 1, Part 2; *PCTSR*, ss 6(1)-(2.5), Schedule 2, Parts 1, 1.1, 2, 3.1, Schedule 2.1.
[72] Canadian Food Inspection Agency, *supra* note 52, s 3.
[73] *CSR*, Schedule 3.1, Part 1, Matrix 27, Parts 2, 3, Schedule 3.2.
[74] *OMRR*, ss 6, 8, Schedule 4, ss 1, 3; See also *OMRR,* Schedules 1, 2, 3.

as indicators of overall PFAS contamination in the legal standards may be insufficient to determine the risks associated with biosolids application.

Scientific uncertainty and research imbalances between PFAS subgroups expose gaps in the legal regime related to the land application of biosolids. These gaps, when considered in light of the precautionary principle, suggest that allowing the land application of biosolids under the current legal regime is imprudent and unreasonable.

OTHER LEGAL DEVELOPMENTS RELATED TO PFAS CONTAMINATION OF BIOSOLIDS

Finally, concerns about PFAS and contamination of biosolids are driving legal developments in Canada and internationally. For instance, in 2023 Quebec introduced a ban on the agricultural application of biosolids,[75] and in 2022 the state legislature of Maine banned the land application of biosolids to protect its soil from forever chemical contamination.[76]

Harms related to PFAS contamination are also driving high-profile lawsuits. In 2024 the Province filed a proposed national class action against PFAS manufacturers that it claims are responsible for PFAS contamination in drinking water systems across Canada.[77] This case is similar to ongoing class action lawsuits in the US involving claims that four major chemical manufacturers contaminated US public drinking water systems with PFAS. In one of the cases, 3M agreed to pay between $10.5-12.5 billion to settle claims related to PFAS contamination of the water systems.[78] In related proceedings, three other companies - DuPont, Tyco, and BASF Corporation - agreed to pay millions of dollars each to settle claims involved in the class action.[79]

[75] *Agricultural Operations Regulation*, SQ 2022, c Q-2, r 26.
[76] *An Act To Prohibit the Contamination of Clean Soils with So-called Forever Chemicals*, LD 1911 (2022).
[77] British Columbia, "Minister's statement on Province's civil claim on 'forever chemicals'" (21 June 2024), online: https://news.gov.bc.ca/releases/2024AG0033-000978.
[78] *City of Camden et al, v 3M Company*, 2:23-cv-03147, DSC; See also United States District Court for the District of South Carolina Charleston Division, "Settlement Agreement Between Public Water Systems and 3M Company" (June 2023), online: https://www.PFASwatersettlement.com/wp-content/uploads/2023/09/3.-ECF-10-3-Settlement-Agreement-as-originally-filed.pdf at s 3.1.
[79] See *City of Camden et al. v E.I. DuPont de Nemours and Company et al.*, 2:23-cv-03230, DSC; *City of Camden et al v Tyco Fire Products LP et al,* No 2:24-cv-02321, DSC; *City of Camden et al v BASF Corporation,* 2:24-cv-03174, DSC; See also United States District Court for the District of South Carolina Charleston Division, "Class Action Settlement Agreement" (June 2023), online: https://www.PFASwatersettlement.com/wp-content/uploads/2023/09/3.-ECF-4-2-Settlement-Agreement.pdf at s 3.2; United States District Court for the District of South Carolina Charleston Division, "Settlement Agreement for Water Systems" (April 2024), online: https://www.PFASwatersettlement.com/wp-content/uploads/2024/04/ECF-4911-3-Tyco-MSA.pdf at s 3.1; United States District Court for the District of South Carolina Charleston Division, "Settlement Agreement for Water Systems" (May 2024), online: https://www.PFASwatersettlement.com/wp-content/uploads/2024/11/MSA-BASF.pdf at s 3.1.

CONCLUSION

New knowledge about the scientific uncertainty regarding the behaviour and effects of PFAS and the lack of regulation of all PFAS subgroups points to the inadequacy of current regulations that may not capture the extent of contamination and the associated risks to environmental health, including humans. Given new evidence from the federal government in the Report and both the federal and provincial governments stated intentions to update their regulatory infrastructure for PFAS, local government permitting of the land based application of biosolids that meet senior government regulations may not safeguard soil and human health from contamination with PFAS.