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EMERGING CONTAMINANTS IN BRITISH COLUMBIA
TECHNICAL MEMORANDUM

December 2025

PREPARED FOR:

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NOTE TO READER

This document was prepared for the Society of Contaminated Sites Approved Professionals of BC (CSAP Society) for use by Approved Professionals in their work. The BC Ministry of Environment and Parks has not endorsed this document and the information in this document in no way limits the director's exercise of discretion under the *Environmental Management Act.*

CSAP Society has recommended that Approved Professionals use their professional judgement[1] in applying any guidance, including this document. As the science upon which contaminated sites remediation is based is relatively young and because no two sites that involve the natural environment are the same, the need to exercise professional judgement within the regulatory process is recognized.

Ultimately, submissions for *Environmental Management Act* certification documents need to meet regulatory requirements. The onus is on qualified professionals and Approved Professionals to document the evidence upon which their recommendations depend.

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The conclusions and recommendations of this document are based upon applicable legislation and policy existing at the time the document was prepared. Changes to legislation and policy may alter conclusions and recommendations.

[1] https://csapsociety.bc.ca/wp-content/uploads/ATT-3_-CSAP-Professional-Judgement-May2nd.pdf

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1 INTRODUCTION

1.1 Background

There is currently no federal or provincial framework for identifying, monitoring or prioritizing emerging contaminants in Canada. Emerging contaminants often gain attention through discoveries of their presence or their toxicity by scientific research and/or popular media outlets. Governments can respond to such knowledge by starting their own investigation, often through literature research, followed by listing candidate substances on an action or a priority list. Listing a substance then requires management of its use, import, and disposal and/or regulation of its presence in the environment. Management and regulation often take years or decades to act on, following awareness and definitive scientific evidence.

Many individual lists of emerging contaminants are being created, but none are specific to British Columbia (BC). Completing a proactive, and preferably regular, emerging contaminants review specific to BC and the Contaminated Sites Regulation (CSR) is critical to maintaining appropriately regulated CSR substances and preventing costly contaminated sites to be created.

The purpose of this project was to compile a list of emerging contaminants relevant to BC, and contaminated sites in particular, for future regulation under the CSR, on behalf of the Contaminated Sites Approved Professional (CSAP) Society.

1.2 Objective

The project was to provide information, context, and opinion on emerging contaminants to the BC Ministry of Environment and Parks (ENV) to support their decision-making process regarding:

- Which emerging contaminants should be considered in future revisions of the CSR, and
- How much is known about these contaminants in terms of the scientific understanding of their sources, fate/transport, and effects as well as laboratory methods allowing them to be detected at sufficiently low concentrations that would support CSR standards development.

Continuously expanding the CSR to include emerging contaminants ensures that risks to human health and the environment are minimized at contaminated sites, and that the CSR is reflective of relevant new scientific findings.

Different government agencies, scientists, and environmental groups define emergent contaminants in diverse and dissimilar manners. According to the United States Environmental Protection Agency (US EPA) an “emergent contaminant” is defined as:

> *" A chemical or material characterized by a perceived, potential, or real threat to human health or the environment or by a lack of published health standards. A contaminant also may be "emerging" because of the discovery of a new source or a new pathway to humans."*

From this definition, we understand *"emerging contaminants"* for the purposes of the project, to include:

> ***"Substances that may cause or threaten to cause adverse effects on human health and the environment, are currently non-prescribed substances under the CSR, and could reasonably be expected at contaminated sites in BC due to CSR Schedule 2 activities."***

1.3 Scope of Work

The project included the following activities to fulfill the objectives:

- TASK 1A: Create a list of emerging contaminants which are the focus of current scientific efforts and/or are being addressed in other relevant jurisdictions, and describe their general commercial/industrial uses;
- TASK 1B: From this list, identify those emerging contaminants that:
    - Appear to be linked to a CSR Schedule 2 activity; or
    - May or may not have a CSR Schedule 2 activity but are relevant to environmental management in BC;
- TASK 2: Prioritize the identified relevant emerging contaminants by the highest potential for human health and/or environmental risk based on basic environmental fate and transport characteristics (e.g., half-lives) and toxicological information (e.g., persistence, accumulation, toxicity etc.).

The scope of work also included a project meeting where Task 1 was discussed with CSAP and ENV partners on September 17, 2025 to ensure harmony between the intent of the project and the selected approach.

The approach followed the main criteria used in considering emerging contaminants for inclusion during previous CSR amendments (circa 2014-2017), using the linkage to Schedule 2 activities and known toxicity of a contaminant or contaminant family, with a calibration to likely or actual presence of the substance in the environmental media of BC.

2 METHODOLOGY

2.1 Task 1A

A comprehensive review of government and non-government resources was employed to identify existing contaminants lists, which was then supplemented with a targeted search of scientific literature using the following keywords: *chemical, contaminant, emerging, environment, priority, substance*, and *toxic*. The information sources selected for use in the project are described in **Table 1** attached. Depending on the information source and underlying intention(s) (e.g. priority given for future regulatory action or identified for information collection purposes), all listed substances were retained or only a subset was included to create a master list of emerging contaminants (see table for details).

2.2 Task 1B

From the master list created in Task 1A, two subset lists of emerging contaminants were identified:

- **Emerging Contaminants associated with Schedule 2 use(s) (ECL-1):** Considering the following assumptions:
    - All substances generally described as industrial chemicals or with a clearly identifiable industrial use are considered to have a potential CSR Schedule 2 use;
    - All substances with an existing CSR soil standard are considered to have a Schedule 2 use;
    - Current use pesticides are not considered to have a CSR Schedule 2 use when they are applied to control pests but are captured under Schedule 2, Activity A12 - Chemical industries and activities: pesticide manufacturing, formulation or wholesale bulk storage, H10 – Industrial waste storage, recycling or landfilling, and H13 -Municipal waste storage, recycling; and,
    - Personal care products include lotions and creams, fragrances, cosmetics, insect repellants, over-the-counter (OTC) pharmaceuticals and prescription pharmaceuticals, and substances used in medical care facilities and are not considered to have a Schedule 2 use during use by the general public or medical community, but are captured under Schedule 2 Activity A9 - Chemical industries and activities: pharmaceutical products manufacturing, H13 -Municipal waste storage, recycling, composting or landfilling, and H17 - Sewage lagoons or impoundments.
- **Emerging Contaminants relevant to BC but with no clear Schedule 2 use (ECL-2):** Substance did not have an identified Schedule 2 use and was identified as a potential risk to human health and/or the environment. This mostly included contaminants where use rather than production is believed to be responsible for environmental presence, such as cocaine, hand sanitizers, sunscreens, and artificial sweeteners, and use is common in other industrialized nations with diversified economies and higher living standards similar to BC. In some cases, there was insufficient knowledge to confidently assess presence in BC.

2.3 Task 2

For substances retained on the ECL-1, Google Artificial Intelligence (AI) Overview[1] was employed to obtain brief descriptions of chemical properties including half-lives, leachability, solubility, and volatility, and toxicological characteristics such as bioaccumulation potential, known human health effects including carcinogenicity, and potential ecological risks. The search term consisted of the substance name, supplemented by the chemical property required if the search was

[1] https://www.google.com

insufficient, with in some cases review of the cited references. Where information was not available, the knowledge gap was identified. All data content was created in October of 2025.

This additional data collection was not completed for the ECL-2.

3 RESULTS AND CONCLUSIONS

3.1 Task 1

A total of 313 substances or substance groups were identified for the master list of emerging contaminants, of which an alphabetic list is attached as **Table 2**. The master list includes a variety of substances: Substances that may or may not be regulated in the BC CSR are listed, and substances with or without CSR Schedule 2 uses are present. For example, mercury appears on the master list as it is considered an emerging contaminant by many jurisdictions due to its increasing environmental distribution, but mercury is already regulated in the CSR for soil, water and sediment. However, caffeine appears on the master list for being frequently detected in water worldwide but has no CSR Schedule 2 use and is not regulated under the CSR.

To simplify use by ENV and others, the master list was subdivided into the two subsets:

- The ECL-1 (**Table 3**), with substances with a Schedule 2 use but not regulated under the CSR, contains 111 emerging contaminants or contaminant groups; these substances are recommended for potential future inclusion in the CSR once they are prioritized by chemical and toxicological properties. Most emerging contaminants are industrial chemicals[2].
    - It is noted that for the ECL-1 some substances were excluded as being already regulated under the CSR, but those substances may only be regulated in one media.
    - Substances were included as a group rather than individual substances when it was unclear whether analytical methods were available for their analyses (e.g. siloxanes).
    - Where the group parameter was already regulated in the CSR but other jurisdictions have started listing individual substances rather than the group, the individual substances were retained (e.g. PFAS).
    - Complex mixtures (such as mill effluents or refinery releases) and emerging contaminants related to climate change (such as ozone depleting substances) were not retained.
- The ECL-2 (**Table 4**), with non-Schedule 2 substances of potential concern to BC, contains 48 emerging contaminants; these substances are recommended to be considered in future environmental management efforts in BC, but were not further prioritized. Most of these

[2] Reflective of the selection of sources used in the project and the intent of the CSR. For example, Health Canada lists 963 registered active ingredients used as herbicides/pesticides, of which many would not occur on the ECL lists.

substances are not industrial chemicals but have a beneficial use (i.e. practical purpose or valid need).

3.2 Task 2

A preliminary prioritization of emerging contaminants from the ECL-1 was based on the chemical and toxicological characteristics identified in Task 2. Emerging contaminants were included in 1 of 3 categories:

1. High Priority: Identified as highly toxic to humans or ecological receptors (i.e. at low doses), as a probable or possible carcinogen, or as persistent and bioaccumulative[3,4,5].
2. Intermediate Priority: Identified as moderately toxic.
3. Low Priority: Identified as low toxicity, and/or chemical properties that indicate its presence in the environment is of short duration. Also included in this category were emerging contaminants with little or no information available.

Prioritization of emerging contaminants from the ECL-1 is included as **Table 5**.

Briefly, 111 substances/chemical families were considered and assigned Priority 1, 2 or 3. These compounds are present in BC, relevant to Schedule 2 CSR activities, and thus appropriate for consideration for future CSR standards.

Most emerging contaminants were assigned a Priority 1 designation reflective of the source lists chosen for the project. Priority 1 substances were most often classified as such based on being persistent and bioaccumulative. It is scientifically defensible that the Priority 1 substances move forward to the next step in consideration for regulatory action in BC.

Substances categorized as Priority 2 and 3 may mostly be designated as such because of knowledge gaps. Limited information on chemical and toxicological properties makes not only ranking these substances difficult but would also impede the future development of CSR standards. Such substances should be re-evaluated on a proactive basis.

[3] Consistent with the initial prioritization step of the Chemical Prioritization Process for Risk Evaluation under the Toxic Substances Control Act (TSCA) described in: USEPA, OCSPP (2023) *"Chemicals under the Toxic Substances Control Act (TSCA)." Collections and Lists.* August 16, 2023.
[4] Similar prioritization criteria to those used in this project are proposed under the Contaminants of Emerging Concern (CEC) Framework, under development by the Interstate Technology Regulatory Council (ITRC), available at: https://cec-1.itrcweb.org/.
[5] Alternative prioritization methods are also available from Health Canada, Threshold of Toxicological Concern (TTC) approach (https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/science-approach-document1.html) and Hazard Profiling Method (Ecological Risk Classification of Organic Substances v. 2.0).

4 RECOMMENDATIONS

Based on the conclusions, we provide the following recommendations:

- Emerging contaminants on the ECL-1 that were ranked as Priority 1 should be considered for CSR standards development.
- Emerging contaminants on the ECL-1 that were ranked as Priority 2 and 3 should be re-evaluated within a reasonable timeframe when more information may have become available. This is key to ensuring that critical contaminants (e.g., those with novel chemical properties or industrial uses) do not remain unregulated for long periods of time, thereby allowing the creation of contaminated sites and putting human and environmental health at risk.
- Emerging contaminants that move forward from the ECL-1 will need a check against current commercial chemical analytical methods with appropriate detection limits for future CSR standards.
- A large percentage of emerging contaminants on the master list was already regulated under the CSR, and therefore not carried forward from the masterlist for inclusion on the ECL-1. However, many of those substances may only have soil or water standards but are not regulated in other relevant media. Refinement on a media-specific basis is recommended.
- Expanding on the prioritization step by categorizing the emerging contaminants into distinct human health and environmental protection priorities and using standardized toxicity data for prioritization from available government databases (e.g. PubChem or REACH) would indicate in more detail which of the substances require the most imminent regulation for each protection goal.
- Most emerging contaminants considered a high priority for inclusion in the CSR are considered as such based on persistence and bioaccumulation potential. However, there are currently no CSR standards that consider a bioaccumulation/biomagnification pathway. Such an exposure pathway may need consideration in the CSR.
- Further review of high priority emerging contaminants may include data on manufactured and used volumes in Canada, industry specific applications, environmental prevalence, and legislative context (i.e. existing regulations capturing the contaminant other than CSR).
- It is recommended that ECL-2 substances are considered during future environmental monitoring efforts in support of BC relevance and to detect environmental trends.
- As contaminants are emerging, so are new industrial and commercial activities. New Schedule 2 activities may need consideration for inclusion in the CSR.
- As certain emerging contaminants (e.g. PFAS, siloxanes) are regulated as either grouped parameters or individual substances or both in different jurisdictions, ENV should clarify

its policy and/or preferences. Furthermore, standard units may need to be adopted for others (e.g. microplastics).

- To protect human health and the environment in BC, this work should continue to move forward to the next stage of regulatory action and could serve as part of a framework for future emerging contaminants efforts[6].

5 ACKNOWLEDGEMENTS

The Active Earth project team consisted of Meredith Guest (project manager), Scott Steer and Lizzy Mos (project execution), and David Mitchell. Mackenzie Smith and Leanne Bentsen of Active Earth provided project support, Heather Osachoff provided technical support to Active Earth.

Active Earth would like to acknowledge our CSAP (Patricia Fu and Travis Deeter) and ENV (Cara Lachmuth, Ingrid Sorensen, and Kirsten Webster) partners.

6 CLOSURE

We appreciate the opportunity to work with you and thank you for considering our services.

Yours truly,

ACTIVE EARTH ENGINEERING LTD.

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[6] A Contaminants of Emerging Concern (CEC) Framework is currently under development by the ITRC, and is available at: https://cec-1.itrcweb.org/

Table 1. Emerging Contaminant Sources and Methodology

Canada			
Toxic Substance List	CEPA	Substances in Schedule 1 of the CEPA (1999) are considered toxic as defined in Section 64 of the Act. The Government of Canada has the authority to regulate, prevent or control the use and/or release of these substances. Substances are added by the Government of Canada based on the Ministers of Environment and Health's recommendation. To reduce the impact of Schedule 1 substances on the environment and human health, Environment and Climate Change Canada and Health Canada are responsible for developing and implementing regulations or other instruments that will prevent or control their use and/or release.	All substances retained
Priority Substance Lists	PSL1/ PSL2	CEPA requires both the Minister of Environment and Climate Change Canada and the Minister of Health to establish a priority substances list (PSL). It identifies substances to be assessed on a priority basis to determine whether they are toxic (as defined under section 64 of the act) and pose a risk to the health of Canadians or to the environment. Assessments of the first 44 substances placed on the list (PSL1) were completed by February 1994. Following the recommendations of a multi-stakeholder expert advisory panel, 25 substances were added to the list (PSL2).	All substances retained
Chemicals Management Plan	CMP	The Government of Canada assesses and manages risks to human health and the environment posed by chemical substances that can be found in food and food products, consumer products, cosmetics, drugs, drinking water and industrial releases. Its **Domestic Substances List (DSL)** contains 28,000 substances manufactured or imported in Canada (not new to Canada). **CEPA Section 75** requires cooperating and developing information exchange procedures with Canadian provinces, territories and Indigenous governments and with Member countries of the Organisation for Economic Co-operation and Development (OECD). They may bring forward substances for risk assessment under the CMP that may be considered emerging contaminants (e.g. 6-PPD-q).	DSL substances were not considered emergent contaminants as they are not clearly identified as a HH or ENV risk until listed on PSL/TSL*
Canadian Council of Ministers of the Environment	CCME	The CCME is an inter-governmental organization in Canada with members from the federal, provincial and territorial governments. They discuss national environmental priorities and determine work to be implemented through the CCME organization, including development of nationally consistent environmental standards, guidance and objectives to support achieving common environmental quality objectives across the country. The CCME recommendations may be adopted by member jurisdictions but they are not binding as the CCME has no authority to implement or enforce legislation.	Where substances are identified as an environmental priority or potential concern in guidance documents or factsheets they were included
United States			
Priority pollutants	PL	Substances that are listed in, and regulated under, the United States Code of Federal Regulations (CFR 40 Part 423) and for which analytical test methods are available. The current list contains 126 Priority Pollutants.	All substances retained
Clean Water Act	US EPA CWA	The CWA regulates priority pollutants as well as additional substances to be considered in national discharge standards (such as Effluent Guidelines) or in national permitting programs.	All substances retained
Toxic Substances Control Act	US EPA PBT	The TSCA requires EPA to compile, keep current and publish a list of each chemical substance that is manufactured or processed, including imports, in the United States	All substances retained

		for uses under TSCA (the "TSCA Inventory"). It plays a central role in the regulation of most industrial chemicals in the United States. It requires, under Section 5, pre-manufacture notification for "new chemical substances" and under Section 4, testing of chemicals by manufacturers, importers, and processors where risks or exposures of concern are found. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides.	
California EPA	CalEPA	State lists of concerning substances to drinking water and water quality, including those from unintentional sources.	All substances retained, but considered that some may be monitored without cause for concern and/or may not have Schedule 2 uses
Europe			
ECHA	SVHC	ECHA creates the Candidate List of Substances of Very High Concern (SVHC), i.e. substances that can harm people or the environment. Companies are responsible for managing the risks of these chemicals and giving customers and consumers information on their safe use. Includes PBT substances and REACH registrations.	As this list is updated annually, and North American lists exist within acts and regulations for which updates are generally slow, ECHA entries made in 2025 were considered valuable additions to the emerging contaminants list
EU Water Watch List		**S**ubstances in surface waters suspected to be unintentionally released into the environment and/or of posing a risk to the environment and human health. Water Watch informs the EU Water Framework Directive by providing monitoring data to perform a risk assessment for substances that have reliable information on toxicity that points to a possible risk and sufficiently sensitive analytical methods in existence.[7]	All substances retained, but considered that some may be monitored without cause for concern and/or may not have Schedule 2 uses
International			
United Nations Environment Program and World Health Organization	UNEP	International agencies that identify Top 10 substances of major public health concern worldwide for future action.	All substances retained
International Agency for Research on Cancer	IARC	International agency that evaluates substances for carcinogenic properties to humans.	Substances classified as carcinogenic (Class 1, 2A or 2B) between 2020-2025 retained
National Institute of Health - National Library of Medicine	Pubmed	International compilation of abstracts of peer-reviewed publications, representing an accurate interest for substances from the scientific community. The "Pubmed" abbreviation was also used for substances making national/international headlines in 2025 under the keywords provided in the introduction section.	Most recent 100 publications on "emerging contaminants" retained; Headline substances June to October 2025 retained

Notes: CEPA = Canadian Environmental Protection Act; ECHA = European Chemicals Agency; (US) EPA = (United States) Environmental Protection Agency; EU = European Union; PBT = persistent bioaccumulative and toxic, *In the case of the Siloxanes group of substances information on individual substances was obtained from CMP.

[7] A similar feedback-providing monitoring effort is underway under the EU Soil Framework to be incorporated under the EU Soil Strategy for 2030.

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
1,4-Benzenediamine (N,N'-mixed phenyl and tolyl derivatives)	Unknown	antioxidant and antiozonant in rubber	CEPA	No	No	Yes	Toxic to aquatic life	-	-	-	-
(4-Chlorophenyl)cyclopropylmethanone,O-[(4-nitrophenyl)methyl]oxime (NCC Ether)	Industrial chemicals	Chemical intermediate in the manufacture of a pesticide	CEPA	Yes	Yes	NA	-	-	-	-	-
1, 2-Dichloroethane	Industrial chemicals	Production of vinyl chloride (plastic and vinyl products including polyvinyl chloride (PVC)), furniture and automobile upholstery, wall coverings, housewares, solvent, gasoline additive and in automobile parts.	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
1,1,1-trichloroethane (Methyl chloroform)	Ozone depleting substances	Solvent for cleaning and degreasing	CEPA, IARC 2A	Yes	Regulated in BC	NA	-	X	X	X	-
1,1,2,2,-Tetrachloroethane	Industrial chemicals	Industrial solvent and as a separation agent	PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
1,2,3,-Trichloropropane	Industrial chemicals	Industrial waste sites, cleaning/degreasing solvent, pesticide products	CalEPA	Yes	Regulated in BC	NA	-	-	X	X	-
1,2-Dichlorobenzene	Industrial chemicals, pesticides	Fumigant, solvent, chemical intermediate, and insecticide	PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
1,2-Diphenylhydrazine (Hydrazobenzene)	Industrial chemicals	Manufacture of dyes, pharmaceuticals, and hydrogen peroxide	US EPA CWA, IARC 2B	Yes	Yes	NA	-	-	-	-	-
1,3-Butadiene	Industrial chemicals	Production of synthetic rubber for tires, rubber products, plastics and other chemicals	CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	X	-
1,3-Butadiene, 2-methyl- (Isoprene)	Industrial chemicals	Synthetic rubber production (tires)	CEPA	Yes	Yes	NA	-	-	-	-	-
1,4-Dichlorobenzene	Pesticides	Fumigant insecticide	PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
1,4-dioxane	Industrial chemicals	Industrial solvent and stabilizer, contaminant of certain manufacturing processes.	US EPA PL, CalEPA, EU PBT	Yes	Regulated in BC	NA	-	X	X	-	-
1-Bromo-3-chloropropane	Organohalogens	Intermediate in the manufacture of	IARC 2B	Yes	Yes	NA	-	-	-	-	-
1-Propanol, 2-methoxy-	Industrial chemicals	Chemical solvent and byproduct	CEPA	Yes	Yes	NA	-	-	-	-	-
2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	Fuel additives	Automotive repair shops, marinas	US EPA PBT, EU PBT	Yes	Yes	NA	-	-	-	-	-
2,4-Dichloro-1-nitrobenzene	Industrial chemicals	Pesticide synthesis	IARC 2B	Yes	Yes	NA	-	-	-	-	-
2-Butanone, oxime (MEKO)	Industrial chemicals	Anti-skinning agent in paints and coatings	CEPA	Yes	Yes	NA	-	-	-	-	-
2-Butoxyethanol (ethylene glycol monobutyl ether)	Industrial chemicals	Solvent commonly used in cleaning agents, paints, and cosmetics	CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
2-Ethoxyethanol	Industrial chemicals	Commercial and industrial solvent	PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
2-Methoxyethanol	Industrial chemicals	Solvent in varnishes, dyes, and resins	CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
2-Naphthalenol, 1-[(4-methyl-2-nitrophenyl)azo]- (Pigment Red 3)	Industrial chemicals	Dye	CEPA	Yes	Yes	NA	-	-	-	-	-
2-Propenamide (Acrylamide)	Industrial chemicals	Manufacturing of paper, dye, and other industrial products	CEPA	Yes	Yes	NA	-	-	-	-	-
3,3'-Dichlorobenzidine	Industrial chemicals	Production of dyes	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
3,5-Dimethylaniline	Industrial chemicals	Manufacture of dyes	PSL1	Yes	Yes	NA	-	-	-	-	-
4-Chloronitrobenzene	Industrial chemicals	Production of drugs, agricultural and rubber chemicals, oil additives, and other chemicals	IARC 2B	Yes	Regulated in BC	NA	-	X	X		-
Abamectin	Current use pesticides - Insecticides	Agriculture, greenhouses	EU Water Watchlist	No	No	Yes	Highly toxic to aquatic biota and bees	-	-	-	-
Acenaphthene	Hydrocarbons		USE EPA PL	Yes	Regulated in BC	NA	-	X	X	-	X
Acetaldehyde	Industrial chemicals	Production of herbicides, insecticides, pharmaceuticals, flavors, and plastics	CEPA, PSL2	Yes	Regulated in BC	NA	-	-	-	X	-
Acetamide, N-[4-[(2-hydroxy-5-methylphenyl)azo]phenyl]-	Industrial chemicals	Solvent, plasticizer	CEPA	Yes	Yes	NA	-	-	-	-	-
Acetamiprid	Insecticides - neonicotinoids	Agriculture	Pubmed, UNEP	No	No	Yes	Highly toxic to aquatic biota and soil fauna	-	-	-	-
Acrolein	Biocides	Byproduct of combustion, chemical production (e.g. acrylic acid), aquatic biocide.	US EPA CWA/PL, CEPA, IARC 2A, PSL2	Yes	Regulated in BC	NA	-	X	X	X	-
Acrylonitrile	Industrial chemicals	Industrial chemical used in production of plastics, synthetic rubber, and acrylic fibers	US EPA CWA, CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	X	-
Alkylated PAHs	Hydrocarbons		CCME	Yes	Yes	NA	-	-	Methylnaphthalenes	-	2-methylnaphtahlene
Aluminum chloride, aluminum nitrate, aluminum sulphate	Metals	Used in large amounts by pulp and paper mills and municipal water treatment plants	PSL2	Yes	Yes	NA	-	-	-	-	-
Amisulbrom	Fungicides	Use on potatoes (agriculture)	EU Water Watchlist	No	No	Yes	Toxic to aquatics, endocrine disruptor	-	-	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**No Schedule 2 Use, but Selected Based on BC Relevance**	**Rationale for BC Relevance**	**Available CSR Standards**			
								Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
Ammonia - dissolved and gaseous	Industrial chemicals	Industrial chemical used in production of fertilizers, refrigerants, etc	CEPA, PSL2	Yes	Regulated in BC	NA	-	-	X	X	-
Amphoteric fluorinated surfactants	Personal care products, firefighting foams, industrial chemicals	Ingredient used to create lower surface tension (in foams), create gloss in paints, corrosion inhibitor, facilitate water treatment	EU PBT	Yes	Yes	NA	-	-	-	-	-
Aniline	Industrial chemicals	Production of dyes, rubber, polymers, agricultural chemicals, and pharmaceuticals.	IARC 2A, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Anthelmintics	Pharmaceuticals	Medical and veterinary uses	Pubmed	No	No	Yes	Toxic to aquatics, soil inverts and plants	-	-	-	-
Anthracene	Hydrocarbons		IARC 2B	Yes	Regulated in BC	NA	-	X	-	-	X
Antibiotics (norfloxacin, oxytetracycline, tetracycline and tylosin)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Medical uses	EU Water Watchlist	No	No	Yes	Toxic to aquatics, many bioaccumulative, resistance	-	-	-	-
Antimony, trivalent	Metals		IARC 2A	Yes	Regulated in BC	NA	-	Total Sb	as Sb	-	-
Antineoplastic agents	Pharmaceuticals	Chemotherapy	Pubmed	No	No	Yes	Cytotoxic, genotoxic, biomagnify, toxic to terr and aquatics	-	-	-	-
Arecoline	Antihelmintic	Veterinary uses	IARC 2B	No	No	Yes	Persistent, tox and fate not well understood	-	-	-	-
Arsenic compounds - Inorganic	Metals		CEPA, WHO, PSL1, UNEP	Yes	Regulated in BC	NA	-	X	X	-	X
Asbestos		Construction, demolition, insulation	CEPA, WHO	Yes	Regulated in BC	NA	-	X	X	-	-
Aspartame	Food additives	Wastewater	IARC 2B	No	No	Yes	Toxic to aquatics and soil ecosystem	-	-	-	-
Avermectine	Pesticides, Insecticides, Anihelmintic	Agriculture, veterinary uses	EU Water Watchlist	No	Regulated in BC	NA	-	X	-	-	-
Azoles	Fungicides	Agriculture, medical uses	EU Water Watchlist	No	No	Yes	Endocrine disruptor, risk to human health and environment	-	-	-	-
Benzene	Hydrocarbons		CEPA, WHO, PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Benzene, 1,1'-methylenebis[isocyanato- (non-isomeric-specific; 2- and 4- isomers)	Industrial chemicals	Production of polyurethane foams and coatings	CEPA	Yes	Yes	NA	-	-	-	-	-
Benzene, 1,2-dimethyloxy-4-(2-propenyl)-	Personal Care Products	Essential oils	CEPA	No	No	Yes	Moderately toxic to aquatic life	-	-	-	-
Benzene, 1-chloro-2-[2,2-dichloro-1-(4-chlorophenyl)ethyl] (Mitotane)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Antineoplastic agent	CEPA	No	No	Yes	Persisent, bioacculative, toxic to aquatics	-	-	-	-
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	Industrial chemicals	Production of polyurethane products	CEPA	Yes	Yes	NA	-	-	-	-	-
Benzene, 1-methyl-2-nitro- (2-nitrotoluene)	Industrial chemicals	Explosives	CEPA	Yes	Yes	NA	-	-	-	-	-
Benzene, chloromethyl- (benzylchloride, chlorotoluene)	Industrial chemicals	Chemical synthesis of dyes/pharmaceuticals/etc	CEPA	Yes	Yes	NA	-	-	-	-	-
Benzenediol (1,2- and 1.4-)	By-products	By-product of pulp production	CEPA	Yes	Yes	NA	-	-	-	-	-
Benzidine	Industrial chemicals	Dyes	US EPA CWA, CEPA, WHO, PSL1	Yes	Regulated in BC	NA	-	X	X		-
Benzotriazoles	Industrial chemicals	Corrosion inhibitor, other	EU PBT, Pubmed	Yes	Yes	NA	-	-	-	-	-
Benzotriazoles - 1H-benzotriazole	Industrial chemicals	Corrosion inhibitor, deicing agent, other	Pubmed	Yes	Yes	NA	-	-	-	-	-
Beryllium	Metals	Coal burning, metal production, anthropogenic activity	Pubmed, US EPA CWA	Yes	Regulated in BC	NA	-	X	X	-	-
Bis(2-chloroethyl) ether	Industrial chemicals	Solvent for lacquers, resins and oils, soil fumigant, wetting agent, cleaning compound and textile finishing agent	PSL1	Yes	Regulated in BC	NA	-	X	-	-	-
Bis(2-ethylhexyl)phthalate (DEHP)	Personal Care Products - Phthalates		CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Bis(4-chlorophenyl) sulphone	Industrial chemicals	Production of polymers	EU PBT	Yes	Yes	NA	-	-	-	-	-
Bis(chloromethyl) ether	Industrial chemicals	Found as impurity in chemical products (no longer in use), waste sites	CEPA	Yes	Regulated in BC	NA	-	X	methyl ethyl ether	X	-
Bisphenol A (4,4' -(1-methylethylidene)bis-phenol)	Industrial chemicals	Production of polycarbonate plastic and epoxy resins	Pubmed, CEPA, UNEP	Yes	Regulated in BC	NA	-	X	X	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**No Schedule 2 Use, but Selected Based on BC Relevance**	**Rationale for BC Relevance**	**Available CSR Standards**			
								Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
Bromic acid, potassium salt (Potassium bromate)	Personal Care Products	Oxidizing agent, food additive, hair products	CEPA	Yes?	Regulated in BC	NA	-	-	bromate	-	-
Bromochlorodifluoromethane (Halon 1211, Freon 12B1)	Organohalogens, Halomethanes	Fire extinguishing agent	CEPA	Yes	Regulated in BC	NA	-	X	-	-	-
Bromochloromethane	Organohalogens, Halomethanes	Fire extinguishing agent	CEPA	Yes	Yes	NA	-	-	dichloro methane	-	-
Bromochlorotrifluoromethane	Organohalogens	Fire extinguishing agent	CEPA	Yes	Yes	NA	-	-	-	-	-
Bromofluorocarbons (BFCs)	Organohalogens	Fire extinguishing agent	CEPA	Yes	Yes	NA	-	-	-	-	-
Bromuconazole	Fungicides	Outdoor crops, agriculture	EU Water Watchlist	No	No	Yes	Very toxic to aquatics	-	-	-	-
Bumetrizole	Industrial chemicals	UV light absorber, primarily in plastics	EU PBT	Yes	Yes	NA	-	-	-	-	-
Butylbenzylphthalate	Personal Care Products - Phthalates		PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
Cadmium Compounds - Inorganic	Metals		CEPA, WHO, PSL1, UNEP	Yes	Regulated in BC	NA	-	X	X	-	X
Caffeine	Persistent Pharmaceutical Pollutants	Sewage	Pubmed	No	No	Yes	Toxic to aquatics and te	-	-	-	-
Carbendazim	Fungicides	Outdoor crops, agriculture	Pubmed	No	No	Yes	PBT	-	-	-	-
Carbon dioxide	Greenhouse gasses		CEPA	NA	NA	NA	-	-	-	-	-
Carbon disulfide	Industrial chemicals	Production of chemicals like rayon and	PSL2	Yes	Regulated in BC	NA	-	-	X	X	-
Chloramines - Inorganic	Disinfectants		CEPA, PSL2	No	No	Yes	Toxic to aquatics	-		-	-
Chlorinated ethanes	Industrial chemicals	Solvents, degreasers, and in the production	US EPA CWS, EU PBT	Yes	Regulated in BC	NA	-	X	X	-	-
Chlorinated ethers	Industrial chemicals	Impurity in chlorophenol preparations	US EPA CWS, EU PBT	Yes	Regulated in BC	NA	-	-	X	-	-
Chlorinated parafins (Short chain)	Plasticizers, flame retardants	Rubber, metalworking fluids, plastizier, flame	CEPA, PSL1	Yes	Yes	NA	-	-	-	-	-
Chlorinated Wastewater Effluents	Complex mixture		CEPA, PSL1	NA	NA	NA	-	-	-	-	-
Chlorobenzenes	Industrial chemicals	Production of pesticides, degreaser	US EPA CWS, EU PBT, PSL1	Yes	Regulated in BC	NA	-	X	X		-
Chlorofluorocarbon (CFC)	Industrial chemicals	Coolant for refridgerators/air conditioners, aerosol propellants, solvents	CEPA	Yes	Yes	NA	-	-	-	-	-
Chloroform	Industrial chemicals		PSL2	Yes	Regulated in BC	NA	-	X	X	X	-
Chloromethyl methyl ether	Industrial chemicals	Alkylating agent	CEPA, PSL1	Yes	Yes	NA	-	-			-
Chloronaphthalenes	Industrial chemicals	Production of fullerenes	US EPA CWS, EU PBT	Yes	Regulated in BC	NA	-	X	X		-
Chlorophenols	Industrial chemicals	Industrial manufacturing	Pubmed	Yes	Regulated in BC	NA	-	X	X		-
chlorothalonil	Fungicides		EU Water Watchlist	Yes	Regulated in BC	NA	-	X	X	-	-
Chlorpyrifos	Pesticides		EU PBT	Yes	Regulated in BC	NA	-	X	X	-	-
Chromium compounds - hexavalent	Metals		PSL1, CEPA	Yes?	Regulated in BC	NA	-	-	X	-	-
Climbazole	Fungicides		EU Water Watchlist	No	No	Yes	Persistent, mobile, toxic	-	-	-	-
Clindamycin	Antibiotics		EU Water Watchlist	No	No	Yes	Disrupts aquatic ecosystems, antiobiotic resistance	-	-	-	-
Cobalt	Metals		IARC 2A, CEPA	Yes	Regulated in BC	NA	-	X	X	-	-
Cobalt(II), soluble	Metals		IARC 2A, CEPA	Yes	Regulated in BC	NA	-	as cobalt	as cobalt	-	-
Cobalt(II)oxide	Metals		IARC 2B	Yes	Regulated in BC	NA	-	as cobalt	as cobalt	-	-
Cocaine	Personal Care Products	Sewage		No	No	Yes	Toxic	-	-	-	-
Copper Smelter/Refinery Releases	Complex mixture		PSL2	NA	NA	NA	-	-	-	-	-
Crankcase Oils (Waste)	Complex mixture		PSL1	NA	NA	NA	-	-	-	-	-
Creosote-contaminated sites	Complex mixture		PSL1	NA	NA	NA	-	-	-	-	-
Crotonaldehyde	Industrial chemicals	Chemical intermediate and by-product in combustion	IARC 2B	Yes	Regulated in BC	NA	-	X	X	-	-
Cupferron	Analytical chemicals	Separation and precipitation of metals	IARC 2B	Yes	Yes	NA	-	-	-	-	-
Cyanide, Free	Industrial chemicals	Electroplating, mining, and chemical manufacturing	EU Water Watchlist	Yes	Regulated in BC	NA	-	-	X	-	-
Cyazofamid	Fungicides		EU Water Watchlist	No	No	Yes	Toxic to aquatics	-	-	-	-
Cyclotetrasiloxane, octamethyl-	Industrial chemicals	Additive to plastic and rubber products, paints, adhesives, cosmetics, food packaging	CEPA	Yes	Yes	NA	-	-	-	-	-
Cyprodinil	Biocides, fungicides	Control fungal diseases in crops	EU Water Watchlist	Yes	Yes	NA	-	-	-	-	-
Dibromotetrafluoroethane	Haloalkanes	Refrigerant	CEPA	Yes	Yes	NA	-	-	-	-	-
Dibutyl phthalate	Personal Care Products - Phthalates		PSL1	Yes	Regulated in BC	NA	-	-	X	-	-
Dicamba	Herbicide		Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
Dichlorodiphenyltrichloroethane (DDT)	Legacy pesticides		CEPA	Yes	Regulated in BC	NA	-	X	X		X
Dichloromethane	Industrial chemicals	Paint stripping, aerosol products, and as a blowing agent in foam production	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Diclofenac	Environmental Persistent	Wastewater	Pubmed	No	No	Yes	Very toxic (aquatic	-	-	-	-
Difenoconazole	Fungicides	Agriculture	EU Water Watchlist	No	No	Yes	Toxic to soil microbes and aquatics	-	-	-	-
Dinitrotoluene	Industrial chemicals	Chemical precursor	US EPA CWA	Yes	Regulated in BC	NA	-	X	X	-	-
Di-n-octyl phthalate	Personal Care Products - Phthalates	Plasticizer	PSL1	Yes	Yes	NA	-	-		-	-
Diphenylamine	Industrial chemicals	Post-harvest treatment for apples to prevent storage scald, antioxidant in lubricants/rubber/petroleum products, stabilizer	IARC 2B	Yes	Regulated in BC	NA	-	X	X	-	-
Diquat	Herbicides		Pubmed	Yes	Regulated in BC	NA	-	X	as dibromide	-	-
Direct Blue 218	Industrial chemicals	Dye	IARC 2B	Yes	Regulated in BC	NA	-	X	-	-	-
Dodecachloropentacyclo [5.3.0.02,6.03,9.04,8] decane [Mirex]	Pesticides	Pesticide, fire retardant	CEPA	Yes	Regulated in BC	NA	-	X	X	-	-
Epoxiconazole	Fungicides		EU Water Watchlist	No	No	Yes	Persistent, toxic	-	-	-	-
Ethanol, 2-(2-methoxyethoxy)- (Methyl carbitol)	Industrial chemicals	Solvent and fuel system icing inhibitor	CEPA	Yes	Regulated in BC	NA	-	X	-	-	-
Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate (TCEP))	Industrial chemicals	Plasticizer and flame retardant	CEPA	Yes	Yes	NA	-	-	-	-	-
Ethanol, 2-methoxy-, acetate (2-methoxyethyl acetate or methyl cellosolve acetate)	Industrial chemicals	Solvent in vsurface coatings, adhesives, and textile printing	CEPA	Yes	Yes	NA	-	-	-	-	-
Ethinylestradiol, 17alpha (EE2)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Sewage	US EPA PL	No	No	Regulated in BC	-	-	X	-	-
Ethylene glycol	Industrial chemicals	Antifreeze, brake fluids	PSL2	Yes	Regulated in BC	NA	-	-	X	-	-
Ethylene oxide	Industrial chemicals	Chemical synthesis, medical sterilizing	CEPA, PSL2	Yes	Regulated in BC	NA	-	-	-	X	-
Ethylhexyl salicylate (octisalate)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Stormwater, sewage	EU Water Watchlist, US EPA PL	No	No	Yes	Persistent, bioaccumulative, toxic	-	-	-	-
Ethyloxirane (1,2-epoxy butane)	Industrial chemicals	Stabilizer of industrial solvents	CEPA	Yes	Yes	NA	-	-	-	-	-
Etoxazole	Biocides		EU Water Watchlist	No	No	Yes	PBT	-	-	-	-
Fipronil	Insecticides	agricultural, horticulture, and veterinary practices	Pubmed, EU Water Watchlist	No	No	No	No products containing the insecticide fipronil registered for use in Canada	-	-	-	-
Fluorides - Inorganic	Metals		CEPA, WHO, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Fluoxetine	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Sewage	EU Water Watchlist	No	No	Yes	PBT		-	-	-
Folpet	Pesticides		EU Water Watchlist	Yes	Regulated in BC	NA	-	X	X	-	-
Formaldehyde	Industrial chemicals		CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
Fuel Oil No. 2	Complex mixture		CEPA	NA	NA	NA	-	-	-	-	-
Gadolinium (Gd)		Medical contrast agent	Pubmed	No	No	Yes	Bioaccumulative, toxic	-	-	-	-
Gentian violet		Dye	IARC 2B	Yes	Yes	NA	-	-	-	-	-
Glycidyl methacrylate	Industrial chemicals	Epoxy resins, acrylic polymers, and adhesive	IARC 2A, CEPA	Yes	Yes	NA	-	-	-	-	-
Glyphosate	Herbicides		UNEP	Yes	Regulated in BC	NA	-	X	X	-	-
Haloethers (Chloroethers)	Industrial chemicals	Industrial organic synthesis, textile manufacture, pesticide manufacture, and as	US EPA CWA	Yes	Yes	NA	-	-	-	-	-
Halogenated PAHs (XPAHs)	Hydrocarbons	Industrial activities (like metal smelting and e-waste recycling) and incomplete combustion	CCME	Yes	Yes	NA	-	-	-	-	-
Hexabromocyclododecane (HBCD)	Flame retardants	Flame retardant in textiles and building materials	CEPA	Yes	Yes	NA	-	-	-	-	-
Hexachlorobenzene	Fungicides, Legacy pesticides		CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Hexachlorobutadiene	Industrial chemicals	Solvent, heat transfer fluid	US EPA CWA/PBT, CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	X	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
Hexanedioic acid, bis(2-ethylhexyl) ester (DEHA)	Industrial chemicals	Plasticizer in the flexible vinyl industry and widely used in flexible polyvinylchloride (PVC) food film	CEPA	Yes	Yes	NA	-	-	-	-	-
Hexanoic acid, 6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]	Industrial chemicals	Production of food additives, tobacco essence, medicines, perfumes, oil lubricants, and friction agents	SVHC	Yes	Yes	NA	-				
Hydrazine	Industrial chemicals	Corrosion inhibitor in industrial settings, particularly in boiler water treatment at power plants	CEPA	Yes	Regulated in BC	NA	-	X	X	-	-
Hydrobromofluorocarbons	Ozone depleting substances		CEPA	NA	NA	NA	-	-	-	-	-
Hydrochlorofluorocarbons	Ozone depleting substances		CEPA	NA	NA	NA	-	-	-	-	-
Hydrofluorocarbons	Greenhouse gasses	Replacements of ozone-depleting substances used in refrigeration, air conditioning, and foam blowing	CEPA	NA	NA	NA	-	-	-	-	-
Ibuprofen	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Agriculture	Pubmed	No	No	Yes	Toxic to aquatics	-	-	-	-
Imidacloprid	Insecticides - neonicotinoids	Agriculture	Pubmed	No	No	Yes	Toxic to invertebrates and bees, aquatics		-	-	-
Isocyanic acid, polymethylenepolyphenylene ester	Industrial chemicals	Manufacture of composite parts, coatings, and adhesives	CEPA	Yes	Yes	NA	-	-	-	-	-
Isophorone	Industrial chemicals	Solvent and a precursor in the production of various chemicals, particularly in the plastics and coatings industries	US EPA CWA/PL	Yes	Regulated in BC	NA	-	-	X	-	-
Itraconazole	Fungicides	Agriculture	EU Water Watchlist	No	No	Yes	Toxic to fish,				
Ketoconazole	Fungicides	Agriculture	EU Water Watchlist	No	No	Yes	PBT				
Lead	Metals		CEPA, WHO, UNEP	Yes	Regulated in BC	NA	-	X	X	-	X
Leucomalachite green	Industrial chemicals	Dyes	IARC 2B	Yes	Yes	NA	-	-	-	-	-
Lithium	Metals	Battery and electronics manufacturing and waste	Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-
Mefentrifluconazole	Fungicides		EU Water Watchlist	No	No	No	Low toxicity	-	-	-	-
Melamine	Industrial chemicals	Production of resins and foams, cleaning products, fertilizers, and pesticides	EU PBT Candidate List	Yes	Yes	NA	-	-	-	-	-
Mercury	Metals		CEPA, WHO	Yes	Regulated in BC	NA	-	X	X	-	X
Metazachlor	Pesticides, herbicides, organochlorines		EU Water Watchlist	Yes	Yes	NA	-	-	-	-	-
Metformin/guanylurea	Environmental Persistent Pharmaceutical Pollutants (EPPP)		EU Water Watchlist	No	No	Yes	Bioaccumulative, toxic	-	-	-	-
Methane	Greenhouse gasses		CEPA	NA	NA	NA	-	-	-	-	-
Methanone, bis[4-(dimethylamino)phenyl]-	Industrial chemicals		CEPA	Yes	Yes	NA	-	-	-	-	-
Methoxychlor	Insecticides, organochlorines		EU PBT	Yes	Regulated in BC	NA	-	-	X	-	-
Methy tertiary-butyl ether (MTBE)	Industrial chemicals	Gasoline additive	PSL1	Yes	Regulated in BC	NA	-	X	-	X	-
Methyl Bromide	Ozone depleting substances	Fumigant	CEPA	NA	NA	NA	-	-	-	-	-
Methyl mercury	Metals		CCME	Yes	Yes	NA	-	-	-	-	-
Methyl Methacrylate	Industrial chemicals	Production of acrylic glass and as a component in various adhesives and coatings	PSL1	Yes	Regulated in BC	NA	-	X	-	X	-
Methylium, [4-(dimethylamino)phenyl]bis[4-(ethylamino)3-methylphenyl]-, acetate	Organometals, industrial chemicals	Chemical synthesis	CEPA	Yes	Yes	NA	-	-	-	-	-
Methyloxirane (propylene oxide)	Industrial chemicals	Production of polyether polyols/polyurethane foams/propylene glycol, food additive	CEPA	Yes	Yes	NA	-	-	-	-	-
metolachlor	Herbicides		EU Water Watchlist	Yes	Regulated in BC	NA	-	X	X	-	-
Microfibers	Microfibers	Receycling, landfills	Pubmed	Yes	Yes	NA	-	-	-	-	-
Microplastics (MP)/nanoplastic particles (NPs)(MNPs <10 µm), plastic additives	Microplastics	Plastic producers, receycling, landfills, waste water	Pubmed, UNEP	Yes	Yes	NA	-	-	-	-	-
Microrubber	Microrubber	Run-off, sewage	Pubmed	Yes	Yes	NA	-	-	-	-	-
N,N-diethyl-3-toluamide (DEET)	Personal Care Products	Stormwater, sewage	US EPA PL	No	No	No	*"low environmental impact "*	-	-	-	-
N,N-Dimethylacetamide	Industrial chemicals	Solvent in industrial applications	IARC 2B	Yes	Regulated in BC	NA	-	X	-	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
N,N-Dimethylformamide (DMF)	Industrial chemicals	Solvent, reagent in the production of acrylic fibers and plastics, peptide coupling for pharmaceuticals, pesticide development, adhesives, synthetic leathers, and surface coatings	PSL2	Yes	Regulated in BC	NA	-	X	X	X	-
Nanoparticles - carbon	Nanoparticles		Pubmed	Yes	Yes	NA	-	-	-	-	-
Nanoparticles - copper oxide	Nanoparticles		Pubmed	Yes	Yes	NA	-	-	-	-	-
Nanoparticles - silica (SiNPs)	Nanoparticles	Soil remediation, fertilizers	Pubmed	Yes	Yes	NA	-	-	-	-	-
Nanoparticles (NPs) or Nanomaterials (NMs)	Nanoparticles	Stormwater, sewage, 3D printing, sunscreens, cosmetics, sporting goods, stain resistant clothing, tires and electronics medical diagnosis/imaging/drug delivery	US EPA priority list, Pubmed, OECD	Yes	Yes	NA	-	-	-	-	-
Nanoparticles- silver	Nanoparticles		Pubmed	Yes	Yes	NA	-	-	-	-	-
Naphthalene	Hydrocarbons		CEPA	Yes	Regulated in BC	NA	-	X	X	X	X
Natural Gas Condensates	Complex mixture		CEPA	NA	NA	NA	-	-	-	-	-
n-Butyl glycidyl ether	Industrial chemicals	Ingredient in epoxy resin, adhesives, sealants, and as a stabilizer for chlorinated	CEPA, IARC 2B	Yes	Yes	NA	-	-		-	-
Neonicotinoids and metabolites	Insecticides - neonicotinoids		Pubmed, UNEP	No	No	Yes	Highly toxic to	-	-	-	-
Nickel compounds - Inorganic (Oxidic, sulphidic, and soluble)	Metals		CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Nicotine	Personal Care Products	Sewage	Pubmed	No	No	Yes	Toxic	-	-	-	-
Nitric Oxide	Greenhouse gasses, Ozone depleting substances	Agriculture	CEPA	NA	NA	NA	-	-	-	-	-
Nitrobenzene	Industrial chemicals	Precursor in the production of aniline (dye and rubber manufacturing)	US EPA PL, US EPA CWA	Yes	Regulated in BC	NA	-	X	X	X	
Nitrogen dioxide	Greenhouse gasses	Combustion	CEPA	NA	NA	NA	-	-	-	-	-
Nitrophenols	Industrial chemicals	Manufacture of drugs, fungicides, insecticides, and dyes	US EPA PL, US EPA CWA	Yes	Regulated in BC	NA	-	X	-	-	-
Nitrosamines	Byproducts	Byproducts in food production and drug manufacturing	US EPA PL, US EPA CWA, CalEPA	Yes	Regulated in BC	NA	-	-	X	-	-
Nitrous oxide	Industrial chemicals	Pain reliever and anesthetic, propellant for whipped cream, metal fabrication,	CEPA	Yes	Yes	NA	-	-	-	-	-
N-Nitrosodimethylamine (NDMA)	Byproducts	By-product and contaminant from various	CEPA, PSL2, CalEPA	Yes	Regulated in BC	NA	-	X	X	-	-
Non-nutritive artificial sweeteners		Food industry, waste water	Pubmed	No	No	Yes	Persistent, toxic to	-	-	-	-
Nonylphenol (NP) and ethoxylates (NPE)		Surfactants found in detergents and pesticides	CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
Novel brominated flame retardants (NBFRs)	Flame retardants	Replacement chemicals for polybrominated	Pubmed	Yes	Yes	NA	-	-	-	-	-
O,O,O-triphenyl phosphorothioate	Industrial chemicals	Lubricating agents and additives, hydraulic fluids	SVHC	Yes	Yes	NA	-				
Octafluorocyclobutane (perfluorocyclobutane or RC318)	Industrial chemicals	Niche applications, including food packaging gas and propellant	CEPA	Yes	Yes	NA	-	-	-	-	-
Ofloxacin	Antibiotics		EU Water Watchlist	No	No	Yes	Toxic to aquatics	-	-	-	-
Organophosphate pesticides - emerging	Organophosphates	Agriculture	Pubmed	No	No	Yes	Toxic	-	-	-	-
Organotin compounds (non-pesticidal)	Organometals, biocides	Antifouling agents	PSL1	Yes	Yes	NA	-	-	-	-	-
ortho-Anisidine (2-Methoxyaniline)	Industrial chemicals	Intermediates in the production of azo dyes and in biochemical research	IARC 2A	Yes	Yes	NA	-	-	-	-	-
ortho-Phenylenediamine dihydrochloride	Industrial chemicals	Manufacture of dyes, photography, organic synthesis	IARC 2B	Yes	Regulated in BC	NA	-	-	X	-	-
Oxirane, (chloromethyl)-	Industrial chemicals	Industrial precursor	CEPA	Yes	Yes	NA	-	-	-	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
Oxirane, 2,2',2'',2'''-[1,2-ethanediylidenetetrakis(4,1-phenyleneoxymethylene)]tetrakis-	Industrial chemicals	Industrial precursor	CEPA	Yes	Yes	NA	-	-	-	-	-
Ozone	Greenhouse gasses		CEPA	NA	NA	NA	-	-	-	-	-
para-Nitroanisole	Industrial chemicals	Pharmaceutical intermediate	IARC 2B	No	No	Yes	Persistent, toxic	-	-	-	-
Pentachlorobenzene (PeCB)	Industrial chemicals	Impurity in pesticides and PCP, burning organic matter	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Pentachlorothiophenol (PCTP)	Biocides, fungicides	Agriculture, industrial settings	US EPA PBT	Yes	Yes	NA	-	-	-	-	-
Perchlorate	Industrial chemicals	Military, ammunition, fireworks	US EPA PL, Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-
Perfluamine (perfluorotripropylamine or FTPA)	Industrial chemicals	Production of polymers, heat transfer fluid, solvent, and in the electronics industry for cooling and insulation	HVSC	Yes	Yes	NA	-				
Perfluorocarboxylic acids (PFCA)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	NA	-	-		-	-
PFAS	PFAS	Waste water, airports, fire suppression	US EPA PL	Yes	Regulated in BC	NA	-	-	-	-	-
PFAS - Hexane, 1,6-diisocyanato-, homopolymer, reaction products with alpha-fluoro-omega-2-hydroxyethyl-poly(difluoro-methylene), C16-20-branched alcohols and 1-octadecanol (CAS RN 1246542-93-7)	PFAS		CEPA	Yes	Yes	NA	-	-	-	-	-
PFAS - Perfluorobutane sulfonic acid (PFBS) and its salts	PFAS	Food packaging, fire suppressant	EU PBT	Yes	Regulated in BC	NA	-	X	X	-	-
PFAS - Perfluorooctanoic acid (PFOA)	PFAS	Waste water, airports, fire suppression	CEPA, US EPA PL, IARC 1	Yes	Regulated in BC	NA	-	-	X	-	-
PFAS - PFOS	PFAS	Waste water, airports, fire suppression	CEPA, IARC 2B	Yes	Regulated in BC	NA	-	X	X	-	-
PFAS - Trifluoro acetic acid	PFAS		UNEP	Yes	Yes	NA	-	-	-	-	-
PFAS - 1. 2-propen-1-ol, reaction products with pentafluoroiodoethane tetrafluoroethylene telomer,dehydroiodinated, reaction products with epichlorohydrin and triethylenetetramine (CAS RN 464178-90-3)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	NA	-	-	-	-	-
PFAS - 1. 2-propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with butyl 2-propenoateand 2,5 furandione, gamma-omega-perfluoro-C8-14-alkyl esters, tert-Bu benzenecarboperoxoate-initiated (CAS RN 459415-06-6)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	NA	-	-	-	-	-
PFAS - 1. 2-propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, gamma-omega-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate (CAS RN 203743-03-7)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	NA	-	-	-	-	-
Pharmaceuticals (alkylphenols, gemfibrozil, gabapentin, metazachlor, propranolol, amiodarone, dronedarone, disulfiram, fluoxetine and citalopram)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Waste water	EU Water Watchlist	No	No	Yes	Toxic, endochrine disru	-	-	-	-
Phenol: Isopropylated phosphate (PIP)	Industrial chemicals	Flame retardant, lubricant	US EPA PBT	Yes	Yes	NA	-	-	-	-	-
Phenolic benzotriazoles	Industrial chemicals	UV filters used in coating products, adhesives, sealants, plastics	EU PBT	Yes	Yes	NA	-	-	-	-	-
Phenols and methylated phenols (cresols, xylenols, mesitol, durenol)	Industrial chemicals	Chemical intermediates in the production of fragrances, dyes, pesticides, antioxidants, and plastics	US EPA CWA, CEPA, PSL2	Yes	Regulated in BC	NA	-	X	X	-	-
Phthalate esters	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	Pubmed, US EPA PL, UNEP	Yes	Yes	NA	-	p-phthalic acid	p-phthalic acid	-	-
Phthalate esters - Butyl Benzyl Phthalate (BBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-
Phthalate esters - Di(2-ethylhexyl) phthalate (DEHP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	Pubmed, US EPA PL	Yes	Yes	NA	-	-	-	-	-
Phthalate esters - Dibutyl Phthalate (DBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-
Phthalate esters - Dicyclohexyl Phthalate (DCHP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-
Phthalate esters - Diisobutyl Phthalate (DIBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**No Schedule 2 Use, but Selected Based on BC Relevance**	**Rationale for BC Relevance**	**Available CSR Standards**			
								Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
Phthalate esters - Diisodecyl Phthalate (DIDP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-
Phthalate esters - Diisononyl Phthalate (DINP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	NA	-	-	-	-	-
Plastic Manufactured Items	Complex mixture		CEPA	NA	NA	NA	-	-	-	-	-
Plastic Microbeads			CEPA	No	No	Yes	Toxic, bioaccumulative	-	-	-	-
Polybrominated biphenyls	Flame retardants	Flame retardant	CEPA	Yes	Yes	NA	-	-	-	-	-
Polybrominated Diphenyl Ethers	Flame retardants	Flame retardant	US EPA PBT, CEPA	Yes	Yes	NA	-	-	-	-	-
Polychlorinated Biphenyls (PCBs)	Industrial chemicals	Electrical equipment, heat exchangers, hydraulic systems	CEPA	Yes	Regulated in BC	NA	-	X	-	-	X
Polychlorinated dibenzodioxins (PCDD)	Dioxins & furans	Commercial chemicals, incineration, pulp and	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	-	-	X
Polychlorinated dibenzodioxins (PCDD) - Dibenzo-para-dioxin (TCDD)	Dioxins & furans	Commercial chemicals, incineration, pulp and	CEPA, WHO	Yes	Regulated in BC	NA	-	X	-	-	-
Polychlorinated dibenzofurans (PCDF)	Dioxins & furans	Commercial chemicals, incineration, pulp and	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	-	-	X
Polychlorinated naphthalenes (PCNs)	Industrial chemicals	By-product of industrial processes involving chlorine	CEPA	Yes	Yes	NA	-	-	-	-	-
Polychlorinated Terphenyls	Industrial chemicals	Lubricating and cutting oils	CEPA	Yes	Yes	NA	-	-	-	-	
Polycyclic Aromatic Hydrocarbons (PAH)	Hydrocarbons		UNEP, CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	X
PREPOD	Antioxidant	Rubber; Reaction product of 2-propanone with diphenylamine	CEPA	Yes	Yes	NA	-	-	-	-	-
Propane, 2-nitro-	Industrial chemicals	Manufacture of inks, paints, adhesives, varnishes, polymers, synthetic materials, and pharmaceuticals	CEPA	Yes	Yes	NA	-	-	-	-	-
Propiconazole	Fungicides		EU Water Watchlist	No	No	Yes	PBT	-	-	-	-
Propranolol	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Heart medication	EU Water Watchlist	No	No	Yes	Toxic	-	-	-	-
Pulp Mill Effluent (using bleaching)	Complex mixture		PSL1	NA	NA	NA	-	-	-	-	-
Quinoline	Hydrocarbons		CEPA	Yes	Regulated in BC	NA	-	X	-	-	-
Reactive Brown 51 (tetra(sodium/potassium) 7-[(E)-(2-acetamido-4-[(E)-(4-[[4-chloro-6-([2-[(4-fluoro-6-[[4-(vinylsulfonyl)phenyl]amino}-1,3,5-triazine-2-yl)amino]propyl}amino)-1,3,5-triazine-2-yl]amino}-5-sulfonato-1-naphthyl)diazenyl]-5-methoxyphenyl]diazenyl]-1,3,6-naphthalenetrisulfonate)	Industrial chemicals		SVHC	Yes	Yes	NA	-				
Refractory ceramic fibre	Synthetic vitreous fibers		CEPA, PSL1	Yes	Yes	NA	-	-	-	-	-
Respirable Particulate Matter	Complex mixture		CEPA, PSL2	NA	NA	NA	-	-	-	-	-
Road Salt	Complex mixture		PSL2	NA	NA	NA	-	as Na/Cl	as Na/Cl and salinity	-	-
Selenium	Metals		CEPA	Yes	Regulated in BC	NA	-	X	X	-	-
Siloxanes	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	EU PBT list, SVHC	Yes	Yes	NA	-	-	-	-	-
Siloxanes - Cyclotrisiloxane (D3)	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	CMP	Yes	Yes	NA					
Siloxanes - Decamethylcyclopentasiloxane (D5)	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	CMP	Yes	Yes	NA					
Siloxanes - Decamethyltetrasiloxane (L4)	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	SVHC, CMP	Yes	Yes	NA	-				
Siloxanes - Divinyltetramethyldisiloxane (dvTMDS)	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	CMP	Yes	Yes	NA					
Siloxanes - Dodecamethylcyclohexasiloxane	Industrial chemicals	Cosmetics, personal care products, medical	CMP	Yes	Yes	NA					
Siloxanes - Dodecamethylpentasiloxane (L5))	Industrial chemicals	Cosmetics, personal care products, medical	CMP	Yes	Yes	NA					
Siloxanes - Hexamethyldisiloxane (L2)	Industrial chemicals	Cosmetics, personal care products, medical	CMP	Yes	Yes	NA					
Siloxanes - Octamethylcyclotetrasiloxane (D4)	Industrial chemicals	Cosmetics, personal care products, medical	CMP	Yes	Yes	NA					
Siloxanes - Octamethyltrisiloxane (MDM)	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	SVHC	Yes	Yes	NA	-				
Siloxanes - Trisiloxane, 1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxy]	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	SVHC	Yes	Yes	NA	-				
Sitagliptin	Environmental Persistent Pharmaceutical Pollutants (EPPP)		EU Water Watchlist	No	No	No	*"Insignificant risk to environment"*	-	-	-	-
Styrene	Hydrocarbons		PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Sucralose	Artificial sweeteners	Waste water	Pubmed	No	No	No	-	-	-	-	-

Table 2. Emerging Contaminants Masterlist

TASK 1A				TASK 1B							
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	No Schedule 2 Use, but Selected Based on BC Relevance	Rationale for BC Relevance	Available CSR Standards			
								Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
Sulphur dioxide	Air pollutants		CEPA	NA	NA	NA	-	-	-	-	-
Sulphur hexafluoride	Industrial gas, air polltants	Electric insulator	CEPA	NA	NA	NA	-	-	-	-	-
Sulphuric acid diethyl ester	Industrial chemicals	Ethylating agents	CEPA	Yes	Yes	NA	-	-	-	-	-
Sulphuric acid dimethyl ester	Industrial chemicals	Methylating agents	CEPA	Yes	Yes	NA	-	-	-	-	-
Sunscreen agents (Butyl methoxydibenzoyl-methane, Octocrylene, Benzophenone-3, Octisalate (2-ethylhexyl salicylate))	Personal Care Products		EU Water Watchlist	No	No	Yes	PBT	-	-	-	-
Talc	Industrial chemicals	Component in paints, plastics, paper, and ceramics, as well as in cosmetics and pharmaceuticals	IARC 2A, CEPA	Yes	Yes	NA	-	-	-	-	-
Tetrabutyl tins	Organotins	Biocides	CEPA, UNEP	Yes	Yes	NA	-	-	-	-	-
Tetrachlorobenzenes (TeCBs)	Industrial chemicals	Dielectric fluids and dyestuff carriers (formerly)	CEPA, PSL1	Yes	Regulated in BC	NA	-	X	X	-	-
Tetrachloroethylene (perchloroethylene (PCE))	Industrial chemicals	Solvent in dry cleaning and metal degreasing	CEPA, PSL1	Yes	Regulated in BC	NA	-	-	X	X	-
Tetrachloromethane	Ozone depleting substances	Industrial and solvent applications	CEPA	NA	NA	NA	-	-	-	-	-
Tetracycline/Oxytetracycline	Pharmaceuticals		EU Water Watchlist	No	No	Yes	Toxic	-	-	-	-
Textile Mill Effluent	Complex mixture		PSL2	NA	NA	NA	-	-	-	-	-
Thallium	Metals	Coal burning, metal production, anthropogenic activity	Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-
Thiacloprid	Insectides - Neonictinoids		EU Water Watchlist	No	No	Yes	Toxic to wildlife, bees	-	-	-	-
Thiamethoxam	Insectides - Neonictinoids		EU Water Watchlist	No	No	Yes	Little info	-	-	-	-
Thiourea	Industrial chemical	Metal finishing, printed circuit board manufacturing, copper refining, and as a rust inhibitor	CEPA	Yes	Yes	NA	-	-	-	-	-
Tire Wear Particles	Tire Wear Particles	Roadways, landfills	EU Water Watchlist, CalEPA	Yes	Yes	NA	-	-	-	-	-
Tire Wear Particles - 6-PPD (N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine)	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes	NA					
Tire Wear Particles - 6-PPD-Q	Tire Wear Particles (transformation products)	Roadways, landfills	EU Water Watchlist, CalEPA	Yes	Yes	NA	-	-	-	-	-
Tire Wear Particles - DPPD	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes	NA					
Tire Wear Particles - IPPD	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes	NA					
Toluene	Hydrocarbons		PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Toluene diisocyanates	Industrial chemicals	Preparation of polyurethane foams,	CEPA	Yes	Yes	NA	-	-	-	-	-
Tributyl Tin (TBT)	Organotins	PVC, pesticides, biocides	CEPA, UNEP	Yes	Regulated in BC	NA	-	X	X	-	-
Tributyltetradecylphosphonium chloride	Biocides		CEPA	No	No	No	Prohibited use,	-	-	-	-
Trichlorobenzenes	Industrial chemicals	Industrial solvents, dye carriers, and in chemical production	PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Trichloroethylene (TCE)	Industrial chemicals	Degreasing solvent for metal parts in industries like automotive and metalworking, adhesives, paint removers, spot removers	US EPA priority list, CEPA, PSL1	Yes	Regulated in BC	NA	-	-	X	X	-
Triclocarban (TCC)	Antibacterial agents	Wastewater	Pubmed	No	No	Yes	BT	-	-	-	-
Triclosan (5-chloro-2-(2,4-dichlorophenoxy)-phenol)	Antibacterial agents	Bacteriostat, preservative, antiseptic, and disinfectant	CEPA, Pubmed, UNEP	Yes	Yes	NA	-	-	-	-	-
Triphenylthiophosphate and tertiary butylated phenyl derivatives (reaction mass of)	Industrial chemicals	Lubricants and greases, hydraulic fluids and metal working fluids	SVHC	Yes	Yes	NA	-				
Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)	Flame retardant additives, organophosphates		Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-
Triticonazole	Fungicides		EU Water Watchlist	No	No	Yes	Little info	-	-	-	-
Tungsten	Industrial chemicals	Mining, welding, oil drilling, electrical and aerospace industries, bullets.	US EPA, Pubmed	Yes	Regulated in BC	NA	-	X	X	-	-
Vanadium pentoxide	Industrial chemicals	Industrial processes, including the production of sulfuric acid and metal alloys	CEPA	Yes	Yes	NA	-	-		-	-
Vinyl chloride	Industrial chemicals		CEPA	Yes	Regulated in BC	NA	-	X	X	X	-
Xylenes	Hydrocarbons		PSL1	Yes	Regulated in BC	NA	-	X	X	X	-
Zinc Smelter/Refinery Releases	Complex mixture		PSL2	NA	NA	NA	-	-	zinc	-	zinc

Table 3. Emerging Contaminant List - 1 (ECL-1)

TASK 1A				TASK 1B					
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**Available CSR Standards**			
						Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
Acetamide, N-[4-[(2-hydroxy-5-methylphenyl)azo]phenyl]-	Industrial chemicals	Solvent, plasticizer	CEPA	Yes	Yes	-	-	-	-
Alkylated PAHs	Hydrocarbons		CCME	Yes	Yes	-	Methylnaphthalenes	-	2-methylnaphtahlene
Aluminum chloride, aluminum nitrate, aluminum sulphate	Metals	Used in large amounts by pulp and paper mills and municipal water treatment plants	PSL2	Yes	Yes	-	-	-	-
Amphoteric fluorinated surfactants	Personal care products, firefighting foams, industrial chemicals	Ingredient used to create lower surface tension (in foams), create gloss in paints, corrosion inhibitor, facilitate water treatment	EU PBT	Yes	Yes	-	-	-	-
ortho-Anisidine (2-Methoxyaniline)	Industrial chemicals	Intermediates in the production of azo dyes and in biochemical research	IARC 2A	Yes	Yes	-	-	-	-
Benzene, 1,1'-methylenebis[isocyanato- (non-isomeric-specific; 2- and 4- isomers)	Industrial chemicals	Production of polyurethane foams and coatings	CEPA	Yes	Yes	-	-	-	-
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	Industrial chemicals	Production of polyurethane products	CEPA	Yes	Yes	-	-	-	-
Benzene, 1-methyl-2-nitro- (2-nitrotoluene)	Industrial chemicals	Explosives	CEPA	Yes	Yes	-	-	-	-
Benzene, chloromethyl- (benzylchloride, chlorotoluene)	Industrial chemicals	Chemical synthesis of dyes/pharmaceuticals/etc	CEPA	Yes	Yes	-	-	-	-
Benzenediol (1,2- and 1.4-)	By-products	By-product of pulp production	CEPA	Yes	Yes	-	-	-	-
Benzotriazoles	Industrial chemicals	Corrosion inhibitor, other	EU PBT, Pubmed	Yes	Yes	-	-	-	-
Benzotriazoles - 1H-benzotriazole	Industrial chemicals	Corrosion inhibitor, deicing agent, other	Pubmed	Yes	Yes	-	-	-	-
Bis(4-chlorophenyl) sulphone	Industrial chemicals	Production of polymers	EU PBT	Yes	Yes	-	-	-	-
Bromochloromethane	Organohalogens, Halomethanes	Fire extinguishing agent	CEPA	Yes	Yes	-	dichloro methane	-	-
1-Bromo-3-chloropropane	Organohalogens	Intermediate in the manufacture of	IARC 2B	Yes	Yes	-	-	-	-
Bromochlorotrifluoromethane	Organohalogens	Fire extinguishing agent	CEPA	Yes	Yes	-	-	-	-
Bromofluorocarbons (BFCs)	Organohalogens	Fire extinguishing agent	CEPA	Yes	Yes	-	-	-	-
Bumetrizole	Industrial chemicals	UV light absorber, primarily in plastics	EU PBT	Yes	Yes	-	-	-	-
1,3-Butadiene, 2-methyl- (Isoprene)	Industrial chemicals	Synthetic rubber production (tires)	CEPA	Yes	Yes	-	-	-	-
2-Butanone, oxime (MEKO)	Industrial chemicals	Anti-skinning agent in paints and coatings	CEPA	Yes	Yes	-	-	-	-
n-Butyl glycidyl ether	Industrial chemicals	Ingredient in epoxy resin, adhesives, sealants, and as a stabilizer for chlorinated	CEPA, IARC 2B	Yes	Yes	-		-	-
Chlorinated parafins (Short chain)	Plasticizers, flame retardants	Rubber, metalworking fluids, plastizier, flame	CEPA, PSL1	Yes	Yes	-	-	-	-
Chlorofluorocarbon (CFC)	Industrial chemicals	Coolant for refridgerators/air conditioners, aerosol propellants, solvents	CEPA	Yes	Yes	-	-	-	-
Chloromethyl methyl ether	Industrial chemicals	Alkylating agent	CEPA, PSL1	Yes	Yes	-			-
(4-Chlorophenyl)cyclopropylmethanone,O-[(4-nitrophenyl)methyl]oxime (NCC Ether)	Industrial chemicals	Chemical intermediate in the manufacture of a pesticide	CEPA	Yes	Yes	-	-	-	-
Cupferron	Analytical chemicals	Separation and precipitation of metals	IARC 2B	Yes	Yes	-	-	-	-
Cyclotetrasiloxane, octamethyl-	Industrial chemicals	Additive to plastic and rubber products, paints, adhesives, cosmetics, food packaging	CEPA	Yes	Yes	-	-	-	-
Cyprodinil	Biocides, fungicides	Control fungal diseases in crops	EU Water Watchlist	Yes	Yes	-	-	-	-
Dibromotetrafluoroethane	Haloalkanes	Refrigerant	CEPA	Yes	Yes	-	-	-	-
2,4-Dichloro-1-nitrobenzene	Industrial chemicals	Pesticide synthesis	IARC 2B	Yes	Yes	-	-	-	-
3,5-Dimethylaniline	Industrial chemicals	Manufacture of dyes	PSL1	Yes	Yes	-	-	-	-
1,2-Diphenylhydrazine (Hydrazobenzene)	Industrial chemicals	Manufacture of dyes, pharmaceuticals, and hydrogen peroxide	US EPA CWA, IARC 2B	Yes	Yes	-	-	-	-
Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate (TCEP))	Industrial chemicals	Plasticizer and flame retardant	CEPA	Yes	Yes	-	-	-	-
Ethanol, 2-methoxy-, acetate (2-methoxyethyl acetate or methyl cellosolve acetate)	Industrial chemicals	Solvent in vsurface coatings, adhesives, and textile printing	CEPA	Yes	Yes	-	-	-	-
Ethyloxirane (1,2-epoxy butane)	Industrial chemicals	Stabilizer of industrial solvents	CEPA	Yes	Yes	-	-	-	-
Gentian violet		Dye	IARC 2B	Yes	Yes	-	-	-	-
Glycidyl methacrylate	Industrial chemicals	Epoxy resins, acrylic polymers, and adhesive	IARC 2A, CEPA	Yes	Yes	-	-	-	-
Haloethers (Chloroethers)	Industrial chemicals	Industrial organic synthesis, textile manufacture, pesticide manufacture, and as	US EPA CWA	Yes	Yes	-	-	-	-
Halogenated PAHs (XPAHs)	Hydrocarbons	Industrial activities (like metal smelting and e-waste recycling) and incomplete combustion	CCME	Yes	Yes	-	-	-	-

Table 3. Emerging Contaminant List - 1 (ECL-1)

TASK 1A				TASK 1B					
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**Available CSR Standards**			
						Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
Hexabromocyclododecane (HBCD)	Flame retardants	Flame retardant in textiles and building materials	CEPA	Yes	Yes	-	-	-	-
Hexanedioic acid, bis(2-ethylhexyl) ester (DEHA)	Industrial chemicals	Plasticizer in the flexible vinyl industry and widely used in flexible polyvinylchloride (PVC) food film	CEPA	Yes	Yes	-	-	-	-
Hexanoic acid, 6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]	Industrial chemicals	Production of food additives, tobacco essence, medicines, perfumes, oil lubricants, and friction agents	SVHC	Yes	Yes				
Isocyanic acid, polymethylenepolyphenylene ester	Industrial chemicals	Manufacture of composite parts, coatings, and adhesives	CEPA	Yes	Yes	-	-	-	-
Leucomalachite green	Industrial chemicals	Dyes	IARC 2B	Yes	Yes	-	-	-	-
Melamine	Industrial chemicals	Production of resins and foams, cleaning products, fertilizers, and pesticides	EU PBT Candidate List	Yes	Yes	-	-	-	-
Metazachlor	Pesticides, herbicides, organochlorines		EU Water Watchlist	Yes	Yes	-	-	-	-
Methanone, bis[4-(dimethylamino)phenyl]-	Industrial chemicals		CEPA	Yes	Yes	-	-	-	-
Methyl mercury	Metals		CCME	Yes	Yes	-	-	-	-
Methylium, [4-(dimethylamino)phenyl]bis[4-(ethylamino)3-methylphenyl]-, acetate	Organometals, industrial chemicals	Chemical synthesis	CEPA	Yes	Yes	-	-	-	-
Methyloxirane (propylene oxide)	Industrial chemicals	Production of polyether polyols/polyurethane foams/propylene glycol, food additive	CEPA	Yes	Yes	-	-	-	-
Microfibers	Microfibers	Receycling, landfills	Pubmed	Yes	Yes	-	-	-	-
Microplastics (MP)/nanoplastic particles (NPs)(MNPs <10 µm), plastic additives	Microplastics	Plastic producers, receycling, landfills, waste water	Pubmed, UNEP	Yes	Yes	-	-	-	-
Microrubber	Microrubber	Run-off, sewage	Pubmed	Yes	Yes	-	-	-	-
Nanoparticles (NPs) or Nanomaterials (NMs)	Nanoparticles	Stormwater, sewage, 3D printing, sunscreens, cosmetics, sporting goods, stain resistant clothing, tires and electronics medical diagnosis/imaging/drug delivery	US EPA priority list, Pubmed, OECD	Yes	Yes	-	-	-	-
Nanoparticles - carbon	Nanoparticles		Pubmed	Yes	Yes	-	-	-	-
Nanoparticles - copper oxide	Nanoparticles		Pubmed	Yes	Yes	-	-	-	-
Nanoparticles - silica (SiNPs)	Nanoparticles	Soil remediation, fertilizers	Pubmed	Yes	Yes	-	-	-	-
Nanoparticles- silver	Nanoparticles		Pubmed	Yes	Yes	-	-	-	-
2-Naphthalenol, 1-[(4-methyl-2-nitrophenyl)azo]- (Pigment Red 3)	Industrial chemicals	Dye	CEPA	Yes	Yes	-	-	-	-
Nitrous oxide	Industrial chemicals	Pain reliever and anesthetic, propellant for whipped cream, metal fabrication,	CEPA	Yes	Yes	-	-	-	-
Novel brominated flame retardants (NBFRs)	Flame retardants	Replacement chemicals for polybrominated	Pubmed	Yes	Yes	-	-	-	-
Octafluorocyclobutane (perfluorocyclobutane or RC318)	Industrial chemicals	Niche applications, including food packaging gas and propellant	CEPA	Yes	Yes	-	-	-	-
Organotin compounds (non-pesticidal)	Organometals, biocides	Antifouling agents	PSL1	Yes	Yes	-	-	-	-
Oxirane, (chloromethyl)-	Industrial chemicals	Industrial precursor	CEPA	Yes	Yes	-	-	-	-
Oxirane, 2,2',2'',2'''-[1,2-ethanediylidenetetrakis(4,1-	Industrial chemicals	Industrial precursor	CEPA	Yes	Yes	-	-	-	-
Pentachlorothiophenol (PCTP)	Biocides, fungicides	Agriculture, industrial settings	US EPA PBT	Yes	Yes	-	-	-	-
Perfluamine (perfluorotripropylamine or FTPA)	Industrial chemicals	Production of polymers, heat transfer fluid, solvent, and in the electronics industry for cooling and insulation	HVSC	Yes	Yes				
Perfluorocarboxylic acids (PFCA)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	-		-	-
PFAS - Hexane, 1,6-diisocyanato-, homopolymer, reaction products with alpha-fluoro-omega-2-hydroxyethyl-poly(difluoro-methylene), C16-20-branched alcohols and 1-octadecanol (CAS RN 1246542-93-7)	PFAS		CEPA	Yes	Yes	-	-	-	-
PFAS - Triftuoro acetic acid	PFAS		UNEP	Yes	Yes	-	-	-	-

Table 3. Emerging Contaminant List - 1 (ECL-1)

TASK 1A				TASK 1B					
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**Selected Based on Schedule 2 Use**	**Available CSR Standards**			
						Soil - Schedule 3.1	**Water - Schedule 3.2**	**Vapour - Schedule 3.3**	**Sediment - Schedule 3.4**
PFAS - 2-propen-1-ol, reaction products with pentafluoroiodoethane tetrafluoroethylene telomer,dehydroiodinated, reaction products with epichlorohydrin and triethylenetetramine (CAS RN 464178-90-3)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	-	-	-	-
PFAS - 2-propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with butyl 2-propenoateand 2,5 furandione, gamma-omega-perfluoro-C8-14-alkyl esters, tert-Bu benzenecarboperoxoate-initiated (CAS RN 459415-06-6)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	-	-	-	-
PFAS - 2-propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, gamma-omega-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate (CAS RN 203743-03-7)	PFAS	Waste water, airports, fire suppression	CEPA	Yes	Yes	-	-	-	-
Phenol: Isopropylated phosphate (PIP)	Industrial chemicals	Flame retardant, lubricant	US EPA PBT	Yes	Yes	-	-	-	-
Phenolic benzotriazoles	Industrial chemicals	UV filters used in coating products, adhesives, sealants, plastics	EU PBT	Yes	Yes	-	-	-	-
Phthalate esters	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	Pubmed, US EPA PL, UNEP	Yes	Yes	p-phthalic acid	p-phthalic acid	-	-
Phthalate esters - Butyl Benzyl Phthalate (BBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Di(2-ethylhexyl) phthalate (DEHP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	Pubmed, US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Dibutyl Phthalate (DBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Dicyclohexyl Phthalate (DCHP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Diisobutyl Phthalate (DIBP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Diisodecyl Phthalate (DIDP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Diisononyl Phthalate (DINP)	Personal Care Products - Phthalates	Plastics, cosmetics, household products, waste water	US EPA PL	Yes	Yes	-	-	-	-
Phthalate esters - Di-n-octyl phthalate	Personal Care Products - Phthalates	Plasticizer	PSL1	Yes	Yes	-		-	-
Polybrominated biphenyls	Flame retardants	Flame retardant	CEPA	Yes	Yes	-	-	-	-
Polybrominated diphenyl ethers	Flame retardants	Flame retardant	US EPA PBT, CEPA	Yes	Yes	-	-	-	-
Polychlorinated naphthalenes (PCNs)	Industrial chemicals	By-product of industrial processes involving chlorine	CEPA	Yes	Yes	-	-	-	-
Polychlorinated terphenyls	Industrial chemicals	Lubricating and cutting oils	CEPA	Yes	Yes	-	-	-	
PREPOD	Antioxidant	Rubber; Reaction product of 2-propanone with diphenylamine	CEPA	Yes	Yes	-	-	-	-
Propane, 2-nitro-	Industrial chemicals	Manufacture of inks, paints, adhesives, varnishes, polymers, synthetic materials, and pharmaceuticals	CEPA	Yes	Yes	-	-	-	-
1-Propanol, 2-methoxy-	Industrial chemicals	Chemical solvent and byproduct	CEPA	Yes	Yes	-	-	-	-
2-Propenamide (Acrylamide)	Industrial chemicals	Manufacturing of paper, dye, and other industrial products	CEPA	Yes	Yes	-	-	-	-
Reactive Brown 51 (tetra(sodium/potassium) 7-[(E)-{2-acetamido-4-[(E)-(4-[[4-chloro-6-((2-[(4-fluoro-6-[[4-(vinylsulfonyl)phenyl]amino}-1,3,5-triazine-2-yl)amino]propyl}amino)-1,3,5-triazine-2-yl]amino}-5-sulfonato-1-naphthyl)diazenyl]-5-methoxyphenyl}diazenyl]-1,3,6-naphthalenetrisulfonate)	Industrial chemicals		SVHC	Yes	Yes				
Refractory ceramic fibre	Synthetic vitreous fibers		CEPA, PSL1	Yes	Yes	-	-	-	-
Siloxanes	Industrial chemicals	Cosmetics, personal care products, medical devices, waterrepellants, industrial materials	EU PBT list, SVHC	Yes	Yes	-	-	-	-
Sulphuric acid diethyl ester	Industrial chemicals	Ethylating agents	CEPA	Yes	Yes	-	-	-	-
Sulphuric acid dimethyl ester	Industrial chemicals	Methylating agents	CEPA	Yes	Yes	-	-	-	-

Table 3. Emerging Contaminant List - 1 (ECL-1)

TASK 1A				TASK 1B					
Potential Emerging Contaminant	Chemical Group	Source(s)/Use(s)	Reference	CSR Schedule 2 Use	Selected Based on Schedule 2 Use	Available CSR Standards			
						Soil - Schedule 3.1	Water - Schedule 3.2	Vapour - Schedule 3.3	Sediment - Schedule 3.4
Talc	Industrial chemicals	Component in paints, plastics, paper, and ceramics, as well as in cosmetics and pharmaceuticals	IARC 2A, CEPA	Yes	Yes	-	-	-	-
Tetrabutyl tins	Organotins	Biocides	CEPA, UNEP	Yes	Yes	-	-	-	-
Thiourea	Industrial chemical	Metal finishing, printed circuit board manufacturing, copper refining, and as a rust inhibitor	CEPA	Yes	Yes	-	-	-	-
Tire Wear Particles	Tire Wear Particles	Roadways, landfills	EU Water Watchlist, CalEPA	Yes	Yes	-	-	-	-
Tire Wear Particles - 6-PPD (N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine)	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes				
Tire Wear Particles - 6-PPD-Q	Tire Wear Particles (transformation products)	Roadways, landfills	EU Water Watchlist, CalEPA	Yes	Yes	-	-	-	-
Tire Wear Particles - DPPD	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes				
Tire Wear Particles - IPPD	Tire Wear Particles	Roadways, landfills	Not listed	Yes	Yes				
Toluene diisocyanates	Industrial chemicals	Preparation of polyurethane foams,	CEPA	Yes	Yes	-	-	-	-
Triclosan (5-chloro-2-(2,4-dichlorophenoxy)-phenol)	Antibacterial agents	Bacteriostat, preservative, antiseptic, and disinfectant	CEPA, Pubmed, UNEP	Yes	Yes	-	-	-	-
O,O,O-triphenyl phosphorothioate	Industrial chemicals	Lubricating agents and additives, hydraulic fluids	SVHC	Yes	Yes				
Triphenylthiophosphate and tertiary butylated phenyl derivatives (reaction mass of)	Industrial chemicals	Lubricants and greases, hydraulic fluids and metal working fluids	SVHC	Yes	Yes				
2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	Fuel additives	Automotive repair shops, marinas	US EPA PBT, EU PBT	Yes	Yes	-	-	-	-
Vanadium pentoxide	Industrial chemicals	Industrial processes, including the production of sulfuric acid and metal alloys	CEPA	Yes	Yes	-		-	-

Table 4. Emerging Contaminant List - 2 (ECL-2)

TASK 1A				TASK 1B		
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**No Schedule 2 use, but Selected Based on BC Relevance**	**Rationale for BC Relevance**
1,4-Benzenediamine (N,N'-mixed phenyl and tolyl derivatives)	Unknown	antioxidant and antiozonant in rubber	CEPA	No	Yes	Toxic to aquatic life
Abamectin	Current use pesticides - Insecticides	Agriculture, greenhouses	EU Water Watchlist	No	Yes	Highly toxic to aquatic life and bees
Acetamiprid	Insecticides - neonicotinoids	Agriculture	Pubmed, UNEP	No	Yes	Highly toxic to aquatic life and soil invertebrate communities
Amisulbrom	Fungicides	Use on potatoes (agriculture)	EU Water Watchlist	No	Yes	Toxic to aquatic life, endocrine disruptor
Anthelmintics	Pharmaceuticals	Medical and veterinary uses	Pubmed	No	Yes	Toxic to aquatic life, soil inverts and plants
Antibiotics (norfloxacin, oxytetracycline, tetracycline and tylosin)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Medical uses	EU Water Watchlist	No	Yes	Toxic to aquatic life, many bioaccumulative, antibiotic resistance
Antineoplastic agents	Pharmaceuticals	Chemotherapy	Pubmed	No	Yes	Cytotoxic, genotoxic, bioaccumulative, toxic to terrestrial and aquatic communities
Arecoline	Antihelmintic	Veterinary uses	IARC 2B	No	Yes	Persistent, but toxicity and fate not well understood
Aspartame	Food additives	Wastewater	IARC 2B	No	Yes	Toxic to aquatic life and soil ecosystem
Azoles	Fungicides	Agriculture, medical uses	EU Water Watchlist	No	Yes	Endocrine disruptor, risk to human health and environment
Benzene, 1,2-dimethyloxy-4-(2-propenyl)-	Personal Care Products	Essential oils	CEPA	No	Yes	Moderately toxic to aquatic life
Benzene, 1-chloro-2-[2,2-dichloro-1-(4-chlorophenyl)ethyl] (Mitotane)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Antineoplastic agent	CEPA	No	Yes	Persisent, bioacculative, toxic to aquatic life
Bromuconazole	Fungicides	Outdoor crops, agriculture	EU Water Watchlist	No	Yes	Very toxic to aquatic life
Caffeine	Persistent Pharmaceutical Pollutants	Sewage	Pubmed	No	Yes	Toxic to aquatic life and terrestrial receptors
Carbendazim	Fungicides	Outdoor crops, agriculture	Pubmed	No	Yes	PBT
Chloramines - Inorganic	Disinfectants		CEPA, PSL2	No	Yes	Toxic to aquatic life
Climbazole	Fungicides		EU Water Watchlist	No	Yes	Persistent, mobile, toxic
Clindamycin	Antibiotics		EU Water Watchlist	No	Yes	Disrupts aquatic ecosystems, antiobiotic resistance
Cocaine	Personal Care Products	Sewage		No	Yes	Toxic
Cyazofamid	Fungicides		EU Water Watchlist	No	Yes	Toxic to aquatic life
Diclofenac	Environmental Persistent	Wastewater	Pubmed	No	Yes	Very toxic (aquatic and terrestrial), biomagnifies
Difenoconazole	Fungicides	Agriculture	EU Water Watchlist	No	Yes	Toxic to soil microbes and aquatic life
Epoxiconazole	Fungicides		EU Water Watchlist	No	Yes	Persistent, toxic
Ethylhexyl salicylate (octisalate)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Stormwater, sewage	EU Water Watchlist, US EPA PL	No	Yes	PBT
Etoxazole	Biocides		EU Water Watchlist	No	Yes	PBT
Fluoxetine	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Sewage	EU Water Watchlist	No	Yes	PBT
Gadolinium (Gd)		Medical contrast agent	Pubmed	No	Yes	Bioaccumulative, toxic
Ibuprofen	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Agriculture	Pubmed	No	Yes	Toxic to aquatic life
Imidacloprid	Insecticides - neonicotinoids	Agriculture	Pubmed	No	Yes	Toxic to invertebrates and bees, aquatics
Itraconazole	Fungicides	Agriculture	EU Water Watchlist	No	Yes	Toxic to fish, endocrine disruptor
Ketoconazole	Fungicides	Agriculture	EU Water Watchlist	No	Yes	PBT
Metformin/guanylurea	Environmental Persistent Pharmaceutical Pollutants (EPPP)		EU Water Watchlist	No	Yes	Bioaccumulative, toxic
Neonicotinoids and metabolites	Insecticides - neonicotinoids		Pubmed, UNEP	No	Yes	Highly toxic to pollinators and aquatic life, persistent
Nicotine	Personal Care Products	Sewage	Pubmed	No	Yes	Toxic
Non-nutritive artificial sweeteners		Food industry, waste water	Pubmed	No	Yes	Persistent, toxic to aquatic life
Ofloxacin	Antibiotics		EU Water Watchlist	No	Yes	Toxic to aquatic life
Organophosphate pesticides - emerging	Organophosphates	Agriculture	Pubmed	No	Yes	Toxic
para-Nitroanisole	Industrial chemicals	Pharmaceutical intermediate	IARC 2B	No	Yes	Persistent, toxic
Pharmaceuticals (alkylphenols, gemfibrozil, gabapentin, metazachlor, propranolol, amiodarone, dronedarone, disulfiram, fluoxetine and citalopram)	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Waste water	EU Water Watchlist	No	Yes	Toxic, endochrine disruption
Plastic Microbeads			CEPA	No	Yes	Toxic, bioaccumulative

Table 4. Emerging Contaminant List - 2 (ECL-2)

TASK 1A				TASK 1B		
Potential Emerging Contaminant	**Chemical Group**	**Source(s)/Use(s)**	**Reference**	**CSR Schedule 2 Use**	**No Schedule 2 use, but Selected Based on BC Relevance**	**Rationale for BC Relevance**
Propiconazole	Fungicides		EU Water Watchlist	No	Yes	PBT
Propranolol	Environmental Persistent Pharmaceutical Pollutants (EPPP)	Heart medication	EU Water Watchlist	No	Yes	Toxic
Sunscreen agents (Butyl methoxydibenzoyl-methane, Octocrylene, Benzophenone-3, Octisalate (2-ethylhexyl salicylate))	Personal Care Products		EU Water Watchlist	No	Yes	PBT
Tetracycline/Oxytetracycline	Pharmaceuticals		EU Water Watchlist	No	Yes	Toxic
Thiacloprid	Insectides - Neonictinoids		EU Water Watchlist	No	Yes	Toxic to wildlife, bees
Thiamethoxam	Insectides - Neonictinoids		EU Water Watchlist	No	Yes	Little info
Triclocarban (TCC)	Antibacterial agents	Wastewater	Pubmed	No	Yes	Bioaccumulative, toxic
Triticonazole	Fungicides		EU Water Watchlist	No	Yes	Little info

Table 5. ECL-1 Prioritization

TASK 2											
	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
Acetamide, N-[4-[(2-hydroxy-5-methylphenyl)azo]phenyl]-	Likely short	Likely short	Unlikely to occur	<10 days	Yes	Yes	No	Yes	Info gap	Low	3
Alkylated PAHs	< 2 months	10-15 days	Varies significantly	Varies significantly	Yes	No	Yes	Yes	Increased risk of cancer, particularly lung cancer, and potential damage to liver, kidneys and skin.	Highly abundant, persistent, can bioaccumulate in the food chain and exhibit toxicity.	1
Aluminum chloride, aluminum nitrate, aluminum sulphate	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Evidence of neurotoxicity	Toxic to aquatic life, terrestrial plants	1
Amphoteric fluorinated surfactants	>1,000 years	<3 months	Long - Persistent	Info gap	Yes	Yes	Yes	No	Exposure can cause liver, thyroid, and immune system issues. Potential carcinogen.	Bioaccumulation in organisms, leading to toxicity and ecosystem-wide impacts.	1
ortho-Anisidine (2-Methoxyaniline)	Short	1 month to 1 year	>1 year	<10 hours	Yes	Slightly	No	Yes	Blood, organ toxicity, possible human carcinogen	Toxic to aquatic life	2
Benzene, chloromethyl- (benzylchloride, chlorotoluene)	<6 months	<90 days	<1 year	<5 days	Yes	No	No	Yes	Probable carcinogen, liver and kidney toxin	Moderately toxic to aquatic life	1
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	Likely short	Likely short	Likely short	info gap	No	No	No	Yes	Respiratory and skin sensitization, potential carcinogen	Toxic to aquatic life	1
Benzene, 1,1'-methylenebis[isocyanato- (non-isomeric-specific; 2- and 4- isomers)	info gap	Likely short	info gap	<2 days	No	No	No	Yes	Respiratory and skin sensitization	Low toxicity to aquatic and terrestrial biota	3
Benzene, 1-methyl-2-nitro- (2-nitrotoluene)	<1 year	info gap - likely short	info gap	<50 days	Yes	Yes	No	Yes	Carcinogenicity, heritable genetic damage and potential repoductive toxicity	Moderate hazard to aquatic life	1
Benzenediol (1,2- and 1.4-)	<180 days	info gap - likely short	info gap	info gap - likely short	Yes	Yes	No	No	Potential carcinogenicity and reproductive damage	Moderate hazard to aquatic life	1
Benzotriazoles	3 months to 1 year	2 days to 1 week	Long - Persistent	Unlikely to occur	Yes	Yes - low	Yes	Yes	No significant human health risk	Potential for ecotoxicity, persistence and bioaccumulation	1
- 1H-benzotriazole	<1 year	<8days	<180 days	<8 days	No	Yes	No	No	Low human health risk	Potential risk to aquatic ecossytems	3
Bis(4-chlorophenyl) sulphone	<3.5 years	<3.5 years	<3.5 years	Low	Yes	No	Yes	No	Breast cancer, diabetes, reproductive health issues	Bioaccumulate in organisms and toxic to wildlife	1
Bromochloromethane	<5 months	<44 years	info gap	<5.5 months	Yes	No	No	Yes	Skin and lung irritant	Toxic to aquatic organisms	3
1-Bromo-3-chloropropane	Likely short	<8 hours	Unlikely to occur	<18 days	Yes	Yes	No	Yes	Skin, eye and lung irritant	Toxic to aquatic organisms	3
Bromochlorotrifluoromethane	Unlikely to occur	info gap	info gap	info gap	Yes	No	No	Yes	Central nervous system effects, respiratory irritation and cardiac sensitization		3
Bromofluorocarbons (BFCs)	Unlikely to be present	None	Info gap	Info gap	Yes - low	Yes - low	Yes	Yes	If inhaled, can cause nervous sytem depression, heart problems, and respiratory issues at high concentrations	Bioaccumulation potential	1
Bumetrizole	<1 year	<7 months	<7 months	info gap	Yes	Yes	Yes	No	No significant health risk	Low ecological risk	1

Table 5. ECL-1 Prioritization

TASK 2											
	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
1,3-Butadiene, 2-methyl- (Isoprene)	<1 month	<1 week	Hours	<20 hours	Yes	No	No	Yes	Skin and eye irritant		3
2-Butanone, oxime (MEKO)	<11 days	<18 days	info gap	<8 days	Yes	Yes	No	Yes	Skin and eye irritant, respiratory tract irritation, central nervous system effects and potential carcinogenic	Low ecological risk	1
n-Butyl glycidyl ether	<6 months	<2 weeks	<1 year	<19 hours	No	Yes - low	No	Yes	Skin, lung and eye irritant	Low ecological risk	3
Chlorinated parafins (Short chain)	Long - persistent over years	<5 years	<1 year	~1 week	No - limited	No	Yes	Semi-volatile	Risks to liver, kidney, and thyroid damage, may be carcinogenic	Toxic to aquatic organims, impacts on food webs	1
Chlorofluorocarbon (CFC)	Long - persistent over years	Long - persistent over years	Long - persistent over years	~55 years	Yes	No	No	Yes	Central nerous system effects - intoxication, heart disturbances and asphyxiation		2
Chloromethyl methyl ether	Info gap	Short (<1 second)	Unlikely to occur	~2.5 days	Yes	In most organic solvents -	No	Yes	Severe respiratory irritation and pulmonary edema upon acute exposure - carcinogenic	Inherent toxicity	1
(4-Chlorophenyl)cyclopropylmethanone,O-[(4-nitrophenyl)methyl]oxime (NCC Ether)	1-2 weeks	<1 week	Info gap	Info gap	Info gap	Yes	Yes	Yes	High human health risk	Low ecological risk	1
Cupferron	Info gap	Info gap	Info gap	Low - a couple	Yes	Yes	Yes	No	Skin and eye irritant	Risk to aquatic environments and toxic to terrestial vertebrates	1
Cyclotetrasiloxane, octamethyl-	Not persistent	~45 days	<1.6 years	5-16 days	Yes -	Low in	No	Yes	Low human health risk	Toxic to aquatic organims	3
Cyprodinil	13-15 days	~two weeks	Info gap	A couple hours	Yes - low	Yes - low	No	Yes	Low human health risk	Toxic to aquatic organisms, especially fish and crustaceans	2
Dibromotetrafluoroethane	Info gap	Info gap	<6 months	Info gap	No	Yes - low	Yes	Yes	Low human health risk		1
2,4-Dichloro-1-nitrobenzene	<1 month	~8 years	info gap	1 week	Yes	No	Yes	Yes	Carcinogenic	Toxic to aquatic life	1
3,5-Dimethylaniline	<1 week	~120 days	info gap	2 hours	Yes - low	Yes	No	Yes	Low human health risk	Low ecological risk	3
1,2-Diphenylhydrazine (Hydrazobenzene)	Info gap	~15 min	info gap	5 hours	Yes - low	Yes	Yes	No	Carcinogenic - urinary and bladder	Very toxic to aquatic life	1
Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate (TCEP))	~4 months	~4 months	info gap	info gap	Yes	Yes	No	Yes	Carcinogenic, kidney damage, neurological effects and reproductive issues	Harm to freshwater ecosystems affecting reproduction and nervous sytems	1
Ethanol, 2-methoxy-, acetate (2-methoxyethyl acetate or methyl cellosolve acetate)	<1 month	<3 hours	info gap	18 hours	Yes	Yes	No	Yes	Severe reproductive and developmental toxicity - irritation to eyes, nose, throat, and lungs	Harmful to aquatic organisms - low	2
Ethyloxirane (1,2-epoxy butane)	<6 months	<1 week	>1 year	~1 week	Yes	Yes	No	Yes	Potentially carcinogenic and genotoxic with acute risk including skin, eye and respiratory irritation	Toxic to aquatic life	1
Gentian violet	None	<2 hours	info gap	None	Yes	Yes	No	No	Alter genetic material, genotoxic carcinogenic	High toxicity to aquatic life	1
Glycidyl methacrylate	Short	<4 days	None	None	Yes	Yes	No	Yes - low	Probable carcinogenic	Toxic to aquatic life	1
Haloethers (Chloroethers)	10 to 12 years	<1 minute	Varies significantly	<2 days	Yes	Yes	Info gap	Yes	Suspected or known carcinogens	Toxic to aquatic life at low concentrations, persistent in water	1

Table 5. ECL-1 Prioritization

TASK 2	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
Halogenated PAHs (XPAHs)	Info gap	Info gap	Info gap	Info gap	Info gap	Yes	Yes	Info gap	DNA damage, immunotoxicity, and potential carcinogenicity, can exhibit dioxin-like and PCB-like toxicity through AhR activation	Bioaccumulating because of low metabolism	1
Hexabromocyclododecane (HBCD)	~ 2 months	<5 years	years-decades	2-3 days	Yes	Yes	Yes	No	Potential developmental, reproductive and nerological effects	Potential harm to aquatic oganisms and wildlife	1
Hexanoic acid, 6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]	Info gap	Info gap	Info gap	Info gap	Yes	No	Yes	Yes	Potential damage to fertility - irritation to eyes	Potential harm to aquatic oganisms and wildlife	1
Hexanedioic acid, bis(2-ethylhexyl) ester (DEHA)	~3 days	~1 month	Info gap	~16 hours	Yes	No	No	Yes	Carcinogenic	Low ecological risk	1
Isocyanic acid, polymethylenepolyphenylene ester	None	<1 minute	Info gap	Variable	Yes - low	No	No	No	Irritant	Low ecological risk	3
Leucomalachite green	Info gap	~6 days	Weeks to months	None	Yes	Yes - low	Yes	No	Possible carcinogenic	Harm to aquatic life	1
Melamine	None	~27 years	2-3 years	~2 weeks	Yes	Yes	No	No	Harmful to the urinary system and potentially causing kidney stones, kidney failure and cancer	Widespread in water systems, potential to release microplastics from melamine-based products	1
metazachlor	~1 month	~7 months	~1 month	~1 month	Yes - moderate	Yes - low	No	Yes - low	Acute toxicity	Inhibting plant growth and toxic to aquatic organims	2
Methanone, bis[4-(dimethylamino)phenyl]-	6 months	6-7 months	6-7 months	Info gap	Yes	No	Info gap	No	carcinogenic and potential genotoxic properties	Moderate risk - toxic to aquatic life	1
Methylium, [4-(dimethylamino)phenyl]bis[4-(ethylamino)3-methylphenyl]-, acetate	info gap	info gap	info gap	info gap	info gap	info gap	Yes	Info gap	No risk	Info gap	1
Methyl mercury	>decade	2-3 months	<3 days	None	Yes	No	Yes	No	Neurological damage, developmental delays, impaired coordination, vision, hearing and speech	Toxic to aquatic life - neurotoxicity and physiological damage in aquatic organisms	1
Methyloxirane (propylene oxide)	~6 months	~1 month	~1 year	~1 month	Yes	Yes	No	Yes	Carcinogenic	Persistence in the environment and inherent toxicity	1
Microfibers	None	None	~1.5 years	None	Yes	Yes	Yes	Yes	Respiratory problems, inflammation, asthma, bronchitis and autoimmune diseases	Physically harm organisms, reproductive problems, DNA damage, and developmental abnormalities	2
Microplastics (MP)/nanoplastic particles (NPs)(MNPs <10 µm), plastic additives	Info gap	Info gap	<1 year	Info gap	Yes	No	Yes	Yes	Cancer, reproductive problems, and inflammatory diseases by damaging cells/organs	Accumulating in the body leading to a wide range of negative effects	2
Microrubber	Info gap	Info gap	Info gap	Info gap	Yes	Info gap	Yes	Info gap	Heart, lung, and developmental problems, endocrine disruption, crossing blood-brain barrier	Toxicity from physical particles themselves causing blockages and the leaching of harmful chemicals like zinc, BPA, and phthalates, which can	1
Nanoparticles (NPs) or Nanomaterials (NMs)	Info gap	Info gap	Info gap	Info gap	Yes	Yes	Yes	No	Damage to the respiratory, cardiovascular, and nervous systems, enter the bloodstream and accumulate in organs, cellular damage, DNA damage, toxic metal release	Increased ecoligical toxicity - small size and extensive surface area. Can enter the environemnt through various pathways and interact with existing particles, posing risks to wildlife	2

Table 5. ECL-1 Prioritization

TASK 2											
	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
Nanoparticles- silver	None	Months	Info gap	Info gap	Yes	No	Yes	No	DNA damage, cell death, inflammation via oxidative stress and free radical generation	disrupting soil microbial processes, altering aquative ecosystems and causing toxicity to aquatice organisms including reproductive damage in bivalves	1
Nanoparticles - carbon	None	>10 years	1,400 yrs	6 hrs	Yes	No	Yes	Yes	inflammation, lung damage, increasing respiratory and cardiovascular disease, carcinogenic	disrupt cell membranes and cause oxidative stress, genotoxicity, and damage to cellular components in various organisms	1
Nanoparticles - copper oxide	Varies significantly	Days	None	None	Yes	Yes	Yes	No	Oxidative stress, inflammation, and cell damage	Oxidative stress, interfering with cellular functions, disrupting ecosystems through bioaccumulation	1
Nanoparticles - silica (SiNPs)	Varies significantly	Varies significantly	Info gap (maybe 3 hours)	Info gap	Info gap	Yes - low	No	No	Oxidative stress, inflammation, and cell damage	Toxic to some organisms, particularly aquatic life	2
2-Naphthalenol, 1-[(4-methyl-2-nitrophenyl)azo]- (Pigment Red 3)	Info gap	Info gap	Info gap	Info gap	Yes	No	No	No	Potential concern for human health	No ecological risk	3
Nitrous oxide	~10 days	~5 min	~4 days	~5 min	Yes	Yes	No	No	Neurological and hematological effects		3
Novel brominated flame retardants (NBFRs)	Up to 30 years	Varies significantly	Up to 30 years	Info gap	Yes	No	Yes	Yes	Endocrine disruption, affecting thyroid hormone levels, and neurodevelopment issues such as impaired cognitive and motor functions	bioaccumulation in food chains, trophic magnification and potential toxicity to wildlife	1
Octafluorocyclobutane (perfluorocyclobutane or RC318)	Info gap	Info gap	None	>3,200 yrs	Yes - low	No	No	Yes	Irritant to skin and eyes, damage to lungs if inhaled		3
Organotin compounds (non-pesticidal)	<15 yrs	Months	~2 yrs	Short	Yes	Yes - low	Yes	No	Endocrine system, liver, and immune system issues - can cause damage to	Poses risks to aquatic organisms due to their presence in wate and	1
Oxirane, (chloromethyl)-	Info gap	None	Info gap	Short	Yes	Yes	No	Yes	Carcinogen, acute effects on skin and eyes, lung damage, chronic issues such as skin allergies and decreased male fertility	Moderate to high toxicity to aquatic organisms and its potential for long-lasting effects on the environment, especially water	1
Oxirane, 2,2',2'',2'''-[1,2-ethanediylidenetetrakis(4,1-phenyleneoxymethylene)]tetrakis-	Info gap	None	Varies significantly	Info gap	Yes - low	Info gap	Yes	No	Potential carcinogen	Does not pose ecological risk	1
Pentachlorothiophenol (PCTP)	Varies significantly	Hundreds of years	Info gap	Info gap	Yes - low	No	Yes	Yes	Minor irritation to the eyes and respiratory system	Toxic to the environment	1
Perfluamine (perfluorotripropylamine or FTPA)	Info gap	~2 months	Info gap	~6 months - 1 yr	Yes	No	Yes	Yes	liver damage, reduced immune function, and increased cholesterol levels	multifaceted toxicity to aquatic organisms - reproductive, developmental toxicity	1

Table 5. ECL-1 Prioritization

TASK 2	Chemical Properties								Toxicity		
Emerging Contaminant	**Half Life Soil**	**Half Life Water**	**Half Life Sediment**	**Half Life Air**	**Leachable**	**Soluble**	**Bioaccumulative**	**Volatile**	**Human Health Risk**	**Ecological Risk**	**Priority**
Perfluorocarboxylic acids (PFCA)	1 to 2.4 yrs	None	Up to 1000 yrs	Varies significantly	Yes	Yes	Yes	No	Liver, kidney, thyroid, immune, and nervous system issues as well as impacts on reproduction, development, metabolism, and increased cholesterol levels	Extreme persistence in the environment, widespread occurrence in remote areas, and ability to accumulate and biomagnify in wildlife - reproductive harm and impacts on the immune/nervous system	1
PFAS					(line intentionally left blanc)						
Hexane, 1,6-diisocyanato-, homopolymer, reaction products with alpha-fluoro-omega-2-hydroxyethyl-poly(difluoro- methylene), C16-20-branched alcohols and 1-octadecanol (CAS RN 1246542-93-7)	Info gap	Info gap	Info gap	Info gap	Info gap	Info gap	Yes	No	Potential adverse effects like thyroid, live and kidney damage and immunotoxicity	Potential harm to aquatic oganisms and wildlife	1
2-propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, gamma-omega-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate (CAS RN 203743-03-7)	Info gap	Info gap	Info gap	Info gap	Info gap	No	Yes	No	Carcinogenic, immune system dysfunction, hormone disruption, thyroid and liver disease, high cholesterol, and reproductive and developmental issues	Extreme persistence, bioaccumulate and biomagnify in organims - toxic	1
2-propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with butyl 2-propenoateand 2,5 furandione, gamma-omega-perfluoro-C8-14-alkyl esters, tert-Bu benzenecarboperoxoate-initiated (CAS RN 459415-06-6)	Long	~4 yrs	Info gap	None	Yes	No	Info gap	Yes	Carcinogenic, immune system dysfunction, hormone disruption, thyroid and liver disease, high cholesterol, and reproductive and developmental issues	Persistent, toxic	1
2-propen-1-ol, reaction products with pentafluoroiodoethane tetrafluoroethylene telomer,dehydroiodinated, reaction products with epichlorohydrin and triethylenetetramine (CAS RN 464178-90-3)	Info gap	Permanent (stable)	<7 yrs	~2 days	Yes	Yes	Yes	Yes	Immunosuppression, altered metabolism, thyroid and liver disease, and increased cancer risk	Bioaccumulative, persistent, toxic	1
Trifluoro acetic acid	Hundred of years	Hundred of years	Hundred of years	Hundred of years	Yes	Yes	No	Yes	Corrosive chemical - severe irritation to skin and eyes. Can irritate the nose, throat and lungs if inhaled	Low toxicity but can lead to potential long term impacts	2
Phenol: Isopropylated phosphate (PIP)	Info gap	None	Info gap	Info gap	Yes	No	Yes	No	Potential for reproductive and developmental effects, neurological effects, and systemic effects on organs like the liver, heart, and lungs	Toxic to aquatic plants, aquatic invertebrates, sediment invertebrates and fish; persistent, bioaccumulative	1
Phenolic benzotriazoles	~6 months	Varies significantly	~1.5 yrs	<12 hours	Yes - slow	Yes - low	Yes	No	Endocrine and liver toxicity	Pose ecological risks due to their persistence and potential for bioaccumulation	1
Phthalate esters					(line intentionally left blanc)						
- Diisodecyl Phthalate (DIDP)	Several months (3+)	~2 weeks	3 months	1/2 day	Yes	No	Yes - low	No	Developmental toxicity and liver damage	No ecological risk	2
- Diisononyl Phthalate (DINP)	~20 days	~10 days	3 months	1/2 day	Yes	Yes	No	Yes - low	Developmental toxicity, liver harm, and potential carcinogen	Harm to aquatic and terrestial ecosystems	2

Table 5. ECL-1 Prioritization

TASK 2	Chemical Properties								Toxicity		
Emerging Contaminant	**Half Life Soil**	**Half Life Water**	**Half Life Sediment**	**Half Life Air**	**Leachable**	**Soluble**	**Bioaccumulative**	**Volatile**	**Human Health Risk**	**Ecological Risk**	**Priority**
- Butyl Benzyl Phthalate (BBP)	<1 week	<2 days	4.5 months	<1 day	Yes	No	Yes	Yes - low	Birth defects or other reproductive harm	Reproductive toxicity in aquatic organisms. Trigger oxidative stress and neurotoxicity in soil organims and increase bioaccumulation and long-term environmental risks	1
- Di(2-ethylhexyl) phthalate (DEHP)	Up to several months	>100 years	Varies significantly	5 hours	Yes	No	Yes	No	Birth defects or other reproductive harm	Impairs biological functions and can lead to DNA and metabolic disruptions	1
- Diisobutyl Phthalate (DIBP)	>20 days	Up to 2 weeks	<10 days	~3 days	Yes	No	No	Yes	Reduced testosterone, abnormal anogenital distance in male offspring and potential liver toxicity	Risk to aquatic species - reproductive and developmental toxicity	1
- Dibutyl Phthalate (DBP)	~ 2 weeks	~2 weeks	~10 days	~2 days	Yes	Yes - low	Yes	No	Adverse effects on reproductive system development and function	Risk to aquatic species - reproductive and developmental toxicity	1
- Dicyclohexyl Phthalate (DCHP)	<3 weeks	Info gap	Info gap	Info gap	Yes	Yes - low	Yes	Yes	Adverse effects on reproductive system development and function	Risk to aquatic species - reproductive and developmental toxicity	1
- Di-n-octyl phthalate	Varies significantly	>100 days	Info gap	<2 days	Yes - low	No	No	No	Linked to liver and immune system damage, potential harm to male/female development and	Potentially accumulating in aquatic life and contaminating soil and groundwater	2
Polybrominated biphenyls	<1 year	~11 years	<2 years	~11 years	Yes	No	Yes	No	Liver damage, endocrine disruption (especially thyroid function), and developmental issues like neurobehavioral problems and potential birth defects, carcinogenicity	Liver damage, bioaccumulative, persistent, toxic	1
Polybrominated diphenyl ethers	Info gap	~5 months	<2 years	2 to 10 years	Yes	No	Yes	No	Liver damage (including tumors), hormonal and immune system disturbances, and reproductive system issues	Bioaccumulative, persistent, toxic	1
Polychlorinated terphenyls	Info gap	Info gap	Info gap	Info gap	Yes	No	Yes	No	Liver damage (including tumors), hormonal and immune system disturbances	Bioaccumulative, persistent, toxic	
Polychlorinated naphthalenes (PCNs)	<10 days	~2 months	months to years	Up to a year	Yes - low	No	Yes	Yes	Liver damage, neurotoxicity, immune suppression, and endocrine disruption	Significant ecological risk due to their persistence, bioaccumulation and toxicity in aquatic and terrestial ecosystems	1
Tire Wear Particles	(line intentionally left blanc)										
6-PPD (N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine)	<2 days	<3 days	2.5-3 months	None	Yes	No	No	Yes	Neurobehavioral changes, metabolic dysfunction, and organ damage	Acute mortality in aquatic organisms	1
6-PPD-Q (and DPPD, IPPD)	<2 days	~2 weeks	up to 50 days	~1.5 days	Yes	No	Yes	No	Adverse health effects, hepatotoxicity, enterotoxicity, detected in human blood, urine, and cerebrospinal fluid	Acute mortality in salmonids, chronic effects expected in aquatic and terrestrial organisms when accumulating	1

Table 5. ECL-1 Prioritization

TASK 2	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
PREPOD	None	<10 days	>1 year	1-2 hours	Yes	Info gap	Yes	No	Does not pose a risk to human health	Potential harm to aquatic organisms - highly toxic	1
Propane, 2-nitro-	Info gap	Info gap	~2 months	~3.5 months	Yes	Yes	No	Yes	Carcinogenic, liver & kidney damage, central nervous system effects	Low ecological risk - doesn't persist in the environment	1
1-Propanol, 2-methoxy-	<1 week	<1 week	None	~3 hours	Yes	Yes	No	Yes	Skin and eye irritation, respiratory issues, and systemic health effects like nausea, dizziness, and anesthetic effects upon high exposure	Low ecological risk - doesn't persist in the environment	3
2-Propenamide (Acrylamide)	<2 days	<6 months	<4 days	None	Yes	Yes	No	Yes	Probably human carcinogen and cause neurological, reproductive, and	Moderate ecological risk, acute and chronic toxicity to aquatic life	1
Reactive Brown 51 (tetra(sodium/potassium) 7-[(E)-{2-acetamido-4-[(E)-(4-{[4-chloro-6-({2-[(4-fluoro-6-{[4-(vinylsulfonyl)phenyl]amino}-1,3,5-	Info gap	Info gap	Info gap	None	Info gap	Yes	Yes	No	Toxic for reproduction	Harmful aromatic amines and has a high potential for bioaccumulation and ecotoxicity to aquatic life	1
Refractory ceramic fibre	None	None	None	None	Info gap	No	No	No	Respiratory irritation, such as cough and nasal congestion and potential cancer risk, particularly lung cancer and mesothelioma	Primarily through their potential inhalation exposure when physically disturbed - leading to possible contamination of soil, water and air	1
Siloxanes	~3-4 months	Info gap	Hours to years	Hours to weeks	Yes - low	No	Yes	Yes	Low human health risk, but damage to organs through prolonged or repeated exposure	Generally assumed low ecological risk, but certain substances may be persistent and/or toxic to aquatic life	1
Sulphuric acid diethyl ester	<2 hrs	<2 hrs	Short	<6 hrs	Yes - low	No	No	Yes	Toxic - likely carcinogenic chemical, burns on contact, harmful if inhaled or ingested, permanent organ damage	Toxic to aquatic environments and waterways	1
Sulphuric acid dimethyl ester	1.2 days	4.5 hrs	<1 yr	>2 weeks	No	Yes - low	No	Yes	Harmful to human health	Low ecological risk	3
Talc	None	None	None	7-10 days	Yes	No	No	No	Lung damage from inhalation and a potential increased risk of ovarian cancer	No ecological risk	2
Tetrabutyl tins	<5 yrs	<30 yrs	<10 yrs	weeks to	Yes	No	Yes	No	Skin and eye irritation, potential liver	Harmful to aquatic organisms at low	1
Thiourea	1.5 to 2.5 days	~17 days	Info gap	<3 hrs	Yes	Yes	No	No	Potential carcinogen	Disrupts microbial activity, alters pH, disrupt nutrient cycles and leads to acumulation of toxic compounds	1
Toluene diisocyanates	Short	<a few hours	Short	<1 day	No	No	No	Yes	Primarily affects the respiratory system and skin through inhalation and direct contact	Low ecological risk	3
Triclosan (5-chloro-2-(2,4-dichlorophenoxy)-phenol)	~18 days	<1 hour	<1.5 yrs	~8 hrs	Yes	Yes - low	Yes	No	Low human health risk	Toxic to aquativ organisms like algae and fish, with observed effects including reduced growth, reproduction and survival	1
O,O,O-triphenyl phosphorothioate	Short	Info gap	~1 month	Short	Yes - low	No	Yes	No	Info gap	Hig toxicity to aquatic organisms	1
Triphenylthiophosphate and tertiary butylated phenyl derivatives (reaction mass of)	Info gap	<2 weeks	Info gap	Info gap	Yes	No	Yes	Yes	Potential reproductive toxicity	Harmful to aquatic organisms, persistent	1

Table 5. ECL-1 Prioritization

TASK 2											
	Chemical Properties								Toxicity		
Emerging Contaminant	Half Life Soil	Half Life Water	Half Life Sediment	Half Life Air	Leachable	Soluble	Bioaccumulative	Volatile	Human Health Risk	Ecological Risk	Priority
2,4,6-tris(tert-butyl)phenol (2,4,6-TTBP)	Persistent	Info gap	Short	Info gap	No	No	Yes	No	Low human health risk	Significant ecological risk due to its persistence, potential for bioaccumulation and high toxicity to aquatice organisms	1
Vanadium pentoxide	Info gap	Info gap	Info gap	Info gap	Yes	Yes - low	No	Yes	Exposure can result in lung damage, nausea, mild diarrhea and stomach cramps	Potential toxicity to aquatic life, especially at high concentrations in water	3