



<b>RETURN RESPONSES TO: RETOURNEZ VOS RÉPONSES À</b>  <b>Response Receiving - Environment Canada / Réponse recevant – Environnement Canada</b>  <a href="mailto:alyssa.festeryga@canada.ca">alyssa.festeryga@canada.ca</a>  <b>REQUEST FOR INFORMATION DEMANDE D'INFORMATION</b>	<b>Title – Titre</b> Request for Information (RFI) for Analysis of Wastewater, Sludge/Biosolids, Leachate and other Complex Environmental Matrices for Chemical Substances	
	<b>EC Request for Information No. /SAP No. – N° de la demande d'information EC / N° SAP</b> <b>5000055473</b>	
	<b>Date of Request for Information (YYYY-MM-DD) – Date de la demande d'information (AAAA-MM-JJ)</b> <b>2021-04-07</b>	
	<b>Request for Information Closes (YEAR-MM-DD) - La demande d'information prend fin (AAAA- MM-JJ)</b> <b>2021-04-22</b> at – à <b>15 :00</b>	<b>Time Zone – Fuseau horaire</b>  <b>Eastern Daylight Time (EDT)</b>
	<b>Address Enquiries to - Adresser toutes questions à</b> Alyssa Festeryga	
	<b>Telephone No. – N° de téléphone</b> Not Applicable	<b>Fax No. – N° de Fax</b> Not Applicable
	<b>Destination - of Services / Destination des services</b> Specified Herein - Précisé dans les présentes	
	<b>Security / Sécurité</b> There is no Security Requirement. Il n'y a pas d'exigence sur la sécurité.	
	<b>Vendor/Firm Name and Address - Raison sociale et adresse du fournisseur/de l'entrepreneur</b>  	
	<b>Telephone No. – N° de téléphone</b>	<b>Fax No. – N° de Fax</b>
<b>Name and title of person authorized to sign on behalf of Vendor/Firm: (type or print) / Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>  <b>Signature</b>		
<b>Date</b>		

**Request for Information  
Analysis of Wastewater, Sludge/Biosolids, Leachate  
And other Complex Environmental Matrices for Chemical Substances**

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## **1. Nature of the Request for Information (RFI)**

- 1.1. This is a Request for Information (RFI) only and not a bid solicitation.
- 1.2. This Request for Information (RFI) seeks information from industry and academia on its interest, capacity, and ability to complete analytical testing of Canadian wastewater, sludges/biosolids, leachates, and other complex environmental matrices; and to provide industry and academia with the opportunity to give feedback on the procurement strategy.
- 1.3. In particular, ECCC is seeking to understand Supplier's ability to analyze certain compounds.
- 1.4. Interested respondents should review the questions identified in Annex B, and provide comments, answers and/or questions, in writing, to the ECCC representative identified on page 1 of this RFI.
- 1.5. Participation in this RFI is encouraged, but is not mandatory.
- 1.6. This RFI is neither a call for tender nor a Request for Proposal (RFP). No agreement or contract will be entered into based on this RFI. The issuance of this RFI is not to be considered in any way a commitment by the Government of Canada, nor as authority to potential respondents to undertake any work that could be charged to Canada. This RFI is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein.
- 1.7. Respondents will not be reimbursed for any cost incurred by participating in this RFI.

## **2. Background of this Request for Information**

- 2.1. The Canadian Environmental Protection Act (CEPA 1999) has the purpose of protecting the environment, and the health, and well-being of Canadians. A major part of the Act is to prevent pollution and address the exposure and potential effects of chemical substances ([www.canada.ca](http://www.canada.ca)). Scientific research and environmental monitoring provide the foundation for decision-making under CEPA.
- 2.2. Effluent discharges and land application of biosolids from Canadian wastewater treatment plants (WWTPs), and leachates from landfill sites, have been identified as important pathways of chemical substances to the aquatic and terrestrial environments. Environment and Climate Change Canada (ECCC) developed a wastewater monitoring program to determine the occurrence and fate of these substances during treatment processes. This monitoring program supports the renewed Chemicals Management Plan, the Whales Initiative, and other collaborations with federal, provincial, municipal, Indigenous, and academic partners to address any issues related to chemical substances and wastewater. This program requires high-quality chemical analysis of many chemical substances that may be present at trace levels in aqueous and solid environmental samples such as but not limited to wastewater raw influent, treated effluent, environmental water, leachate, raw sludge, sediment, and treated biosolids. The results of this program contribute to science-based decisions on the assessment and management of chemical substances in Canada.
- 2.3. The objective of this work is to obtain high-quality chemical analysis of many substances in raw influent, treated effluent, raw sludge, treated biosolids, landfill leachate, and environmental waters and sediments impacted by these discharges as part of a monitoring program on the occurrence and fate of chemical substances in municipal wastewater.

### **3. Potential Scope of Work and Constraints**

- 3.1. If a follow-on solicitation occurs it will be published on <https://buyandsell.gc.ca/> in the form of a Request for Proposal (RFP).
- 3.2. There are no security requirements associated with this RFI, however there may be security requirements associated with any resulting competitive procurement process. Should a Supplier require information on personnel and organization security screening or security clauses, please refer to the Canadian Industrial Security Directorate (CISD), Industrial and Security Program of Public Services and Procurement Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

### **4. Context**

- 4.1. Respondents should refer to the Statement of Work identified in Annex A.

## Annex A Statement of Work

### 1. Introduction

1.1. The Canadian Environmental Protection Act (CEPA 1999) has the purpose of protecting the environment and the health and well-being of Canadians. A major part of the Act is to prevent pollution and address the exposure and potential effects of chemical substances ([www.canada.ca](http://www.canada.ca)). Scientific research and environmental monitoring provide the foundation for decision-making under CEPA.

### 2. Background

2.1. Effluent discharges and land application of biosolids from Canadian wastewater treatment plants (WWTPs), and leachates from landfill sites, have been identified as important pathways of chemical substances to the aquatic and terrestrial environments. Environnement and Climate Change Canada (ECCC) developed a wastewater monitoring program to determine the occurrence and fate of these substances during treatment processes. This monitoring program supports the renewed Chemicals Management Plan, the Whales Initiative, and other collaborations with federal, provincial, municipal, Indigenous, and academic partners to address any issues related to chemical substances and wastewater. This program requires high-quality chemical analysis of many chemical substances that may be present at trace levels in aqueous and solid environmental samples such as but not limited to wastewater raw influent, treated effluent, environmental water, leachate, raw sludge, sediment, and treated biosolids. The results of this program contribute to science-based decisions on the assessment and management of chemical substances in Canada.

### 3. Objective

3.1. The objective of this work is to obtain high-quality chemical analysis of many substances in raw influent, treated effluent, raw sludge, treated biosolids, landfill leachate, and environmental waters and sediments impacted by these discharges as part of a monitoring program on the occurrence and fate of chemical substances in municipal wastewater.

### 4. Definitions

CAS #	Chemical Abstract Service number ( <a href="http://www.cas.org">www.cas.org</a> )
Method Detection Limit (MDL)	A statistically determined decision point determined according to the procedure described in "United States Environmental Protection Agency definition and procedure for the determination of the method detection limit, revision 1.11. 40 CFR Part 136, Appendix B". <a href="https://www.law.cornell.edu/cfr/text/40/part-136/appendix-B">https://www.law.cornell.edu/cfr/text/40/part-136/appendix-B</a>
Reporting Limit (RL)	3 times the signal to noise ratio in the target channel converted to an equivalent sample concentration, or the concentration equivalent to the lowest calibration standard, whichever is greater.
Quarterly	Canada defines the quarterly periods as follows: 1 <sup>st</sup> Quarter    1 April to 30 June 2 <sup>nd</sup> Quarter    1 July to 30 September 3 <sup>rd</sup> Quarter    1 October to 31 December 4 <sup>th</sup> Quarter    1 January to 31 March

### 5. Acronyms and List of Tables

<b>Table #</b>	<b>Acronym</b>	<b>Substance Group</b>
1	PBDEs	Polybrominated diphenyl ethers
2	PFAS	Poly and perfluorinated alkyl substances
3	NPs	Nonylphenols
4	BPs	Bisphenols
5	TCS	Triclosan
6	HFRs	Halogenated flame retardants
7	OPFRs	Organophosphorus flame retardants
8	HBCD	Hexabromocyclododecane
9	PAHs	Polycyclic aromatic hydrocarbons
10	PCBs	Polychlorinated biphenyls
11	Pesticides	Pesticides
12	D/F	Dioxins and Furans
13	CAs	Chlorinated Alkanes (Paraffins)
14	Phth	Phthalates

## 6. Scope of Work

### 6.1. Contractor Experience

6.1.1. Wastewater matrices are complex. High-quality analyses are achieved through experience. The Contractor must demonstrate that they have a thorough understanding and extensive experience with wastewater and sludge/biosolids matrices and are able to generate technically valid results for each group of substances.

### 6.2. Certification and Accreditation

6.2.1. According to the Laboratory Directory of the Canadian Association for Laboratory Accreditation ([www.cala.ca](http://www.cala.ca)), no laboratories in Canada are accredited for analysis of all of these substances in water or solids. The International Standards Organization (ISO) has published standard #17025: General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017). In order to obtain high-quality analyses for this work, preference will be given to laboratories who are certified under ISO 17025.

6.2.2. The Contractor must demonstrate participation in relevant Performance Evaluation (PE) or Proficiency Testing (PT) studies. ECCC understands that PE and PT study availability for these compounds is limited, and that wastewater and sludge matrices are not available for these studies. Relevant matrices would include water, sediment, and tissue.

### 6.3. Sampling Plan

6.3.1. The Technical Authority will provide a quarterly sampling plan to the Contractor within two (2) weeks of Contract Award and updated on a quarterly basis. The Contractor will use that sampling plan to determine the quantity and type of sample container and shipping container they will provide.

6.3.2. The wastewater monitoring program includes all of the categories of substances on a rotating basis. Not every category will be measured every year.

### 6.4. Sampling Protocol

6.4.1. The Contractor must provide a sampling protocol for collection of aqueous and solids samples. The sampling protocol must specify the type of container to use for collection of samples for each analytical category, the required sample volume to

achieve the reporting limits stipulated in Tables 1 through 14, and any preservation requirements to maintain sample integrity during transit.

#### 6.5. Submissive Forms

6.5.1. The Contractor must provide submission forms for collection of aqueous and solids samples. Submission forms must include fields for Project Name; Client name, address and phone; Client Sample Identification; Matrix, Sampling Date; Container Type; Analyses Requested; Relinquished by with Date; Received by with Date.

#### 6.6. Containers

6.6.1. The Contractor must provide sampling containers (e.g., bottles or jars) and shipping containers (e.g., coolers) as part of the contract. The number of containers and coolers will be dictated by the container type and volume requirements as described in the Contractor's sampling protocol. All sampling and shipping containers will be delivered to the Technical Authority.

#### 6.7. Analyses

6.7.1. Wastewater influents and effluents are challenging matrices because of the elevated levels of suspended solids compared to typical environmental waters. Treated wastewater effluents can contain suspended solids up to 60 mg/L depending on the treatment type. Raw wastewater influents can contain suspended solids up to 200 mg/L. These solids are an integral part of the sample because they may contain significant levels of the compounds of interest, particularly if the compounds are hydrophobic. Therefore, sample preparation and extraction methods that are able to accommodate the solids (e.g. liquid/liquid extraction) are preferred where possible. However if the solids must be removed by filtration prior to extraction (e.g. solid phase extraction) it is unlikely that separate analysis of the solids is feasible due to the amount of material and the cost of the additional analysis. All results from wastewater influent and effluent samples must be reported on a mass/volume basis (e.g. ng/L or µg/L).

6.7.2. Raw sludge and treated biosolids are challenging matrices because of the high moisture and organic content compared to typical sediment samples. These samples can contain anywhere from 2% to 30% solids, and 50% to 75% organic material. The solids are the important phase of these samples; therefore if phase separation is required for sample preparation and extraction the Contractor must analyze the solid phase. However sample preparation and extraction methods that avoid the need for phase separation are preferred where possible. All results from raw sludge and treated biosolids must be reported on a mass/mass and dry weight basis (e.g. ng/g dw or µg/g dw).

6.7.3. The Contractor must use analytical methods that reflect the current state of analytical technology, i.e. mass discrimination techniques to maximize analyte identification and quantification. The Contractor must provide a copy of their complete analytical method, including all quality assurance and quality control elements such as acceptable ranges for blank levels, laboratory spike recoveries, surrogate recoveries, and duplicate sample results.

6.7.4. The Work includes the analysis and reporting of concentrations of trace concentrations of several categories of chemical substances in, but not limited to, raw influent, treated effluent, raw sludge, and treated biosolids samples. The selected compounds are listed in Tables 1 to 14. The Contractor's analytical methods must achieve Reporting Limits (RLs) equal to or lower than those listed in each table for each listed compound in the aqueous and solids matrices, and the methods must employ, at a minimum, the labeled surrogate standards listed in Tables 1 to 14 for analyte quantification.

- 6.7.5. The Contractor must communicate any anomalous situations with respect to sample integrity or analytical challenges to the Technical Authority by email within three (3) business days of discovering such situation.
- 6.8. Storage and Disposal
  - 6.8.1. The Contractor must adhere to the maximum sample holding time and storage conditions as specified in the analytical method.
- 6.9. Quality Assurance / Quality Control (QA/QC)
  - 6.9.1. The Contractor must analyze samples in a batch system, with each batch consisting of a method blank, spiked blank, and replicate sample. These QA/QC elements must comprise 5% or more of each analytical batch, i.e. every batch of 20 samples or fewer must contain a blank, spike, and replicate. Blank corrections or blank subtractions must not be used.
  - 6.9.2. The Contractor must consider field duplicates and equipment blanks submitted by ECCC as samples. Method blanks, spiked blanks, and laboratory replicate analyses must be conducted as part of the Contractor's Quality Assurance/Quality Control (QA/QC) program and are not considered as samples submitted.
  - 6.9.3. Laboratory raw data, chromatograms, and all relevant laboratory notes must be retained by the Contractor for a minimum period of 36 months following submission of samples. Raw data must include chromatograms and area tables for all instrument calibrations including linearity, resolution, and sensitivity checks showing date and time of analysis, and evidence that all QA/QC specifications have been met; and aliquot masses, volumes, suspended solids content and moisture content for all samples, including original and re-analyses, dilutions, and other details of the analytical procedure.
  - 6.9.4. The Contractor must provide consultation on sampling procedures, delivery schedules, unexpected analytical results, and other contingencies as requested by the Technical Authority.
- 6.10. Reports
  - 6.10.1. The Contractor must electronically provide sample submittal confirmation to the Technical Authority within five (5) business days of sample receipt.
  - 6.10.2. Sample Data Reports
    - 6.10.2.1. The Contractor must deliver Sample Data Reports to the Technical Authority within six (6) weeks of receiving the samples. Sample Data Reports must include the following:
      - 6.10.2.1.1. Concentrations of each analyte in the samples and replicates.
      - 6.10.2.1.2. Concentrations of each analyte in the method blank.
      - 6.10.2.1.3. Per cent recoveries in spiked blanks.
      - 6.10.2.1.4. The reporting limit for each analyte.
      - 6.10.2.1.5. Percent recovery of surrogates.
      - 6.10.2.1.6. Any problems with samples or data, including corrective actions taken, resolutions, and explanation of flagged data.
    - 6.10.2.2. Sample Data Reports are subject to the acceptance and approval of the Technical Authority.
  - 6.10.3. Final Data Report
    - 6.10.3.1. The Contractor must deliver a final report to the Technical Authority. Final Data Report must include the following.
      - 6.10.3.1.1. The project name.
      - 6.10.3.1.2. Sample site name.
      - 6.10.3.1.3. Date of sample receipt.
      - 6.10.3.1.4. Sample temperatures upon receipt.
      - 6.10.3.1.5. Reporting conventions and laboratory qualifiers.



- 6.10.3.1.6. QA/QC notes.  
 6.10.3.1.7. Analytical discussion.  
 6.10.3.1.8. Correlation table showing client and Contractor sample identifiers, and analysis reports for each sample and substance.

**Table 1: Polybrominated diphenyl ether (PBDE) flame retardants**

Homologue Group	PBDE Congener	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Tri-BDE	17 / 25	0.50	0.50	
	28 / 33	0.50	0.50	28L
Tetra-BDE	47	0.50	0.50	47L
	49	0.50	0.50	
	66	0.50	0.50	
Penta-BDE	85	0.50	0.50	
	99	0.50	0.50	99L
	100	0.50	0.50	100L
Hexa-BDE	138	0.50	0.50	
	153	0.50	0.50	153L
	154	0.50	0.50	154L
	155	0.50	0.50	
Hepta-BDE	183	0.50	0.50	183L
Octa-BDe	203	0.50	0.50	
Nona-BDE	206	0.50	0.50	
	207	0.50	0.50	
	208	0.50	0.50	
Deca-BDE	209	5.0	5.0	209L

**Table 2: Poly and Perfluorinated alkyl substances (PFAS)**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Perfluorobutanoate	375-22-4	PFBA	2.0	0.50	13C4-PFBA
Perfluoropentanoate	2706-90-3	PFPEA	2.0	0.50	
Perfluorohexanoate	307-24-4	PFHXA	2.0	0.50	13C2-PFHXA
Perfluoroheptanoate	375-85-9	PFHPA	2.0	0.50	
Perfluorooctanoate	335-67-1	PFOA	2.0	0.50	13C2-PFOA
Perfluorononanoate	375-95-1	PFNA	2.0	0.50	13C5-PFNA
Perfluorodecanoate	335-76-	PFDA	2.0	0.50	13C2-PFDA

	2				
Perfluorohexanesulfonate	355-46-4	PFHxS	5.0	0.50	18O2-PFHXS
Perfluorooctanesulfonate	1763-23-1	PFOS	5.0	0.50	13C4-PFOS

**Table 3: Nonylphenol and its ethoxylates**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
4-nonylphenol	25154-52-3	NP	10	10	13C6-NP
4-nonylphenol monoethoxylate		NP1EO	50	50	
4-nonylphenol diethoxylate		NP2EO	50	50	
Octylphenol		OP	50	50	

**Table 4: Bisphenols**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Bisphenol A	80-05-7	BPA	2.0	2.0	13C12-BPA
Bisphenol B		BPB			
Bisphenol F	87139-40-0	BPF			
Bisphenol P		BPP			
Bisphenol S	80-09-1	BPS			
Bisphenol Z		BPZ			

**Table 5: Triclosan**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Triclosan	3380-34-5	TCS	10	200	13C12-TCS

**Table 6: Halogenated Flame Retardants (HFRs)**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
1,1'-(1,2-ethanediyl)bis(pentabromobenzene)	84852-53-9	7	10	5.0	13C14-DBDPE
2,4,6-Tribromophenylallyl ether	3278-89-5	ATE (TBPAE)	5.0	5.0	
Dechlorane plus, anti	135821-74-8	DP anti	2.0	2.0	13C10-DP
Dechlorane plus, syn	135821-03-3	DP syn	2.0	2.0	13C10-DP
2-ethylhexyl 2,3,4,5-tetrabromobenzoate	183658-27-7	TBB / EHTBB	20	20	
bis (2-ethylhexyl) 3,4,5,6-tetrabromophthalate	26040-51-7	TBPH (BEHTBP)	50	20	
1,2-dibromo-4-(1,2-dibromoethyl)cyclohexane	3322-93-8	TBECH	100	50	

**Table 7: Organophosphorus Flame Retardants (OPFRs)**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Tris(2-butoxyethyl) phosphate	78-51-3	TBEP	1.0	0.50	
Tris(2-chloroisopropyl) phosphate	13674-84-5	TCPP	1.0	0.50	D18
Tricresyl phosphate	1330-78-5	TCrP	1.0	0.50	
Tris(1,3-dichloro-2-propyl) phosphate	13674-87-8	TDCPP	5.0	5.0	D15
Tris(2-ethylhexyl) phosphate	78-42-2	TEHP	1.0	0.50	
Triethyl phosphate	78-40-0	TEP	1.0	0.50	D15
Triphenyl phosphate	115-86-6	TPP	1.0	0.50	13C18
	56803-37-3	BPDP			
	65652-41-7	BDMEPPP			
	29761-21-	IDDP			

	5				
	115-86-6	TPHP			
	68937-41-7	IPPP			

**Table 8: Hexabromocyclododecane (HBCD)**

Name	CAS #	Abbreviation	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
hexabromocyclododecane	134237-50-6	HBCD alpha	5.0	0.50	13C12
hexabromocyclododecane	134237-51-7	HBCD beta	5.0	0.50	13C12
hexabromocyclododecane	134237-52-8	HBCD gamma	5.0	0.50	13C12

**Table 9: Polycyclic Aromatic Hydrocarbons (PAHs)**

Substance	CAS Number	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Acenaphthene	83-32-9	10	5.0	
Acenaphthylene	208-96-8	10	5.0	D8
Anthracene	120-12-7	10	5.0	D10
Benz(a)anthracene	56-55-3	10	5.0	D12
Benzo(a)pyrene	50-32-8	10	5.0	D12
Benzo(b)fluoranthene	205-99-2	10	5.0	D12
Benzo(g,h,i)perylene	191-24-2	10	5.0	D12
Benzo(k)fluoranthene	207-08-9	10	5.0	D12
Chrysene	218-01-9	10	5.0	D12
Dibenz[a,h]anthracene	3-70-3	10	5.0	D14
Fluoranthene	206-44-0	10	5.0	D10
Fluorene	86-73-7	10	5.0	
Indeno(1,2,3-cd)pyrene	193-39-5	10	5.0	D12
Naphthalene	91-20-3	10	5.0	D8
Phenanthrene	85-01-8	10	5.0	D10
Pyrene	129-00-0	10	5.0	

**Table 10: Polychlorinated Biphenyls (PCBs)**

	Required	Required	Labeled
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PCB Congener #	reporting limit in aqueous (ng/L)	reporting limit in solids (ng/g)	surrogate for quantification
77	0.1	0.01	77L
81	0.1	0.01	81L
105	0.1	0.01	105L
114	0.1	0.01	114L
118	0.1	0.01	118L
123	0.1	0.01	123L
126	0.1	0.01	126L
156/157	0.1	0.01	156L/157L
167	0.1	0.01	167L
169	0.1	0.01	169L
170	0.1	0.01	170L
180/193	0.1	0.01	180L
189	0.1	0.01	189L

Table 11: Pesticides

Name	CAS #	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Atrazine	1912-24-9			
Chlorpyrifos	2921-88-2			
Diazinon				
Dichlorodiphenyl-trichloroethane (DDT)	50-29-3			
Dieldrin	60-57-1			
Endosulfan				
Glyphosate	1071-83-6			
Lindane				
Malathion	121-75-5			
Permethrin	52645-53-1			
Simazine	122-34-9			

Table 12: Dioxins and Furans

Name	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
2,3,7,8-TCDD	0.1	0.01	
1,2,3,7,8-PECDD	0.1	0.01	
1,2,3,4,7,8-HxCDD	0.1	0.01	

1,2,3,6,7,8-HXCDD	0.1	0.01	
1,2,3,7,8,9-HXCDD	0.1	0.01	
1,2,3,4,6,7,8-HPCDD	0.1	0.01	
OCDD	0.1	0.01	
2,3,7,8-TCDF	0.1	0.01	
1,2,3,7,8-PECDF	0.1	0.01	
2,3,4,7,8-PECDF	0.1	0.01	
1,2,3,4,7,8-HXCDF	0.1	0.01	
1,2,3,6,7,8-HXCDF	0.1	0.01	
1,2,3,7,8,9-HXCDF	0.1	0.01	
2,3,4,6,7,8-HXCDF	0.1	0.01	
1,2,3,4,6,7,8-HPCDF	0.1	0.01	
1,2,3,4,7,8,9-HPCDF	0.1	0.01	
OCDF	0.1	0.01	

**Table 13: Chlorinated Alkanes (Paraffins)**

Name	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
Short chain			
Medium chain			
Long chain			

**Table 14: Phthalates**

Name	CAS #	Required reporting limit in aqueous (ng/L)	Required reporting limit in solids (ng/g)	Labeled surrogate for quantification
DEHP	117-81-7			
DMP	131-11-3			
DIBP	84-69-5			
DBzP	523-31-9			
DBP	84-74-2			
DnOP	117-84-0			
DEP	84-66-2			
BCHP	84-64-0			
DMCHP	27987-25-3			
BBP	85-68-7			
DINP	28553-12-0 68515-48-0			
DPrP	131-16-8			
DCHP	84-61-7			
BIOP	27215-22-1			
DnHP	84-75-3			
B79P	68515-40-2			

## 7. Deliverables

Deliverable	Due Date
7.1. Sampling Protocol	Within one week of Contract Award
7.2. Submission Forms	Within one week of Contract Award
7.3. Sample Containers	As per the quarterly Sampling Plan
7.4. Sample Data Reports	Within six (6) weeks of sample receipt
7.5. Final Data Reports	Within four (4) weeks of acceptance of the Sample Data Report by the Technical Authority

## 8. Format of Deliverables

### 8.1. Sample Data Reports

8.1.1. The Contractor must deliver the Sample Data Reports in Microsoft Excel .xlsx spreadsheet format, or equivalent compatible format electronically to the Technical Authority.

8.1.2. The Sample Data Reports must be separated by sampling site, e.g. WWTP.

### 8.2. Final Data Report

8.2.1. The Contractor must deliver the Final Data Report in PDF format including a cover letter signed by the analyst electronically to the Technical Authority.

## 9. Schedule

9.1. The work must be completed by March 31, 2022. ECCC reserves the right to extend this contract by up to four (4) additional option years.

## 10. Language of Work

10.1. All written and verbal communication must be in English.

## 11. Work Location

11.1. The work will take place at the Contractor's facilities.

11.2. The Contractor's representative may be required to travel to the Canada Centre for Inland Waters, 867 Lakeshore Road, Burlington ON annually to provide updates and present findings, including any technical issues.

## 12. Travel

12.1. The Contractor will be reimbursed for authorized travel and living expenses, reasonably and properly incurred in the performance of the Work, at cost; without any allowance for profit and/or administrative overhead, in accordance with the meal and private vehicle expenses provided in Appendices B, C and D of the National Joint Council Travel Directive and with the other provisions of the directive referring to "travellers", rather than those referring to "employees". NJC Website: <http://www.njc-cnm.gc.ca/directive/index.php?sid=97&lang=eng>

12.2. All travel must have the prior authorization of the Technical Authority.

12.3. All payments are subject to government audit.

## 13. Basis for Canada's Ownership of Intellectual Property

13.1. Environment Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, on the following grounds:

The main purpose of the contract, or of the deliverables contracted for, is to generate knowledge and information for public dissemination.

14. Crown Input

- 14.1. All sampling activities, equipment, and supplies will be provided by ECCC, except for sample and shipping containers as noted above.
- 14.2. ECCC will generate trip blanks, field blanks, and equipment blanks as part of this Contract, which will be submitted and invoiced as samples.



## **Annex B**

### **Industry Engagement Questions**

1. Statement of Work (SOW)
  - 1.1. Please provide a statement regarding your capability to meet the requirements.
  - 1.2. Are any aspects of the SOW unclear?
  - 1.3. Are the delivery timelines detailed in the SOW reasonable?
  - 1.4. Does the Statement of Work have enough information for Bidders to submit a quality bid?
  - 1.5. What, if any, additional information would you need to see included in the Statement of Work?
  - 1.6. Are you currently capable of providing validated methods for each compound in Tables 1 to 14 of the SOW? If not, which compounds can you support?
  - 1.7. Are you currently capable of achieving the required reporting limits for each element in Tables 1 to 14 of the SOW? If not, which reporting limits can you achieve?
  - 1.8. Is it clear in the SOW how to report the results for each compound in Tables 1 to 14 of the SOW?
2. Other
  - 2.1. Please identify any other issues, concerns, recommendations not addressed above.
  - 2.2. Would you submit a proposal for this requirement? If not, why?