

Table 1 - General Parameters

PARAMETER	WATER			SOIL	
	CONTAINER	PRESERVATIVE	HOLDING TIME (≤ 6°C)	CONTAINER	HOLDING TIME (≤ 6°C)
Alkalinity / Acidity	0.25-1 L Plastic	None	14 days	NA	NA
Anions: Bromide / Chloride / Fluoride / Sulfate	0.25-1 L Plastic	None	28 days	Jar / Bag	Unlimited
Biochemical Oxygen Demand: BOD / CBOD / Soluble BOD	0.25-1 L Plastic	None	2 / 3 days	NA	NA
Bromate / Chlorate	125 mL Plastic / 100 mL Amber Glass	50 mg/L EDA	28 days	NA	NA
Carbon: Dissolved Organic (DOC)	2 x 40 mL Glass	0.45 µm filtered (optional) HCl to pH<2 ⁴	Pres: 28 days Unpres: 3 days	NA	NA
Carbon: Total / Dissolved Inorganic (TIC/DIC)	0.125-1 L Plastic	None	14 days	NA	NA
Carbon: Total / Organic (TC/TOC)	2 x 40 mL Glass	HCl to pH<2	28 days	Jar / Bag	28 days (moist) Unlimited (dry)
Chlorine: Total / Free	≥ 40 mL Plastic / Glass	None	15 min ¹	NA	NA
Chlorite	100 mL Amber Glass	50 mg/L EDA	14 days	NA	NA
Chlorophyll-a / Phaeophytin	4 L Plastic	None (keep dark)	Unfiltered: 48 hr Filters: 28 days (frozen)	NA	NA
Chemical Oxygen Demand: COD / Soluble COD	125 mL Plastic	H ₂ SO ₄ to pH<2 ⁴	Pres: 28 days Unpres: 3 days	NA	NA
Colour: True / Apparent	0.25-1 L Plastic	None	3 days	NA	NA
Conductivity (EC) / Salinity	0.25-1 L Plastic	None	28 days	Jar / Bag	28 days
Cyanide: SAD / WAD	0.125 L Plastic	NaOH to pH>12	14 days	Jar / Bag	14 days (moist/dark)
Formaldehyde	125 mL Plastic	None	7 days	Jar / Bag	14 days
Gross alpha/beta (Radiation)	2 x 1 L Plastic	HNO ₃ to pH<2	180 days	NA	NA
Nitrilotriacetic Acid (NTA)	0.25-1 L Plastic	None	7 days	NA	NA
Nitrogen: Ammonia (NH ₃) / Nitrate+Nitrite (NO ₂ + NO ₃)	125 mL Plastic	H ₂ SO ₄ to pH<2	Pres: 28 days Unpres: 3 days	Jar / Bag	28 days
Nitrogen: NO ₂ / NO ₃ (Speciated)	0.25-1 L Plastic	None	3 days	Jar / Bag	28 days
Nitrogen: Total / Dissolved Kjeldahl (TKN/DKN)	125 mL Plastic	0.45 µm filtered (optional) H ₂ SO ₄ to pH<2 ⁴	Pres: 28 days Unpres: 3 days	Jar / Bag	28 days
Odour	2 x 1 L Glass	None	1 day	NA	NA
Oil and Grease: Total / Mineral	1 L Glass	H ₂ SO ₄ to pH<2	28 days	NA	NA
Oxygen (dissolved)	2 x 40 mL Glass ³	None	15 min ¹	NA	NA
pH	0.25-1 L Plastic	None	15 min ¹	Jar / Bag	365 days
Phenolics: Total (Colorimetric)	0.5 L Glass	H ₂ SO ₄ to pH<2	28 days	Jar / Bag	14 days
Phosphorus: Total / Dissolved	125 mL Plastic	0.45 µm filtered (optional) H ₂ SO ₄ to pH<2 ⁴	Pres: 28 days Unpres: 3 days	Jar / Bag	28 days
Phosphorus: Ortho PO ₄ / Reactive	0.25-1 L Plastic	None	3 days	NA	NA
Silica: Reactive	0.25-1 L Plastic	None	28 days	NA	NA
Solids: TS, TSS, VSS, TDS, TVS	1 L Plastic	None	7 days	125-250 mL Jar	14 days (Moisture)
Sulfide	125 mL Plastic	ZnOAc + NaOH to pH>9	7 days	125-250 mL Jar	7 days
Surfactants, as MBAS	0.25-1 L Plastic	None	3 days	NA	NA
Tannin and Lignin	0.25-1 L Plastic	None	28 days	NA	NA
Trihalomethane (THM) Formation Potential (inc. chlorine demand)	3 x 1 L Glass	None	24 hr	NA	NA
Turbidity	0.25-1 L Plastic	None (keep dark)	3 days	NA	NA
UV Absorbance / Transmissivity	0.25-1 L Plastic	None	3 days	NA	NA

Table 2 – Microbiology and Toxicology Parameters

PARAMETER	WATER			SOIL	
	CONTAINER	PRESERVATIVE	HOLDING TIME (TEMP)	CONTAINER	HOLDING TIME (≤ 6°C)
Coliforms (Total / Fecal), <i>E. Coli</i> , <i>Enterococcus</i> , <i>Pseudomonas</i>	300 mL Plastic (Sterilized)	Na ₂ S ₂ O ₃	30 hours (< 8°C)	Jar / Bag	48 hours
HPC (Heterotrophic Plate Count)	300 mL Plastic (Sterilized)	Na ₂ S ₂ O ₃	24 hours (< 8°C)	Jar / Bag	48 hours
SRB / IRB (Sulfur Reducing / Iron Related Bacteria)	300 mL Plastic (Sterilized)	Na ₂ S ₂ O ₃ (optional)	48 hours (< 8°C)	Jar / Bag	48 hours
Daphnia LC50	1 L Plastic / Glass	None	5 days (4 ± 2°C)	NA	NA
Trout LC50	3 x 20 L Carboy	None	5 days (4 ± 2°C)	NA	NA

Table 3 - Organic Parameters

PARAMETER	WATER			SOIL	
	CONTAINER	PRESERVATIVE	HOLDING TIME ($\leq 6^{\circ}\text{C}$)	CONTAINER	HOLDING TIME ($\leq 6^{\circ}\text{C}$)
Carbamate Pesticides	2 x 40 mL Amber Glass	ChlorAC + Na ₂ S ₂ O ₃	28 days	125-250 mL Jar	14 days
Diquat and Paraquat	250 mL Black Plastic	Na ₂ S ₂ O ₃	7 days	NA	NA
Dioxins and Furans	2 x 1 L Amber Glass	None	Unlimited	125-250 mL Jar	Unlimited
Glycols	2 x 40 mL Glass	None	7 days	125-250 mL Jar	14 days
Glyphosate and AMPA	2 x 40 mL Amber Glass	Na ₂ S ₂ O ₃	14 days	125-250 mL Jar	14 days
Haloacetic Acids (HAA)	2 x 40 mL Amber Glass	NH ₄ Cl	14 days	NA	NA
Herbicides: Acid Extractable	1 L Amber Glass	NaHSO ₄ to pH<2	14 days	125-250 mL Jar	14 days
Hydrocarbons: EPH / EPHsg / PHC F2-4	250 mL Amber Glass	NaHSO ₄ to pH<2	Pres: 14 days Unpres: 7 days	125-250 mL Jar	14 days
Organotins	1 L Amber Glass	5.7mL acetic acid/L sample	Pres: 14 days Unpres: 7 days	125-250 mL Jar	28 days 1 year if frozen
Pesticides (OC / ON / OP) / Misc. SVOC	1 L Amber Glass	None	7 days	125-250 mL Jar	14 days
Phenols: Chlorinated / Non-Chlorinated	1 L Amber Glass	Ascorbic Acid + NaHSO ₄	Pres: 14 days Unpres: 7 days	125-250 mL Jar	14 days
Polychlorinated Biphenyls (PCB)	1 L Amber Glass	None	Unlimited	125-250 mL Jar	Unlimited
Resin and Fatty Acids (RFA)	1 L Amber Glass	Ascorbic Acid + NaOH	Pres: 14 days Unpres: 7 days	NA	NA
Polycyclic Aromatic Hydrocarbons (PAH)	250 mL Amber Glass	NaHSO ₄ to pH<2	Pres: 14 days Unpres: 7 days	125-250 mL Jar	14 days
Perfluorinated Compounds (PFCs)	1 L Clear PET Plastic	None	14 days	125-250 mL Jar, NO CAP LINER	14 days
Trihalomethanes (THM)	2 x 40 mL Amber Glass ³	Na ₂ S ₂ O ₃	14 days	NA	NA
Volatile Fatty Acids (VFA)	2 x 40 mL Glass	None	7 days	NA	NA
Volatiles: BTEX / VOC / VH / PHC F1	2 x 40 mL Amber Glass ³	NaHSO ₄ to pH<2	14 days	40 mL Glass with Methanol	40 days
Waste Oil Content	1 L Amber Glass	None	28 days	125-250 mL Jar	28 days

Table 4 - Metals Parameters

PARAMETER	WATER			SOIL	
	CONTAINER	PRESERVATIVE	HOLDING TIME (AMBIENT)	CONTAINER	HOLDING TIME (AMB)
Boron: Hot water soluble	NA	NA	NA	Jar / Bag	180 days
Chromium: Hexavalent	125 mL Plastic	0.45 μm filtered (for Diss) NaOH to pH>8 ^{4,5}	Pres: 30 days ($\leq 6^{\circ}\text{C}$) Unpres: 24 hr	Jar / Bag	30 days (Keep Moist at $\leq 6^{\circ}\text{C}$)
Mercury: Dissolved ²	40 mL Glass	0.45 μm filtered, HCl to pH<2 ^{4,5}	28 days	NA	NA
Mercury: Total / SALM ²	40 mL Glass	HCl to pH<2	28 days	Jar / Bag	28 days
Metals: Dissolved	125 mL Plastic	0.45 μm filtered, HNO ₃ to pH<2 ^{4,5}	180 days	NA	NA
Metals: Total Recoverable	125 mL Plastic	HNO ₃ to pH<2	180 days	NA	NA
Metals: SALM	NA	NA	NA	Jar / Bag	180 days
TCLP / SPLP / MLEP Metals	NA	NA	NA	Jar / Bag	28 / 180 days

Table 5 – Soil Vapour and Air Parameters

PARAMETER	SAMPLING MEDIA	PRESERVATIVE	HOLDING TIME (AMBIENT)
Ammonia	Silica Gel Tube	NA	14 days
Hydrogen Cyanide	Soda Lime Tube	NA	14 days
Hydrogen Sulfide	Charcoal Tube	NA	30 days
Metals (e.g. lead)	Cellulose Ester Filter	NA	30 days
Methane	Tedlar Bag	NA	7 days
PAH	XAD2 Tube	NA	30 days
VOC and VHv	SVI Thermal Desorption Tube	NA	30 days

This information is based on Standard Methods (APHA), EPA, and other applicable reference methods, and is subject to change. These are the minimum recommended volumes. Multiple analyses may be combined in a single container. Contact the lab if collection volume is uncertain. Samples should be kept $\leq 10^{\circ}\text{C}$ during transport to the laboratory, with the exception of microbiological samples which should be kept $\leq 8^{\circ}\text{C}$.

¹ These parameters ideally should be measured in the field, hence they will be qualified

² Must be submitted in a dedicated container, i.e. separate from other metals

³ Container used to collect sample must have no headspace

⁴ Sample must **not** be preserved if the dissolved/soluble fraction is required, unless it is filtered first

⁵ Samples that are not field filtered (where applicable) and/or preserved will be qualified