ESN NORTHWEST
ENVIRONMENTAL SERVICES NETWORK

ESN Northwest Sampling Guidelines - Container and Holding Time List

Organic Analyses

Analysis	Method	Container Water; Soil	Preservation for Waters	Minimum Sample Volume Water; Soil	Holding Time Water; Soil
Total Petroleum Hydrocarbon Identification (HCID)	Mod. EPA 8015, NWTPH-HCID	500 mL amber; 4 oz glass jar	**HCl to pH < 2**	500 mL amber; 4 oz glass jar	14 days
Total Petroleum Hydrocarbons (TPH) - Gasoline	NWTPH-Gx	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
Total Petroleum Hydrocarbons (TPH) - Diesel	NWTPH-Dx	500 mL amber; 4 oz glass jar	**HCl to pH < 2**	500 mL amber; 4 oz glass jar	14 days
Total Petroleum Hydrocarbons (TPH) - Oil	NWTPH-Dx Extended	500 mL amber; 4 oz glass jar	**HCl to pH < 2**	500 mL amber; 4 oz glass jar	14 days
Dissolved Methane, Ethane, Ethene	R. S. Kerr SOP-175	3 - 40 mL VOA vials	**HCl to pH < 2**	2 - 40 mL VOA vials	14 days
BTEX	EPA 8021B, EPA 8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
MTBE	EPA 8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
EDB/EDC	EPA 8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
EDB (Low Level)	EPA 8011	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
Volatile Organic Compounds (VOCs)	EPA 8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
Ketones	EPA 8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
Polynucleated Aromatics (PAH)	EPA 8270D, EPA 8270D SIMS	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
Pentachlorophenol (PCP)	EPA 8270D	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
Semi Volatile Organic Compounds (SVOCs)	EPA 8270D	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
PCBs	EPA 8082	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
Chlorinated Pesticides	EPA 8081	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
Chlorinated Herbicides	Mod. EPA 8151/8270	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
Organophosphorus Pesticides	Mod. EPA 8141/8270	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	7 days; 14 days
TCLP VOCs	EPA 1311/8260C	3 - 40 mL VOA vials; 4 oz glass jar	**HCl to pH < 2**	40 mL VOA vials; 4 oz glass jar	14 days
TCLP SVOCs	EPA 1311/8270D	500 mL amber; 4 oz glass jar	Unpreserved	500 mL amber; 4 oz glass jar	14 days

Notes:
For volatile analyses: the maximum holding time for unpreserved water samples is 7 days.

Metals Analyses

Analysis	Method	Container Water; Soil	Preservation for Waters	Minimum Sample Volume Water; Soil	Holding Time
Total Metals - except Hg & Cr^{+6}	EPA 6020	500 mL poly; 4 oz glass jar	**HNO_3 to pH < 2**	125 mL poly; 4 oz glass jar	6 months
Dissolved Metals - except Hg & Cr^{+6} *	EPA 6020	500 mL poly; 4 oz glass jar	Unpreserved	125 mL poly; 4 oz glass jar	6 months
Mercury	EPA 6020	500 mL poly; 4 oz glass jar	**HNO_3 to pH < 2**	125 mL poly; 4 oz glass jar	28 days
Hexavalent Chromium (Cr^{+6})	EPA 7196A, SM 3500-CR-D	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	**24 hours**
TCLP Metals, except Mercury	EPA 1311/6020	500 mL poly; 4 oz glass jar	Unpreserved	125 mL poly; 4 oz glass jar	6 months
TCLP Mercury	EPA 1311/6020	500 mL poly; 4 oz glass jar	Unpreserved	125 mL poly; 4 oz glass jar	28 days

Notes:
* For dissolved metals, water sample is filtered and then afterwards preserved with HNO_3 to pH < 2.

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Inorganic Analyses

Analysis	Method	Container Water; Soil	Preservation for Waters	Minimum Sample Volume Water; Soil	Holding Time
Alkalinity	EPA 310.1, SM 2320B	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	14 days
Ammonia	EPA 350.3	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Asbestos	Polarized Light Microscopy	Sample-type dependent *	Unpreserved	Sample-type dependent *	No limit
Biological Oxygen Demand (BOD)	EPA 405.1, SM 5210B	1 L poly	Unpreserved	1 L poly	**48 hours**
Chemical Oxygen Demand (COD)	EPA 410.4, SM 5220D	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Chloride	EPA 325.3, SM 4500-CL-C	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	28 days
Chlorine	SM 4500-CL-G	500 mL poly; 4 oz glass jar	Unpreserved	500 mL poly; 4 oz glass jar	**15 minutes**
Conductivity	EPA 120.1, SM 2510B	500 mL poly	Unpreserved	250 mL poly	28 days
Cyanide	SM 4500 CN-E	500 mL poly; 4 oz glass jar	**NaOH to pH > 12**	500 mL poly; 4 oz glass jar	14 days
Dissolved Oxygen	SM 4500 O-G	1 L amber	Unpreserved	1 L amber	**15 minutes**
Flash Point (PMCC)	ASTM D-93, EPA 1010	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	No limit
Nitrate	EPA 353.5, SM 4500-NO3-D	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	**48 hours**
Nitrogen, Total Kjeldahl (TKN)	SM 4500-N-C	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Nitrogen as Nitrate	EPA 353.2	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Oil & Grease	EPA 413.2	500 mL poly; 4 oz glass jar	**HCl to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Paint Filter Test	EPA 9095	500 mL poly; 4 oz glass jar	Unpreserved	500 mL poly; 4 oz glass jar	No limit
Perchlorate	EPA 314.0	500 mL poly; 4 oz glass jar	Unpreserved	500 mL poly; 4 oz glass jar	28 days
pH	EPA 150.1, EPA 9040	500 mL poly; 4 oz glass jar	Unpreserved	125 mL poly; 4 oz glass jar	**24 hours**
Phosphorus	EPA 6010B	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	250 mL poly; 4 oz glass jar	28 days
Salinity	SM 2520B	500 mL poly	Unpreserved	500 mL poly	No limit
Sulfate	EPA 375.4	500 mL poly; 4 oz glass jar	Unpreserved	250 mL poly; 4 oz glass jar	28 days
Sulfide	SM 4500-S2-E	500 mL poly; 4 oz glass jar	**NaOH + ZnAc**	500 mL poly; 4 oz glass jar	7 days
Total Dissolved Solids (TDS)	EPA 160.1	500 mL poly	Unpreserved	500 mL poly	7 days
Total Halogens	EPA 9076	500 mL poly; 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL poly; 4 oz glass jar	28 days
Total Organic Carbon (TOC)	EPA 415.1, EPA 9060, SM 5310B	500 mL amber 4 oz glass jar	**H_2SO_4 to pH < 2**	500 mL amber 4 oz glass jar	28 days
Total Settleable Solids	SM 2540	1 L poly	Unpreserved	1 L poly	**48 hours**
Total Solids	EPA 160.3	500 mL poly	Unpreserved	500 mL poly	7 days
Total Suspended Solids (TSS)	EPA 160.2, SM 2540D	500 mL poly	Unpreserved	500 mL poly	7 days
Turbidity	EPA 180.1	500 mL poly	Unpreserved	125 mL poly	**48 hours**

Notes:

* Sample volume for asbestos analysis is sample-type dependent. For floor tiles and roofing material: 3 to 4 square inches is preferred. For ceiling tiles and loose fill insulation: one square inch. For paint, mastics, and other thin-coating material: enough to represent material being tested.

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