

## ENVIRONMENTAL SAMPLE PRESERVATION AND HOLDING TIMES

### SOLID/WASTE SAMPLES

Parameter	Reference Method	Container	Preservation and Storage	Holding Time	
				Extract <sup>1</sup>	Analyze <sup>2</sup>
Total Petroleum Hydrocarbons	Modified EPA 418.1	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Total Petroleum Hydrocarbons (Diesel Range)	EPA 8015	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Total Petroleum Hydrocarbons (Gasoline Range)	EPA 8015	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	14 days
Volatile Organics	EPA 8260	(1) 2 oz. glass jars	Refrigerate at 4°C	NA	14 days
Semivolatile Extractable Organics	EPA 8270	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Aromatic Volatile Organics	EPA 8020A/8021	(1) 2 oz. glass jars	Refrigerate at 4°C	NA	14 days
Organochlorine Pesticides	EPA 8081A	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
PCBs	EPA 8082	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Polynuclear Aromatic Hydrocarbons	EPA 8100, EPA 8270, EPA 8310	(1) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Metals	EPA 6010	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	6 months
Mercury	EPA 7471	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	28 days
Oil and Grease	EPA 9070/9071	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	28 days
% Solids	EPA 160.1	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	7 days
pH	EPA 9045	(1) 2 oz. glass jar	Refrigerate at 4°C	NA	Analyze immediately
Ignitability	EPA 7.1.2.2	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	As soon as possible**
Reactive Cyanide	EPA 7.3 & EPA 9012	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	As soon as possible**
Reactive Sulfide	EPA 7.3 & EPA 9030	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	As soon as possible**
Anions	EPA 300.0	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	Nitrate/Nitrite – 48 hours, remaining anions - 28 days
Total Organic Carbon	Walkley-Black	(1) 4 oz. glass jar	Refrigerate at 4°C	NA	As soon as possible**
Asbestos (PLM)	EPA 600/R-93/116	(1) 2 oz. glass jar or suitable plastic bag	NA	NA	NA

(1) From field collection to extraction.

(2) From extraction to complete analysis.

(3) Can be analyzed from same bottle.

\*\* These samples must be overnight shipped to the laboratory immediately following collection.

SM = Standard Methods (APHA)

NA = Not applicable

**ENVIRONMENTAL SAMPLE PRESERVATION AND HOLDING TIMES  
(continued)**

**WATER SAMPLES**

Parameter	Reference Method	Container	Preservation and Storage	Holding Time	
				Extract <sup>1</sup>	Analyze <sup>2</sup>
Total Petroleum Hydrocarbons	EPA 418.1	(1) 1 L glass bottle	Refrigerate at 4°C; add 2mL conc. HCl	7 days	40 days
Total Petroleum Hydrocarbons (Diesel Range)	EPA 8015	(1) 1 L glass bottle	Refrigerate at 4°C	7 days	40 days
Total Petroleum Hydrocarbons (Gasoline Range)	EPA 8015	(2) 40 mL VOA vials	Refrigerate at 4°C; add 0.5 mL 1:1 HCl	NA	14 days
Volatile Organics	EPA 8260 EPA 624	(2) 40 mL VOA vials	Refrigerate at 4°C; add 0.5 mL 1:1 HCl	NA	14 days
Semivolatile Extractable Organics	EPA 8270 EPA 625	(1) 1 L glass bottles; TFE-lined cap	Refrigerate at 4°C	7 days	40 days
Aromatic Volatile Organics	EPA 8021, EPA 8020, EPA 602	(2) 40 mL VOA vials	Refrigerate at 4°C; add 0.5 mL 1:1 HCl	NA	14 days
Organochlorine Pesticides	EPA 8081A, EPA 608	(1) 1 L amber glass bottle; TFE-lined cap	Refrigerate at 4°C	7 days	40 days
PCBs	EPA 8082, EPA 608	(1) 1 L amber glass bottle; TFE-lined cap	Refrigerate at 4°C	7 days	40 days
Polynuclear Aromatic Hydrocarbons	EPA 8270, EPA 610/8100, EPA 8310	(1) 1 L glass bottle; TFE-lined cap	Refrigerate at 4°C	7 days	40 days
Metals	EPA 6010, EPA 200.7	(1) 500 mL plastic bottle	Refrigerate at 4°C; add 1 mL conc. HNO <sub>3</sub>	NA	6 months
Mercury	EPA 7470* EPA 245.1	(1) 500 mL plastic bottle	Refrigerate at 4°C; add 1 mL conc. HNO <sub>3</sub>	NA	28 days
Chromium (VI)	EPA 7196 SM 312B	(1) 125 mL plastic bottle	Refrigerate at 4°C	NA	24 hours**

(1) From field collection to extraction.

(2) From extraction to complete analysis.

(3) Can be analyzed from same bottle.

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**ENVIRONMENTAL SAMPLE PRESERVATION AND HOLDING TIMES  
(continued)**

**WATER SAMPLES**

Parameter	Reference Method	Container	Preservation and Storage	Holding Time	
				Extract <sup>1</sup>	Analyze <sup>2</sup>
Cyanide	EPA 9012 EPA 335.3	(1) 1 L plastic bottle	Refrigerate at 4°C; add 5 pellets NaOH	NA	14 days
Anions: Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate	EPA 300.0	(1) 500 mL plastic bottle	Refrigerate at 4°C	NA	Nitrate/Nitrite – 48 hours, remaining anions - 28 days
Total Phenolics	EPA 9066 EPA 420.2	(1) 1 L glass only	Refrigerate at 4°C; add 2 mL conc. H <sub>2</sub> SO <sub>4</sub>	NA	28 days
Total Organic Carbon	EPA 415.1 EPA 9060	(1) 125 mL amber glass bottle	Refrigerate at 4°C; add 2 mL conc. H <sub>2</sub> SO <sub>4</sub>	NA	28 days
pH	EPA 9040 EPA 150.1	(1) 500 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C	NA	Analyze immediately
Conductance	EPA 9050 EPA 120.1	(1) 500 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C	NA	28 days
Chemical Oxygen Demand	EPA 410.4	(1) 125 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C; add 2 mL conc. H <sub>2</sub> SO <sub>4</sub>	NA	28 days
Oil & Grease	EPA 413.1 EPA 413.2	(1) 1 L glass bottle	Refrigerate at 4°C; add 2 mL conc. HCl	NA	28 days
Total Dissolved Solids	EPA 160.1	(1) 500 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C	NA	7 days
Total Suspended Solids	EPA 160.2	(1) 500 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C	NA	7 days
Alkalinity	EPA 310.2	(1) 500 mL <sup>3</sup> plastic bottle	Refrigerate at 4°C	NA	14 days
Aldehydes	EPA 8315	(1) 500 mL glass bottle	Refrigerate at 4°C	72 hours **	72 hours **
Asbestos (Drinking Water)	EPA 100.1	(2) 1 L Polyethylene bottle	Chilled	48 hours **	NA

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(2) From extraction to complete analysis.

(3) Can be analyzed from same bottle.

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NA = Not applicable

**ENVIRONMENTAL SAMPLE PRESERVATION AND HOLDING TIMES  
(continued)**

**TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) SAMPLES**

Parameter	Reference Method	Container	Preservation and Storage	Holding Time	
				Extract <sup>1</sup>	Analyze <sup>2</sup>
Volatile Organics (VOCs)	EPA 1311 Leaching Procedure	(2) 40 mL VOA vials	Refrigerate at 4°C	14 days	14 days
Extractable Organics		(2) 4 oz. glass jar	Refrigerate at 4°C	14 days	40 days
Mercury					28 days
Other Metals				180 days	180 days
VOCs	EPA 8260	(2) 40 mL VOA vials	Refrigerate at 4°C	NA	14 days
Semi-volatiles	EPA 8270	(1) 500 mL glass jar	Refrigerate at 4°C	7 days	40 days
Pesticides	EPA 8080				
Herbicides	EPA 8150				
Metals	EPA 6010	(1) 500 mL plastic bottle	Refrigerate at 4°C; add 1 mL conc. HNO <sub>3</sub>	NA	180 days
Mercury	EPA 7470	(1) 500 mL plastic bottle	Refrigerate at 4°C; add 1 mL conc. HNO <sub>3</sub>	NA	28 days

(1) From field collection to extraction.

(2) From extraction to complete analysis.

(3) Can be analyzed from same bottle.

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NA = Not applicable

**MINIMUM SAMPLE VOLUMES REQUIRED FOR TCLP EXTRACTION**

Matrix	Metals	Volatiles	Semivolatiles	Pesticides/Herbicides	Full TCLP
Aqueous with <0.5% solids	500 mL	4 x 40 mL	1 Liter	1 Liter	3 Liters
Aqueous with >0.5% solids*	*	*	*	*	*
Solid**	150 g	50 g	150 g	150 g	200 g

\*Depending upon the % solids, this sample matrix may result in a multiple phase leachate. Sample volumes required will be determined following initial sample assessment and consultation with client.

\*\*This category would include any non-filterable waste (i.e., rags or bag filters).