Caltest
ANALYTICAL LABORATORY
ENVIRONMENTAL ANALYSES

2008 REFERENCE CHART

SAMPLE VOLUME, PRESERVATIVE, HOLDING TIME

Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount	
Alkalinity	14 days	Plastic / Glass	≤6 °C	100	mL
Ammonia (NH_3)	28 days	Plastic / Glass	H_2SO_4 + ≤6 °C	200	mL
Asbestos (water)	**48 hours**	Plastic / Glass	≤6 °C	1000	mL
Bioassay, % survival	**36 hours**	Plastic cubitainer	≤6 °C	2.5	gal
Biochemical Oxygen Demand (BOD)	**48 hours**	Plastic / Glass	≤6 °C	250	mL
Chromium, Hexavalent (CrVI)	**24 hours**	Plastic / Glass	≤6 °C	200	mL
Chloride (Cl)	28 days	Plastic / Glass	0-6° C	100	mL
Chlorine, residual	**15 minutes**	Field Measurement	-	-	-
Chemical Oxygen Demand (COD)	7 days	Plastic / Glass	H_2SO_4 + ≤6 °C	50	mL
Chlorophyll A (Algal Biomass)	7 days	Amber Plastic	≤6 °C	1000	mL
Coliform, Total / Fecal by SM9221B/E	**6 hrs - wastewater** **24 hrs – drinking water**	Plastic (sterile)	$Na_2S_2O_3$ + ≤6 °C	100	mL
E.Coli / Total Coliform by SM9223B	**24 hours**	Plastic (sterile)	$Na_2S_2O_3$ + ≤6 °C	100	mL
Color	**48 hours**	Plastic / Glass	≤6 °C	100	mL
Conductivity (EC/SC)	28 days	Plastic / Glass	≤6 °C	100	mL
Cyanide Total or WAD	14 days	Amber Plastic	NaOH + ≤6 °C	500	mL
Dissolved Organic Carbon (DOC)	**Filter Immediately, 28 days**	Amber Glass VOA vial (sample in triplicate)	Filter then add H_2SO_4 or HCl + ≤6 °C	40	mL
Dissolved Oxygen (DO)	**Immediately**	Field Measurement	-	-	-
Fluoride (F-)	28 days	Plastic / Glass	≤6 °C	100	mL
Heterotrophic Plate Count (HPC/SPC)	**8 hours**	Plastic (sterile)	$Na_2S_2O_3$ + ≤6 °C	100	mL
Hardness (by titration)	180 days	Plastic / Glass	HNO_3 + ≤6 °C	250	mL
Metals, Dissolved {2}	**Filter within 15 minutes{2}, 180 days**	Plastic / Glass	Filter then add HNO_3	100	mL
Metals, Total	180 days	Plastic / Glass	HNO_3	100	mL
Mercury (Hg) EPA 245.1	28 days	Plastic / Glass	HNO_3	100	mL
Mercury, Total EPA 1631	**48 hours to preserve** 90 days once preserved	Glass, Dbl Bagged	HCl	100	mL
Mercury, Dissolved {2} EPA 1631	**Filter within 24 hours, preserve within 48 hours** 90 days once preserved	Glass, Dbl Bagged (Zero Headspace)	Filter in lab, then HCl	100	mL
Mercury, Methyl EPA 1630	**48 hours to preserve** 90 days, preserved	Glass, Dbl Bagged	≤6 °C + HCl if < 10 ppth salinity {8}	100	mL
Mercury, Dissolved {2} Methyl EPA 1630	**48 hrs to filter & preserve** 90 days once preserved	Glass, Dbl Bagged (Zero Headspace)	Filter in Lab, ≤6 °C + HCl if < 10 ppth salinity {8}	100	mL
Nitrate (NO_3)	**48 hours**	Plastic / Glass	≤6 °C	100	mL
Nitrite (NO_2)	**48 hours**	Plastic / Glass	≤6 °C	100	mL
Nitrate+Nitrite as N (NO_3+NO_2-N)	28 days	Plastic / Glass	H_2SO_4 + ≤6 °C	100	mL
Nitrogen, Total Kjeldahl (TKN)	28 days	Plastic / Glass	H_2SO_4 + ≤6 °C	200	mL
Nitrogen, Total Organic (TON)	28 days	Plastic / Glass	H_2SO_4 + ≤6 °C	200	mL
Odor	**6 hours**	Glass only	≤6 °C	500	mL
Oil & Grease	28 days	Glass only	HCl + ≤6 °C	1000 {10}	mL
Organics:					
Chlorinated Pesticides & PCBs EPA 608/8081/8082/625	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C {5}	1000	mL
Polynuclear Aromatic Hydrocarbons (PAH's) EPA 625	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C {5}	1000	mL
Organophosphorus Pesticides EPA 614/8141/625/8270	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C {5}	1000	mL

Analytical Parameter	Maximum Holding Time	Required Container Type	Required Preservative	Minimum Amount	
Chlorinated Herbicides EPA 615/8151	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C	1000	mL
Semivolatile Organics EPA 625/8270	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C {5}	1000	mL
Pyrethroids by EPA 8270 (GCMS-SIM)	**7 days /3 days {9}** 14 days, soil or sediment	Glass Amber Liter {6}	≤6 °C {5}	1000	mL
Carbamate Pesticides EPA 632/8321	7 days, Aqueous 14 days, Sludge or Solid	Glass Amber Liter {6}	≤6 °C	1000	mL
Volatile Organics EPA 8260 / 524.2 {4}	14 days, preserved	Glass VOA vial {1} (sample in triplicate)	HCl + ≤6 °C	40	mL
Volatile Organics EPA 624 {3} (Includes Acrolein and Acrylonitrile)	14 days for preserved 7 days for unpreserved 3 day unpreserved for Acrolein	Total of Six 40mL VOA Vials; Two Pres w/ HCl, Two Unpreserved, Two Client preserved to pH 4-5. {1}	HCl + ≤6 °C (see container type)	One 40mL of each container type described	
TPH Diesel/Motor Oil	7 days	Glass Amber Liter {6}	≤6 °C	1000	mL
Tributyltin (TBT)	N/A	Glass Amber Liter {6}	≤6 °C	1000	mL
TPH Gas/ BTEX/ MTBE	14 days, preserved	Glass VOA vial {1}	HCl + ≤6 °C	40	mL
EDB & DBCP, EPA 504.1	28 days	Glass VOA vial {1}	$Na_2S_2O_3$ {5} + ≤6 °C	250	mL
Nitrogen/Phos Pesticides, EPA 507	14 days	Glass Amber Liter {6}	$Na_2S_2O_3$ {5} + ≤6 °C	1000	mL
Chlorinated Pest/PCB's, EPA 505	7 days	Glass VOA vial {1}	$Na_2S_2O_3$ {5} + ≤6 °C	250	mL
Chlorinated Herbicides, EPA 515	14 days	Glass Amber 250 mL	Sulfite $Na_2S_2O_3$ {5} + ≤6 °C	250	mL
Semivolatile Drinking Water Organics, EPA 525	14 days	Glass Amber Liter	$NaSO_3$ (Sodium Sulfite) + ≤6 °C {5}	1000	mL
Carbamate Pesticides, EPA 531.1	28 days	Glass Amber 250 mL	MCAA+ $Na_2S_2O_3$+ ≤6 °C {5}	250	mL
Glyphosate, EPA 547	14 days	Glass Amber 250 mL	$Na_2S_2O_3$+ ≤6 °C {5}	250	mL
Endothall, EPA 548	7 days	Glass Amber Liter	$Na_2S_2O_3$+ ≤6 °C {5}	1000	mL
Diquat & Paraquat, EPA 549.2	7 days	Plastic Amber Liter	$Na_2S_2O_3$+ H_2SO_4+ ≤6 °C {5}	1000	mL
Dioxin, EPA 1613	1 year	Glass Amber Liter {6}	≤6 °C {5}	1000	mL
Perchlorate	28 days	Plastic/Glass	≤6 °C	100	mL
pH	**15 minutes**	Plastic / Glass	≤6 °C	100	mL
Phenols, EPA 420.4	28 days	Glass Amber Liter	H_2SO_4 + ≤6 °C	200	mL
Phosphate, Ortho	**48 hours**	Plastic / Glass	≤6 °C	100	mL
Phosphate, Total (PO_4)	28 days	Plastic / Glass	H_2SO_4 + ≤6 °C	100	mL
Solids, Settleable	**48 hours**	Plastic / Glass	≤6 °C	1000	mL
Solids, total (% Solids)	7 days	Plastic / Glass	≤6 °C	100	mL
Solids, Total Dissolved (TDS)	7 days	Plastic / Glass	≤6 °C	100	mL
Solids, Total Suspended (TSS)	7 days	Plastic / Glass	≤6 °C	200	mL
Solids, Volatile Suspended (VSS)	7 days	Plastic / Glass	≤6 °C	200	mL
Sulfate (SO_4)	28 days	Plastic / Glass	≤6 °C	100	mL
Sulfide, Dissolved	7 days	Glass 250 mL	$AlCl_3$ + NaOH + ≤6 °C	250	mL
Sulfide, Total	7 days	Glass 250 mL	NaOH + ZnAC + ≤6 °C	250	mL
Sulfite (SO_3)	**24 hours**	Glass VOA vial {7}	EDTA + ≤6 °C	40	mL
Surfactants (MBAS)	**48 hours**	Plastic / Glass	≤6 °C	250	mL
Total Organic Carbon (TOC)	28 days	Glass VOA vial (sample in triplicate)	H_2SO_4 or HCl + ≤6 °C	40	mL
Turbidity	**48 hours**	Plastic / Glass	≤6 °C	100	mL
Ultraviolet Absorption (UVA254)	**48 hours**	Glass Amber 125mL	≤6 °C	125	mL

{1} Volatile organic samples need to be filled in multiple VOA vials without air bubbles or headspace.
{2} Dissolved metals require field or lab filtration through 0.45-micron filter prior to preservation. 40 CFR Part 122, 136 requires filtration within 15 minutes.
{3} Volatile organic method EPA 624 requires dechlorination using Sodium Thiosulfate ($Na_2S_2O_3$) at time of sampling if chlorine is present. (Thiosulfate dechlorination bottles are available at the laboratory upon request). Read special preservation requirements provided with containers prior to sampling.
{4} Volatile organic method EPA 524.2 requires dechlorination using Ascorbic Acid at time of sampling if chlorine is present. (Ascorbic Acid dechlorination bottles are available at the laboratory upon request)
{5} If sampling from a chlorinated location, add Sodium Thiosulfate ($Na_2S_2O_3$) for dechlorination.
{6} Semi Volatile Organics Amber Liters (AL) should be collected in duplicate, to insure volume for re-extraction if necessary.
{7} Sulfite needs to be collected in duplicate vials preserved with EDTA and without air bubbles or headspace.
{8} Preserve with HCl if less than 10 ppth Salinity, or Preserve with H_2SO_4 if greater than 10 ppth Salinity.
{9} Cyhalothrin in water has a 3 day hold time in reagent water per USGS study. Permethrin in water has a 3 day hold time per Storage Stability Study by CA Dept. of Food and Agriculture.
{10} 1000mL required for RL of 5 mg/L. 250 mL bottle recommended for samples with expected concentrations of 20 mg/L or higher.
Note: Multiple analyses may be run from the same container, provided that the type, volume and preservation are appropriate.