

**M. J. Reider Associates, Inc.**

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Approved by: Erin N. McKechnie

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## M.J. Reider Associates Preservation and Holding Times Chart

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*NOTE: For all drinking water compliance samples in which the method does not specify an acceptable pH range and the analysis requires no chemical preservation, an acceptable pH is 5-9 SU.*

Reference LIMS for other valid containers and preservation.

<b>Parameter / Method</b>	<b>Preservative <sup>1</sup></b>	<b>Extraction Holding Time (Organics Only)</b>	<b>Sample / Analysis Holding Time</b>	<b>Container Size</b>	<b>Container Type</b>
<b>EPA 504.1</b> EDB, DBCP, 123TCP	Cool to $\leq 6^{\circ}\text{C}$ 3 mg Sodium Thiosulfate/40 mL	14 Days	< 24 Hours after extraction	4 x 40 mL vials plus duplicate Field Reagent Blanks	Glass
<b>EPA 505</b> DW Pesticides/ PCBs	Cool to $\leq 6^{\circ}\text{C}$ 3 mg Sodium Thiosulfate/40 mL	14 Days (Exception: Heptachlor 7 Days)	< 24 Hours after extraction	4 x 40 mL vials plus a Field Reagent Blank	Glass
<b>EPA 515.3</b> DW Herbicides	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 20 mg Sodium Thiosulfate /250 mL)	14 Days	14 Days	250 mL	Amber Glass
<b>EPA 524.2</b> DW Volatiles	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 25 mg Ascorbic Acid /40 mL), pH to $< 2$ w/ 1:1 HCl	NA	14 Days	4 x 40 mL vials with zero headspace plus duplicate Field Reagent Blanks	Glass

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<b>EPA 524.2</b> All DW Volatiles except TTHMs <sup>3</sup>	Cool to $\leq 6^{\circ}\text{C}$ Samples that are not acidified	NA	24 hours	4 x 40 mL vials with zero headspace plus duplicate Field Reagent Blanks	Glass
<b>EPA 524.2</b> DW TTHMs only	Cool to $\leq 6^{\circ}\text{C}$ 3 mg Sodium Thiosulfate /40 mL <b>NO Acid necessary</b> (N/A if Ascorbic used for dechlorinating)	NA	14 Days	4 x 40 mL vials with zero headspace	Glass
<b>EPA 525.2</b> DW Semi-Volatiles	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 40-50 mg/L Sodium Sulfite), pH $< 2$ w/ HCl	14 Days	30 Days	2 x 1 Liter plus 1 Liter Field Reagent Blank	Amber Glass
<b>EPA 531.1</b> Carbamates	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 4 mg Sodium Thiosulfate/40 mL), 1.2 mL of 2.5M Monochloroacetic Acid Buffer to pH 3	NA	28 Days	40 mL vial	Glass

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<b>EPA 537.1</b> PFAS (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ Trizma (5g/L)	14 Days	28 Days	250 mL plus a Field Reagent Blank	Plastic
<b>EPA 547</b> Glyphosate	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 4 mg Sodium Thiosulfate/40 mL)	NA	14 Days	3 x 40 mL vials plus Field Reagent Blank	Glass
<b>EPA 548.1</b> Endothall	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 40 mg Sodium Thiosulfate) (Highly biologically active, add 1:1 HCl to pH 1.5-2) <b>pH may be adjusted at Lab</b>	7 Days	14 Days	500 mL	Amber Glass
<b>EPA 549.2</b> Diquat	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 100 mg/L Sodium Thiosulfate) (Biologically active, add H <sub>2</sub> SO <sub>4</sub> to pH <2) <b>pH may be adjusted at Lab</b>	7 Days	21 Days	250 mL	Amber PVC High Density or silanized amber glass

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<b>EPA 552.2</b> Haloacetic Acids – HAA5	Cool to $\leq 6^{\circ}\text{C}$ 25 mg Ammonium Chloride/250mL	14 Days	7 Days at $\leq 6^{\circ}\text{C}$ or 14 Days at $< -10^{\circ}\text{C}$	250 mL	Amber Glass
<b>EPA 608.3 SW846 8081B</b> NPW Pesticides/PCBs	Cool to $\leq 6^{\circ}\text{C}$ if pH 5-9. <b>For EPA 608.3:</b> If not 5-9, adjust pH (10N NaOH or 1:1 H <sub>2</sub> SO <sub>4</sub> ) or extract within 72hrs. (Aldrin: Chlorinated source add 80 mg Sodium Thiosulfate) <b>Adjust at Lab</b>	7 Days	40 Days	3 x 1 Liter	Amber Glass
<b>EPA 624.1 /SW846 8260</b> NPW Purgeable Aromatic Hydrocarbons	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) pH 2 w/ 1:1 HCl	NA	14 Days	3 x 40 mL vials with zero headspace plus Trip Blank	Glass
<b>EPA 624.1</b> NPW Purgeable Aromatic Hydrocarbons	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) <b>NOT</b> pH adjusted to pH 2	NA	7 Days <b>without pH adjustment</b>	3 x 40 mL vials with zero headspace plus Trip Blank	Glass

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<b>EPA 624.1</b> NPW Purgeable Halocarbons	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL)	NA	14 Days	3 x 40 mL vials with zero headspace plus Trip Blank	Glass
<b>EPA 624.1</b> NPW Acrolein & Acrylonitrile	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) <b>pH 4-5 w/ 1:1 HCl <sup>6</sup></b>	NA	14 Days	3 x 40 mL vials with zero headspace plus Trip Blank	Glass
<b>EPA 624.1</b> NPW Acrolein & Acrylonitrile	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) <b>No pH adjustment</b>	NA	3 Days <sup>6</sup>	3 x 40 mL vials with zero headspace plus Trip Blank	Glass
<b>EPA 625.1 / SW846 8270</b> NPW Semivolatiles	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 80 mg Sodium Thiosulfate/L)	7 Days	40 Days	3 x 1 Liter with Teflon lined lid	Amber Glass

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<b>EPA 625.1 / SW846 8270</b> NPW Benzidine	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 80 mg Sodium Thiosulfate/L). If 1,2-DPH likely to be present, adjust pH to $4.0 \pm 0.2$ w/ 1:1 $\text{H}_2\text{SO}_4$	7 Days	30 Days (Stored at $<0^{\circ}\text{C}$ )	3 x 1 Liter with Teflon lined lid	Amber Glass
<b>EPA 1633</b> PFAS (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	28 Days (aqueous) or 90 Days (all other matrices)	90 Days	125 mL plus Trip Blank	Plastic
<b>EPA 1666</b> Pharmaceuticals by GC/MS	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40 mL), pH $\leq 2$ w/ 1:1 HCl	NA	14 Days	3 x 40 mL vials with zero headspace plus Field Reagent Blank	Glass
<b>EPA 1671</b> Pharmaceuticals by GC (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40 mL), pH $\leq 2$ w/ HCl	NA	14 Days	3 x 40 mL vials plus Field Reagent Blank	Glass

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<b>SM 6640B</b> NPW Herbicides	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 2 mg Sodium Sulfite /40mL)	14 Days	21 Days	3 x 40 mL vials	Glass
<b>SM 6640B</b> (2,4-D, 2,4,5-T, Silvex & Dicamba) Compliance samples	Cool to $\leq 6^{\circ}\text{C}$ pH 5-9 w/HCl <sup>8</sup>	7 Days	40 Days	3 x 40 mL vials	Glass
<b>SW846 8015</b> NPW Diesel Range Organics DRO, (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	7 Days	40 Days	2 x 1 Liter	Amber glass
<b>SW846 8015 SOLID</b> Diesel Range Organics (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	14 Days	40 Days	2 x 32 oz Jar with Teflon lined lid	Glass
<b>SW846 8081B SOLID</b> Pesticides	Cool to $\leq 6^{\circ}\text{C}$	14 Days	40 Days	32 oz Jar with Teflon lined lid	Glass
<b>SW846 8082A SOLID</b> PCBs	Cool to $\leq 6^{\circ}\text{C}$	365 Days	40 Days	32 oz Jar with Teflon lined lid	Glass
<b>SW846 8082A</b> NPW PCBs	Cool to $\leq 6^{\circ}\text{C}$	365 Days	40 Days	3 x 1 Liter	Amber glass

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<b>SW846 8141</b> NPW Organo-phosphate Pesticides (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ Adjust pH between 5 and 8	7 Days	40 Days	2 x 1 Liter	Amber glass
<b>SW846 8141</b> <b>SOLID</b> Organo-phosphate Pesticides (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	14 Days	40 Days	32 oz Jar with Teflon lined lid	Glass
<b>SW846 8151</b> <b>SOLID</b> Herbicides (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	14 Days	40 Days	32 oz Jar with Teflon lined lid	Glass
<b>SW846 8260</b> NPW Volatiles	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) pH <2 w/ 1:1 HCl	NA	14 Days	3 x 40 mL vials with zero headspace plus Trip blank	Glass
<b>SW846 8260</b> NPW Volatiles: Required for <u>Styrene, Vinyl Chloride and</u> <u>2CEVE</u>	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) <b>pH NOT adjusted to</b> <b>pH&lt;2</b>	NA	7 Days	3 x 40 mL vials with zero headspace	Glass

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<b>SW846 8260</b> NPW Acrolein & Acrylonitrile	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 10mg Sodium Thiosulfate/40mL) <b>pH 4-5 w/ 1:1 HCl</b>	NA	14 Days	3 x 40 mL vials with zero headspace	Glass
<b>SW846 8260</b> <b>SOLID</b> Volatiles	Cool to $\leq 6^{\circ}\text{C}$	NA	14 Days	Soil Kit or 4 oz Jar with Teflon lined lid	Glass
<b>SW846 8260</b> <b>SOLID</b> Volatiles	Cool to $\leq 6^{\circ}\text{C}$	NA	14 Days	Encores or 4 oz Jar with Teflon lined lid <sup>7</sup>	Glass
<b>SW846 8260</b> <b>SOLID</b> <u>Styrene, Vinyl Chloride and 2CEVE</u>	Cool to $\leq 6^{\circ}\text{C}$	NA	7 Days	Encores or 4 oz Jar with Teflon lined lid	Glass
<b>SW846 8270</b> NPW Semivolatiles	Cool to $\leq 6^{\circ}\text{C}$ (Chlorinated source, add 80 mg Sodium Thiosulfate)	7 Days	40 Days	2 x 1 Liter with Teflon lined lid	Amber Glass
<b>SW846 8270</b> <b>SOLID</b> Semivolatiles	Cool to $\leq 6^{\circ}\text{C}$	14 Days	40 Days	32 oz Jar with Teflon lined lid	Glass

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<b>Acidity</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	14 Days	500 mL	Plastic or Glass
<b>Alkalinity</b> Alk	Cool to $\leq 6^{\circ}\text{C}$ Minimal Head Space	NA	14 Days	500 mL	Plastic or Glass
<b>Ammonia</b> NH <sub>3</sub> -N	Cool to $\leq 6^{\circ}\text{C}$ pH < 2 w/ H <sub>2</sub> SO <sub>4</sub>	NA	28 Days	500 mL	Plastic or Glass
<b>Asbestos</b> (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$  Solids do not require $\leq 6^{\circ}\text{C}$		48 Hours or (if 20 mg/L Hg as HgCl <sub>2</sub> added - 6 months)	1 Liter	Plastic
<b>Biochemical Oxygen Demand</b> BOD	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	1 Liter	Plastic or Glass
<b>Bromate <sup>4</sup></b> BrO <sub>3</sub> -	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required. 0.25 mL EDA/500 mL	NA	28 Days	250 mL	Plastic or Glass
<b>Bromide <sup>4</sup></b> Br-	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required. (Addition of 0.25 mL EDA/500 mL permitted)	NA	28 Days	250 mL	Plastic or Glass
<b>Calcium Hardness,</b> CaCO <sub>3</sub>	NA	NA	NA		NA

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<b>Carbonaceous Biochemical Oxygen Demand</b> CBOD	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	1 Liter	Plastic or Glass
<b>Chemical Oxygen Demand</b> COD	Cool to $\leq 6^{\circ}\text{C}$ pH to $< 2$ with $\text{H}_2\text{SO}_4$	NA	28 Days	500 mL	Plastic or Glass
<b>Chloramines</b> (Subcontract)	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required. Zero Head Space	NA	15 minutes	250 mL	Plastic or Glass
<b>Chlorate</b> <sup>4</sup> $\text{ClO}_3^-$	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required. 0.25 mL EDA/500 mL	NA	28 Days	250 mL	Plastic or Glass
<b>Chloride</b> $\text{Cl}^-$	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required	NA	28 Days	250 mL	Plastic or Glass
<b>Chlorine, Residual</b> $\text{Cl}_2$ Free & $\text{Cl}_2$ Total	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required.	NA	15 minutes	250 mL  Zero Head Space	Amber Glass
<b>Chlorine Demand</b> (Subcontract)	Do Not Store – minimal light and agitation	NA	Immediately	1 Liter	Glass

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<b>Chlorine Dioxide</b> (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ , but not required	NA	Immediately	500 mL	Plastic or Glass
<b>Chlorite <sup>4</sup></b> ClO <sub>2</sub> -	Cool to $\leq 6^{\circ}\text{C}$ 0.25 mL EDA/500 mL	NA	14 Days	250 mL	Opaque Plastic or Amber Glass
<b>Coliform, Fecal (FC)</b>  NPW (CWA)  9222D-MF Colilert 18	Cool to $< 10^{\circ}\text{C}$ 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL 10% Sodium Thiosulfate/120 mL (preserved in lab)	NA  <b>SWTR=</b> Surface Water Treatment Rule	8 Hours <sup>5</sup>  <b>CWA =</b> Clean Water Act	120 mL Sterile	Plastic or Glass
<b>Coliform, Fecal (FC)</b> Sludge-Biosolids 9221E-MPN	Cool to $< 8^{\circ}\text{C}$	NA	8 Hours <sup>5</sup>	16 oz Jar Sterile	Glass
<b>Coliform, Fecal (FC)</b>  Colilert 18/ Quantitray	Cool to $< 10^{\circ}\text{C}$ 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL Sodium Thiosulfate/120 mL (preserved in lab)	NA	8 Hours <sup>5</sup>	120 mL Sterile	Plastic or Glass

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<b>Coliform, Total (TC)</b>  DW (TCR)  9223B- Colilert P/A	Cool to <10°C 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL Sodium Thiosulfate/120 mL (preserved in lab)	NA  <b>TCR =</b> Total Coliform Rule	30 Hours	120 mL Sterile	Plastic or Glass
<b>Coliform:TC, FC and HPC for SWTR (DW)</b>	Cool to <10°C 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL Sodium Thiosulfate/120 mL (preserved in lab)	NA	8 Hours	120 mL Sterile	Plastic or Glass
<b>Coliform, E. Coli (EC) Enumeration for SWTR</b> 9223B- Colilert	Cool to <10°C 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL Sodium Thiosulfate/120 mL (preserved in lab)	NA	30 Hours	120 mL Sterile	Plastic or Glass

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<b>Coliform, E. Coli (EC)</b> P/A for GWR – PWS not homeowners	Cool to <10°C 10 mg Sodium Thiosulfate/120 mL (provided by manufacturer) or 0.1 mL Sodium Thiosulfate/120 mL (preserved in lab)	NA  <b>GWR =</b> Ground Water Rule	30 hours	120 mL Sterile	Plastic or Glass
<b>Color</b>	Cool to ≤6°C	NA	48 Hours	500 mL	Plastic or Glass
<b>Cyanide, Total and Free</b>  CN-Kelada-01 (Total)  CN-F Kelada-01 (Free)	Cool to ≤6°C (Chlorinated source, add 2 mL of Sodium Arsenite/250 mL), DW: pH ≥12, WW: pH ≥10 w/NaOH	NA	14 Days	250 mL	Amber glass
<b>Cyanide, Total SOLID</b>	Cool to ≤6°C	NA	14 Days	32 oz Jar	Glass
<b>Dioxin in DW- method 1613 (Subcontract)</b>	Cool to ≤6°C 80 mg Sodium Thiosulfate. If pH > 9 adjust to pH 7-9 with H <sub>2</sub> SO <sub>4</sub>	1 Year	1 Year	2 x 1 Liter	Amber glass
<b>Dissolved Oxygen, DO</b>	Cool to ≤6°C	NA	15 Minutes	300 mL	Glass BOD Bottle

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<b>Fluoride</b> F-	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required.	NA	28 Days	250 mL	Plastic
<b>Hardness</b>  Hardness	NA	NA	NA	NA	NA
<b>Heterotrophic Plate Count</b> HPC, Standard Plate Count. SWTR, BWR, NPDES	Cool to $< 10^{\circ}\text{C}$ , 10 mg Sodium Thiosulfate/120 mL	NA	8 Hours <sup>5</sup>	120 mL Sterile	Plastic or Glass
<b>Hexavalent Chromium</b> NPW Cr+6 EPA 218.6	Cool to $\leq 6^{\circ}\text{C}$ Filter, then adjust pH to 9.3 - 9.7 with 1mL of $\text{NH}_4\text{OH}/(\text{NH}_4)_2\text{SO}_4$ per 100 mL. Filter and preserve within 15 minutes of sample collection.	NA	28 Days	250 mL	Plastic, Field Filter Kit
<b>Hexavalent Chromium</b> DW Cr+6 EPA 218.7 (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ 1 ml of $\text{NH}_4\text{OH}/(\text{NH}_4)_2\text{SO}_4$ /100mL	NA	14 Days	500 mL	Plastic or Glass
<b>Hexavalent Chromium SOLID</b> Cr+6 SM 3500 Cr-B	Cool to $\leq 6^{\circ}\text{C}$	30 Days until digestion	7 Days after digestion, if properly preserved	32 oz Jar	Glass or Plastic

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<b>Parameter / Method</b>	<b>Preservative <sup>1</sup></b>	<b>Extraction Holding Time (Organics Only)</b>	<b>Sample / Analysis Holding Time</b>	<b>Container Size</b>	<b>Container Type</b>
<b>Ignitability</b> SW846- 1010A-liquid 1030-solid	Cool to $\leq 6^{\circ}\text{C}$ unless refrigeration would adversely affect the sample. Minimal Headspace	NA	30 Days	500 mL (liquid)  32 oz Jar (solid)	Glass or Plastic
<b>Lead/Copper, First Draw</b> Pb/Cu	Water must not be used for 6 hrs. Aerator on. pH <2 with HNO <sub>3</sub>	NA	6 months	1 Liter	Plastic
<b>Lead/Copper, First Draw</b> Pb/Cu	Cool to $\leq 6^{\circ}\text{C}$ until preserved. If not preserved immediately must add acid within 14 Days	NA	6 months	1 Liter	Plastic
<b>Mercury</b> Hg	pH <2 with HNO <sub>3</sub>	NA	28 Days	500 mL	Plastic or Glass
<b>Mercury, Dissolved</b> Hg-D	Filter and preserve to pH <2 with HNO <sub>3</sub> within 15 minutes of sample collection.	NA	28 Days	250 mL	Plastic or Glass, Field Filter Kit
<b>Mercury, Low Level</b> EPA1631 EPA 1669 (Subcontract)	HCl – refer to method for special instructions	NA	NA	4 x 40 mL vials and <b>Field Blank</b>	Glass

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<b>Mercury SOLID</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	28 Days	32 oz Jar	Glass
<b>Metals (except Hg)</b>	pH <2 with $\text{HNO}_3$ at least 24 hours prior to analysis. To analyze immediately, add the acid within 15 min of collection. If not preserved immediately, must add acid within 14 Days	NA	6 Months	1 Liter (DW) 500 mL (NPW)	Plastic or Glass (Boron and Silica must be in Plastic)  Field Filter Kit
<b>Metals (except Hg) SOLID</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	6 Months	16 oz Jar (EPA 6020) 32 oz Jar (EPA 6010)	Glass
<b>Metals, Dissolved (except Hg)</b>	Filter within 15 min of collection and before adding acid. pH <2 with $\text{HNO}_3$	NA	6 Months	250 mL	Plastic or Glass (Boron and Silica must be in Plastic) Field Filter Kit
<b>Nitrate NO<sub>3</sub>-N</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	250 mL	Plastic or Glass
<b>Nitrate/ Nitrite, combined NO<sub>3</sub>-NO<sub>2</sub></b>	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with $\text{H}_2\text{SO}_4$	NA	28 Days	500 mL	Plastic or Glass

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<b>Nitrate/ Nitrite, combined</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	250 mL	Plastic or Glass
<b>Nitrite NO<sub>2</sub>-N</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	250 mL	Plastic or Glass
<b>Odor</b>	Cool to $\leq 6^{\circ}\text{C}$ Minimal Headspace	NA	24 Hours	1 Liter	Amber Glass
<b>Oil and Grease O&amp;G HEM</b>	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with HCl (or H <sub>2</sub> SO <sub>4</sub> )	NA	28 Days	2 x 1 Liter	Glass
<b>Oil and Grease SOLID</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	28 Days	32 oz Jar	Glass
<b>Ortho-Phosphate as P O-PO<sub>4</sub></b>	Cool to $\leq 6^{\circ}\text{C}$ Filter within 15 min of collection	NA	48 Hours	500 mL	Plastic or Glass
<b>Osmotic Pressure OP</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	500 mL	Plastic or Glass
<b>Paint</b>	Cool to $\leq 6^{\circ}\text{C}$ unless refrigeration would adversely affect the sample.	NA	30 Days	16 oz Jar (NPW) 32 oz Jar (Solid)	Glass or Plastic
<b>Perchlorate (Subcontract)</b>	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required	NA	28 Days	250 mL	Plastic or Glass
<b>pH</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	15 minutes	500 mL	Plastic or Glass

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<b>Phenols</b>	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with $\text{H}_2\text{SO}_4$	NA	28 Days	250 mL 32 oz Jar (Solid)	Glass
<b>Phosphorus, Total PO4</b>	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with $\text{H}_2\text{SO}_4$	NA	28 Days	500 mL	Plastic or Glass
<b>Phosphorus, Total Dissolved PO4-D</b>	Cool to $\leq 6^{\circ}\text{C}$ Filter and preserve to pH <2 with $\text{H}_2\text{SO}_4$ within 15 minutes of sample collection.	NA	28 Days	500 mL	Plastic or Glass
<b>Rads <sup>9</sup> (Subcontract)</b>	pH <2 with HCl or $\text{HNO}_3$	NA	6 months	½ Gallon	Plastic or Glass
<b>Silica as SiO2 Silica</b>	NA	NA	NA	NA	NA
<b>Solids, Settleable Sol</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	2 Liter	Plastic or Glass
<b>Solids TS, TSS, TDS, TVS, VSS</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	7 Days	1 Liter 500 mL (VSS)	Plastic or Glass
<b>Specific Conductance Sp Cond</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	28 Days	500 mL	Plastic or Glass
<b>Sulfate SO4</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	28 Days	250 mL	Plastic or Glass

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<b>Sulfide</b> S2	Cool to $\leq 6^{\circ}\text{C}$ 1 mL 2N Zinc Acetate, pH > 9 with NaOH. Fill bottle completely	NA	7 Days (preserved)  24 hours (not preserved)	500 mL	Plastic or Glass
<b>Sulfide SOLID</b> S2	Cool to $\leq 6^{\circ}\text{C}$	NA	7 Days	32 oz Jar	Plastic or Glass
<b>Sulfite</b> SO3	Typically, Cool to $\leq 6^{\circ}\text{C}$ , but not required. Required: $< 50^{\circ}\text{C}$ . Add 2.5 mL EDTA, minimize contact with air	NA	15 minutes	250 mL	Plastic or Glass
<b>Surfactants</b> MBAS	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	1 Liter	Plastic or Glass
<b>Suitability</b> (Subcontract)	Cool to $< 10^{\circ}\text{C}$	NA	None listed	500 mL	Glass- Dry Heat Sterilized
<b>Temperature</b> Temp	NA	NA	15 minutes	NA	NA
<b>Total Kjeldahl Nitrogen</b> TKN	Cool to $\leq 6^{\circ}\text{C}$ pH < 2 with $\text{H}_2\text{SO}_4$	NA	28 Days	500 mL	Plastic or Glass

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<b>Total Organic Carbon</b> TOC	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with $\text{H}_3\text{PO}_4$ , minimal headspace	NA	28 Days	4 x 40 mL vials	Amber Glass
<b>Total Organic Carbon SOLID</b> TOC (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$	NA	28 Days	32 oz Jar	Glass
<b>Total Organic Carbon, Dissolved <sup>2</sup></b> TOC-D	Cool to $\leq 6^{\circ}\text{C}$ Filter and preserve to pH <2 with $\text{H}_3\text{PO}_4$ within 48 hours. Minimal headspace	NA	28 Days	4 x 40 mL vials	Amber Glass
<b>Total Organic Halogens</b> TOX (Subcontract)	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with $\text{H}_2\text{SO}_4$ (Chlorinated source, add Na Thiosulfate to reduce Free Chlorine)	NA	28 Days	250 mL	Ambler Glass
<b>Total Petroleum Hydrocarbon</b> TPH SGT-HEM	Cool to $\leq 6^{\circ}\text{C}$ pH <2 with HCl	NA	28 Days	2 x 1 Liter	Glass
<b>Turbidity</b> Turbid	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	250 mL	Plastic or Glass

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<b>UV254</b>	Cool to $\leq 6^{\circ}\text{C}$	NA	48 Hours	250 mL	Amber Glass

**NOTE:** The laboratory may use alternative acid or base concentrations for pH preservation.

- <sup>1</sup> Aqueous samples shall not be frozen unless there is data demonstrating that sample freezing does not affect the sample integrity.
- <sup>2</sup> Within 48 hours of sampling, the samples to be analyzed are filtered through a 0.45 $\mu\text{m}$  filter and analyzed immediately or preserved to pH <2 with Phosphoric Acid.
- <sup>3</sup> If the analysis is for TTHMs only and Sodium Thiosulfate was used to dechlorinate, acidification may be omitted and the holding time will still be 14 days.
- <sup>4</sup> When collecting a sample for EPA 300.1 from a treatment plant employing Chlorine Dioxide, the sample must be sparged with an inert gas prior to the addition of the EDA at the time of sampling.
- <sup>5</sup> Sample analysis should begin as soon as possible after receipt; sample incubation must be started no later than 8 hours from the time of collection.
- <sup>6</sup> The pH adjustment is only required if Acrolein is being analyzed. Samples for Acrolein that receive no pH adjustment must be analyzed within 3 days of sampling. MJRA prefers to collect both preserved and unpreserved samples for Acrolein and Acrylonitrile in the event a 3-day analysis is not feasible.
- <sup>7</sup> If no soil kit is available, encores may be used, however, the sample must be transferred to soil vials within 48 hours of collection.
- <sup>8</sup> The pH adjustment for SM 6640B may be performed upon receipt at the laboratory and may be omitted if the samples are extracted within 72 hours of collection.
- <sup>9</sup> Container size and volume requirements vary depending on which analytes will be tested.