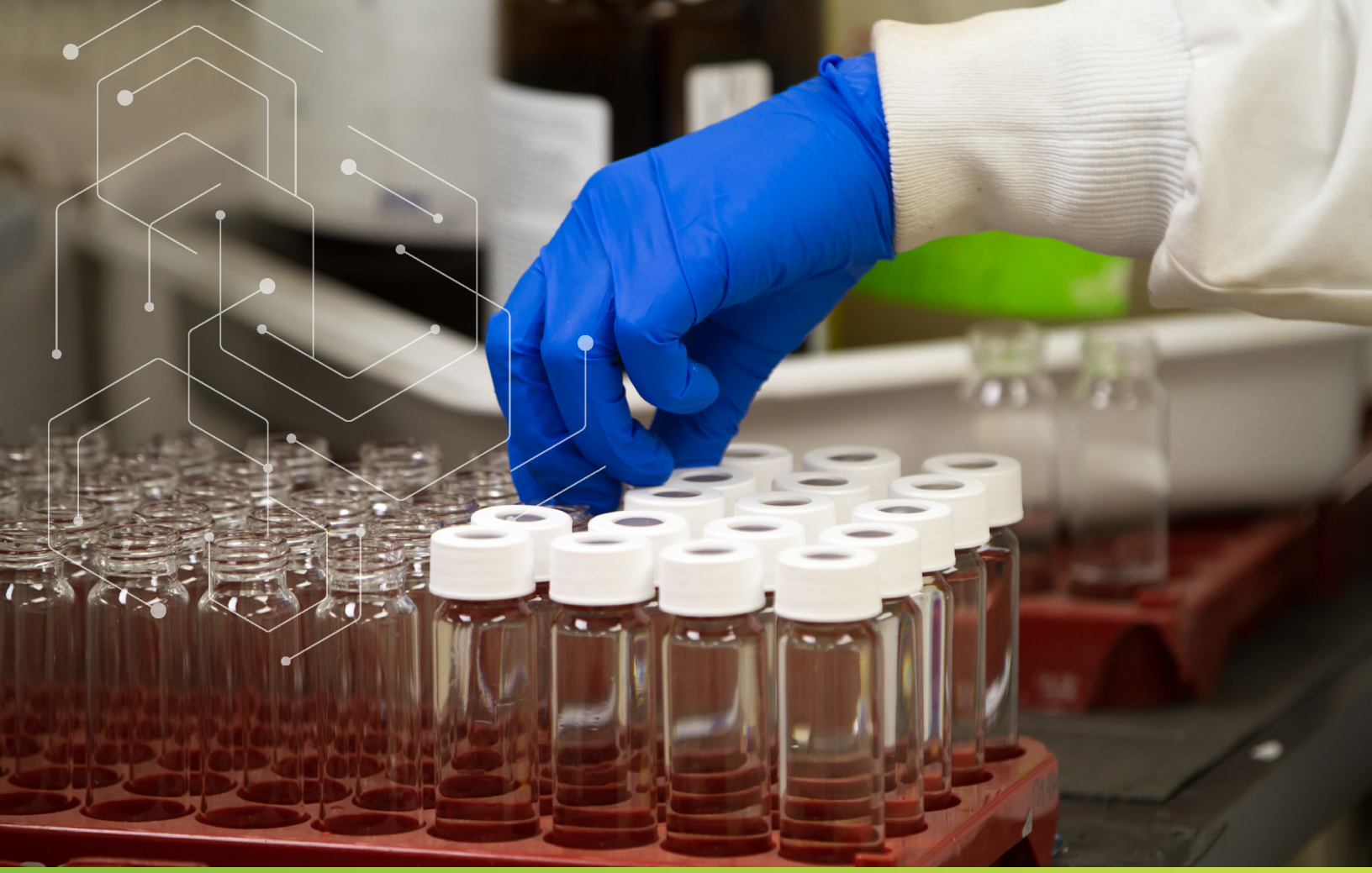

Pace®

SERVICE GUIDE

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If the analytical testing you need isn't listed, please reach out to your Account Executive.

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DIOXIN & FURAN**
(See Note 1)

Matrix	Parameter	Method	Container	Preservative	Max Hold Time (Prep/Analysis)
Potable Water	2,3,7,8-TCDD	EPA 1613	2 - 1000 mL Amber Glass	≤6°C, $Na_2S_2O_3$	1 Year
Aqueous	2,3,7,8-TCDD	EPA 1613	2 - 1000 mL Amber Glass	≤6°C	1 Year
Aqueous	2,3,7,8-TCDD	EPA 8280M / 8290	2 - 1000 mL Amber Glass	≤6°C	30 Days
Aqueous	Dioxins & Furans	EPA 1613	2 - 1000 mL Amber Glass	≤6°C	1 Year
Aqueous	Dioxins & Furans	EPA 8280M / 8290	2 - 1000 mL Amber Glass	≤6°C	30 Days
Solid	2,3,7,8-TCDD	EPA 1613	4 oz Glass Jar	≤6°C	1 Year
Solid	2,3,7,8-TCDD	EPA 8280M / 8290	4 oz Glass Jar	≤6°C	30 Days
Solid	Dioxins & Furans	EPA 8280M / 8290	4 oz Glass Jar	≤6°C	30 Days
Tissue	Dioxins & Furans	EPA 1613	Aluminum Foil / ziptop bag	Freeze	1 Year
Air	Stack Testing Dioxins & Furans (see note 2)	Method 23	XAD-II Trap/Filter/2-500 mL Amber Glass	N/A	30 Days
Air	Ambient Air Dioxins & Furans (see note 2)	EPA TO-9	High/Low Volume PUF/Filter	N/A	7 Days

PCB CONGENERS**
(See Note 1)

Matrix	Parameter	Method	Container	Preservative	Max Hold Time
Aqueous	WHO List (12 PCB Congeners)	EPA 1668	2 - 1000 mL Amber Glass	≤6°C	1 Year
Aqueous	209 PCB Congeners and Totals	EPA 1668	2 - 1000 mL Amber Glass	≤6°C	1 Year
Aqueous	209 PCB Congeners and Homologs	EPA 8270C/680/NOAA M	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Aqueous	Total Maximum Daily Load (TMDL)-209 PCB Congeners and Totals	EPA 1668	2 - 2000 mL Amber Glass	≤6°C	1 Year
Solid	WHO List (12 PCB Congeners)	EPA 1668	4 oz Glass Jar	≤6°C	1 Year
Solid	209 PCB Congeners and Totals	EPA 1668	4 oz Glass Jar	≤6°C	1 Year
Solid	209 PCB Congeners and Homologs	EPA 8270C/680/NOAA M	4 oz Glass Jar	≤6°C	14/40 Days*
Tissue	WHO List (12 PCB Congeners)	EPA 1668	Aluminum Foil / ziptop bag	Freeze	1 Year
Tissue	209 PCB Congeners and Totals	EPA 1668	Aluminum Foil / ziptop bag	Freeze	1 Year
Tissue	Congeners Low Resolution	EPA 8270 M / 680	ziptop type bag	Freeze	1 Year
Air	Polychlorinated Biphenyls Congeners	TO-4A / TO-10A / EPA 8270 SIM	High / Low Volume PUF	N/A	7/40 Days*
Air	Polychlorinated Biphenyls Homoglogs	TO-4A / TO-10A / EPA 680M/3540C	High / Low Volume PUF	N/A	7/40 Days*

PFAS

Matrix	Method	Container	Preservative	Max Hold Time (Prep/Analysis)
Potable Water	EPA 537.1	2-250 mL HDPE	Trizma, ≤6°C	14/28 Days *
Potable Water	EPA 533	2-250 mL HDPE	Ammonium Acetate, ≤6°C	28/28 Days *
Aqueous	EPA 1633A	2-250 mL HDPE	≤6°C	28/90 Days *
Aqueous	ASTM D8421/ EPA 8327	3-15 mL PP or HDPE	≤6°C	28 Days (combined)
Aqueous/landfill leachate	EPA 1633A	2-60 mL HDPE	≤6°C	28/90 Days *
Aqueous	EPA 1621 (AOF)	3-125 mL	≤6°C	90 Days (combined)
Aqueous	537M/ PFAS by Isotope Dilution/ Lab SOP	2 -250 mL HDPE	≤6°C	28/28 Days *
Solid	EPA 1633A	1-90 mL PP or 125 mL HDPE	≤6°C	90/90 Days *
Solid	ASTM D8535/ EPA 8327	1-90 mL PP or 125 mL HDPE	≤6°C	28 Days (combined)
Solid	537M/ PFAS by Isotope Dilution/ Lab SOP	1-90 mL PP or 125 mL HDPE	≤6°C	28/28 Days *

For other PFAS methods such as TOP Assay or SPLP/TCLP PFAS, or unique matrices such as AFFF/F3, passive samplers, or Consumer/Industrial Products, please contact you local account executive.

*Max Hold Time for Sample Prep/Max Hold Time for Analysis after Sample Prep
**All methods require samples to remain in darkness or out of direct contact with sunlight.
1) Some State or Federal agencies may have alternative hold times and those must be met.
2) Sample Train preparation fee will be charged separately. Air sample can be calculated by "per sample," or by recorded volume sampled

TISSUE (PLANT AND ANIMAL)

Parameter	Method	Container	Preservative	Max Hold Time
Dioxins & Furans (see note 1)	EPA 1613	Aluminum Foil / ziptop bag	Freeze	1 Year
Mercury	(EPA 245.6 / 7471 / 7473 / 7474 / 1631)	ziptop type bag	Freeze	1 Year
Metals	EPA 6020	ziptop type bag	Freeze	1 Year
PCBs	EPA 8082	ziptop type bag	Freeze	1 Year
PCB Congeners (WHO List-12 congeners-see note 1)	EPA 1668	Aluminum Foil / ziptop bag	Freeze	1 Year
PCB Congeners (209 congeners and Totals-see note 1)	EPA 1668	Aluminum Foil / ziptop bag	Freeze	1 Year
PFAS	EPA 1633 or 537M	HDPE Container / ziptop bag	Freeze	1 Year
Polynuclear Aromatic Hydrocarbons (PAH-SIM)	EPA 8270 SIM	ziptop type bag	Freeze	1 Year
Congeners Low Resolution	EPA 8270 M / 680	ziptop type bag	Freeze	1 Year
Pesticides, Organochlorine	EPA 8081	ziptop type bag	Freeze	1 Year

1) Some State or Federal agencies may have alternative hold times and those must be met.

MICROBIOLOGY

Matrix	Parameter	Method	Container	Preservative	Max Hold Time
Potable Water	Coliform, Total	SM9222B, 9223B, Colisure	Sterile 120 mL Plastic	<10°C, $Na_2S_2O_3$	Short Hold Time: Check with local lab for required holding times
Potable Water	Coliform, E.Coli	SM9222B, 9223B, Colisure	Sterile 120 mL Plastic	<10°C, $Na_2S_2O_3$	Short Hold Time: Check with local lab for required holding times
Potable Water	Coliform, Total (MPN)	SM9221B	Sterile 120 mL Plastic	<10°C, $Na_2S_2O_3$	Short Hold Time: Check with local lab for required holding times
Potable Water	Coliform, Fecal	SM9222D, Colilert 18	Sterile 250 mL Plastic	≤6°C, $Na_2S_2O_3$	Short Hold Time: Check with local lab for required holding times
Potable Water	Coliform, Fecal (MPN)	SM9221 C, E	Sterile 250 mL Plastic	≤6°C, $Na_2S_2O_3$	Short Hold Time: Check with local lab for required holding times
Potable Water	Cryptosporidium, Giardia	EPA 1623	10 L Cubatainer	≤6°C	96 Hours
Potable Water	Heterotrophic Plate Count (HPC)	Simplate	Sterile 120 mL Plastic	≤6°C, $Na_2S_2O_3$	8 Hours
Potable Water	Legionella	CDC Method	Sterile 250 mL Plastic	$Na_2S_2O_3$	24 Hours
Aqueous	Legionella	ISO 11731:2017	Sterile 250 mL Plastic	$Na_2S_2O_3$	24 Hours
Aqueous	Salmonella	Culture Method	Sterile 250 mL Plastic	$Na_2S_2O_3$	24 Hours
Solid	Fecal Coliform	EPA 1681	Sterile 250 mL Plastic	≤6°C, $Na_2S_2O_3$	24 Hours

ORGANIC PARAMETERS IN SOLID SAMPLES

Parameter	Method	Container	Preservative	Max Hold Time (Prep/Analysis)
SVOC Base / Neutrals and Acids (BNA)	EPA 8270	4 oz Glass Jar	≤6°C	14/40 Days*
Alkylated PAH-SIM (EPA /EMAP 34)	EPA 8270C M	4 oz Glass Jar	≤6°C	14/40 Days*
Diesel Range Organics (DRO)	EPA 8015	4 oz Glass Jar	≤6°C	14/40 Days*
Explosives	EPA 8330 / 8332	4 oz Glass Jar	≤6°C	14/40 Days*
Gasoline Range Organics (GRO)	EPA 8015	5035/5035A Methanol Vial Kit	≤6°C	14 Days
Herbicides, Chlorinated	EPA 8151 / 8321	4 oz Glass Jar	≤6°C	14/40 Days*
PCBs	EPA 8082	4 oz Glass Jar	≤6°C	1 Year
Pesticides, Organochlorine	EPA 8081	4 oz Glass Jar	≤6°C	14/40 Days*
Pesticides, Organophosphorus	EPA 8141	4 oz Glass Jar	≤6°C	7/40 Days*
Pesticides, Organophosphorus	EPA 8270 SIM	4 oz Glass Jar	≤6°C	14/40 Days*
Polynuclear Aromatic Hydrocarbons	EPA 8270 SIM	4 oz Glass Jar	≤6°C	14/40 Days*
State Specific Petroleum Methods	Various (contact local Pace® Lab)	Various (contact local Pace® lab)	≤6°C	Varies per Method
Volatiles	EPA 8260	5035 vial kit or 4 oz Glass Jar	≤6°C	14 Days
Volatiles	EPA 8260	3-40 mL Vials (2-40 mL vials DI H_2O, 1-40 mL vial MeOH) + Dry Weight container	≤6°C	Freeze DI H20 vials within 48 hrs/14 Days
Volatiles	EPA 8260 (EZ SOIL)	5035/5035A Methanol Vial Kit (see note 3)	≤6°C	14 Days

*Max Hold Time for Sample Prep/Max Hold Time for Analysis after Sample Prep
3) Not all Pace® network labs are able to analyze 8260 solid samples from a Methanol Vial kit. Confirm with local laboratory of capability.

ORGANIC PARAMETERS IN AQUEOUS SAMPLES

Parameter	Method			Container	Preservative	Max Hold Time (Prep/Analysis)
	Drinking Water	Non-Potable Water	SW-846			
Alcohols and Glycols			EPA 8015	3 - 40mL vials	≤6°C (zero headspace)	14 Days
Aromatic & Halogenated Volatiles		EPA 601 / 602 / 624	EPA 8260 / SM6200B	3 - 40mL vials	pH<2 HCl, ≤6°C (zero headspace)	14 Days
Aromatic Volatiles		EPA 601 / 602 / 624	EPA 8260 / SM6200B	3 - 40mL vials	≤6°C (zero headspace)	7 Days (if unpreserved)
SVOC Base / Neutrals and Acids (BNA)	EPA 525.3			4 - 1000 mL Amber Glass	L-Ascorbic Acid, EDTA, Potassium Dihydrogen citrate, ≤6°C	14/28 Days*
		EPA 625 / 625.1	EPA 8270	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
		EPA 625 / 625.1 (RVT)	EPA 8270 (RVT)	2 - 100 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
Alkylated PAH-SIM (EPA /EMAP 34)			EPA 8270C M	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Diesel Range Organics (DRO)			EPA 8015	2 - 1000 mL Amber Glass	≤6°C	7/40 Days* (see note 4)
			EPA 8015 (RVT)	3 - 40mL vials	≤6°C	7/40 Days* (see note 6)
EDB & DBCP	EPA 504.1			3 - 40mL vials	$Na_2S_2O_3$, ≤6°C (zero headspace)	14 Days
			EPA 8011	3 - 40mL vials	"pH<2 HCl or $Na_2S_2O_3$, ≤6°C (zero headspace)"	14 Days
Explosives			EPA 8330	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
Gasoline Range Organics (GRO)			EPA 8015	3 - 40mL vials	pH<2 HCl, ≤6°C (zero headspace)	14 Days (see note 4)
Haloacetic Acids (HAAs)	EPA 552.2 / 552.3			1 - 250 mL Amber Glass	NH_4Cl, ≤6°C	14 Days
Herbicides, Chlorinated	EPA 515.1 / 515.3			2 - 1000 mL Amber Glass	≤6°C, $Na_2S_2O_3$ if Cl present	14/28 Days*
			EPA 8151	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
			EPA 8321	2 - 40 mL vials or 2 - 500 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
PCBs			EPA 8082	2 - 1000 mL Amber Glass	≤6°C	1 Year
			EPA 8082 (RVT)	2 - 100 mL Amber Glass	≤6°C	1 Year (see note 6)
PCBs & Pesticides, Organochlorine		EPA 608 / 608.3		2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
		EPA 608 / 608.3 (RVT)		2 - 100 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
Pesticides, Organochlorine			EPA 8081	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
			EPA 8081 (RVT)	2 - 100 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
Pesticides, Organophosphorus			EPA 8141	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
			EPA 8141 (RVT)	2 - 100 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
			EPA 8270 SIM	3-40 mL vials	≤6°C	7/40 Days*
Polynuclear Aromatic Hydrocarbons (PAH)			EPA 8270, 8270 SIM	2 - 1000 mL Amber Glass	≤6°C	7/40 Days*
			EPA 8270 (RVT), 8270 SIM (RVT)	3 - 40 mL Amber vials or 2 - 100 mL Amber Glass	≤6°C	7/40 Days* (see note 6)
State Specific Petroleum Methods		Various (contact local Pace® Lab)		Various (contact local Pace® lab)	≤6°C	Varies per Method
Volatiles (DW / Trihalomethanes (THM))	EPA 524.2			3 - 40mL vials	Ascorbic Acid, pH<2 HCl, ≤6°C (zero headspace)	14 Days (see note 5)
Volatiles (Acrolein and Acrylonitrile)		EPA 624 / 624.1		3 - 40mL vials	≤6°C (zero headspace)	72 Hours (unpreserved)
Volatiles		EPA 624 / 624.1	EPA 8260	3 - 40mL vials	pH<2 HCl, ≤6°C (zero headspace)	14 Days
		EPA 624 / 624.1	EPA 8260	3 - 40mL vials	≤6°C (zero headspace)	7 Days (if unpreserved)

*Max Hold Time for Sample Prep/Max Hold Time for Analysis after Sample Prep
4) States may have specific method requirements
5) EPA 524.2 lists ascorbic acid as the preser vative when residual chlorine is suspected, unless gases or Table 7 compounds are NOT compounds of interest and then HCL is the preser vative recommended.
6) Reduce Volume Technology (RVT) methods may require a dif ferent sample container (volume) depending on location; verify with local Pace® Laboratory.

INORGANIC PARAMETERS IN AQUEOUS SAMPLES

Parameter	Method			Container	Preservative	Max Hold Time (Prep/Analysis)
	Drinking Water	Non-Potable Water	SW-846			
Acidity		SM2310B		250 mL Plastic	≤6°C	14 Days
Alkalinity	EPA 310.2	SM2320B		250 mL Plastic	≤6°C	14 Days
BOD		SM5210B / Hach 10360		1000 mL Plastic	≤6°C	48 Hours
Bromide	EPA 300.0	EPA 300.0	EPA 9056	250 mL Plastic	None	28 Days
Carbonaceous BOD (cBOD)		SM5210B / Hach 10360		1000 mL Plastic	≤6°C	48 Hours
Chloride	EPA 300.0	EPA 300.0 / SM4500Cl-E	EPA 9056/9251	250 mL Plastic	None	28 Days
Chlorine, Residual	EPA 330.5	SM4500Cl-D, G / Hach 8167		250 mL Plastic	None	15 Minutes
COD	EPA 410.4	SM5220 D / Hach 8000		125 mL Plastic	pH<2 H_2SO_4, ≤6°C	28 Days
Color	SM2120B, E			250 mL Plastic	≤6°C	48 Hours
Cyanide, Amenable	EPA 353.3/335.4	SM4500CN- E, G	EPA 9012/9014	250 mL Plastic	pH>12 NaOH; ≤6°C ascorbic acid if Cl present	14 Days
Cyanide, Available		OIA 1677-09		250 mL Plastic / Glass	pH 11-12 NaOH; ≤6°C	14 Days
Cyanide, Free		OIA 1677-09, ASTM D7237-10, D4282-02, SM4500-CN E, I	EPA 9014	250 mL Plastic / Glass	pH 11-12 NaOH; ≤6°C	14 Days
Cyanide, Total	EPA 335.4	SM4500CN- E	EPA 9012/9014	250 mL Plastic	pH>12 NaOH; ≤6°C	14 Days
Dissolved Organic Carbon (DOC)		SM5310 B, C		3 - 40 mL vials	pH<2 H_2SO_4 or HCl, ≤6°C	28 Days (if unpreserved 48 Hours)
Ferrous Iron		SM3500Fe-B, D		250 mL Plastic unpreserved	None	Immediate
Flashpoint / Ignitability			EPA 1010 / 1020	250 mL Glass	None	28 Days
Fluoride	EPA 300.0	EPA 300.0, SM4500FI-C	EPA 9056	250 mL Plastic	None	28 Days
Hardness, Total (CaCO3)	EPA 130.1	SM2340B, C		250 mL Plastic	pH<2 HNO_3	180 Days
Hexavalent Chromium	EPA 218.6 / 218.7	SM3500Cr-B	EPA 7196 / 7199	250 mL Plastic	≤6°C	24 Hours, unless aqueous samples preserved per method; then 28 Days
Mercury	EPA 245.1 / 245.2		EPA 7470	250 mL Plastic	pH<2 HNO_3	28 Days
Mercury, Low Level	EPA 1631E/245.7			250 mL Glass	12N HCl or BrCl	48 hours for preservation or analysis; 28 days to preservation if sample oxidized in bottle; 90 days for analysis if preserved
Metals (ICP / ICPMS)		EPA 200.7 / 200.8	EPA 6010/6020	250 mL Plastic	pH<2 HNO_3	180 Days
Metals (DW-Lead/Copper) (See Note 7)	EPA 200.7 / 200.8			1000 mL Plastic	None	Preserve with HNO3 pH<2 within 14 days of collection, 180 Days
Nitrogen, Ammonia	EPA 350.1	SM4500NH3 D, G, H		125 mL Plastic	pH<2 H_2SO_4, ≤6°C	28 Days
Nitrogen, Kjeldahl	EPA 351.2	SM4500-Norg		125 mL Plastic	pH<2 H_2SO_4, ≤6°C	28 Days
Nitrogen, Nitrate & Nitrite	EPA 300.0 / 352.1 / 353.2	EPA 300.0 / EPA 353.2 / SM4500-NO3	EPA 9056	125 mL Plastic	≤6°C	48 Hours
Nitrogen, Nitrate plus Nitrite	EPA 300.0 / 353.2	EPA 300.0 / EPA 353.2 / SM4500-NO3	EPA 9056	125 mL Plastic	pH<2 H_2SO_4, ≤6°C	28 Days
Nitrogen, Organic	EPA 351.2 / 350.1			Calculation	pH<2 H_2SO_4, ≤6°C	28 Days
Odor		SM2150B		500 mL Amber Glass	≤6°C	24 Hours
Oil & Grease (HEM)		EPA 1664		2 - 1000 mL Amber Glass	pH<2 H_2SO_4 or HCl, ≤6°C	28 Days
Oxygen, Dissolved	EPA 360.1 / 360.2	SM4500-O G		500 mL Plastic	None	15 Minutes
Phenolics, Total		EPA 420.1 / 420.4	EPA 9065 / 9066	250 mL Amber Glass	pH<2 H_2SO_4, ≤6°C	28 Days
Phosphorus, Orthophosphate		SM4500P E		250 mL Plastic	Field Filter, ≤6°C	Field Filter within 15 minutes, analyze within 48 hours
Phosphorus, Total	EPA 365.1 / 365.3 / 365.4	SM4500P		125 mL Plastic	pH<2 H_2SO_4, ≤6°C	28 Days
Silica		EPA 200.7	EPA 6010	250 mL Plastic	≤6°C	180 Days
Solids, Settleable		SM2540F		2 - 1000 mL Plastic	≤6°C	48 Hours
Solids, Total		SM2540B		250 mL Plastic	≤6°C	7 Days
Solids, Total Dissolved		SM2540C		500 mL Plastic	≤6°C	7 Days
Solids, Total Suspended		SM2540D		1000 mL Plastic	≤6°C	7 Days
Solids, Total Volatile		EPA 160.4 / SM2540E		500 mL Plastic	≤6°C	7 Days
Specific Conductance		SM2510B	EPA 9050	250 mL Plastic	≤6°C	28 Days
Specific Conductance	EPA 120.1			250 mL Plastic	≤6°C	24 hrs to Filter; then 28 days
Sulfate	EPA 300.0	SM4500SO4 / ASTM D516	EPA 9038 / 9056	250 mL Plastic	≤6°C	28 Days
Sulfide, Total		SM4500S		125 mL Plastic	pH>9 NaOH and ZnOAc; ≤6°C	7 Days
Sulfide, Total			EPA 9030 / 9034	125 mL Plastic	pH>9 NaOH and ZnOAc; ≤6°C (zero headspace)	7 Days
Sulfite		SM4500SO3B		250 mL Plastic	None	15 Minutes
Surfactants (MBAS)		SM5540C		500 mL Plastic	≤6°C	48 Hours
Total Organic Carbon (TOC)		SM5310B, C	EPA 9060	Amber Glass	pH<2 H_2SO_4 or HCl or H_3PO_4, ≤6°C	28 Days
Total Organic Halogen (TOX)			EPA 9020 / 9076	Amber Glass	pH<2 H_2SO_4, ≤6°C (zero headspace)	28 Days
Turbidity	EPA 180.1	SM2130B		250 mL Plastic	≤6°C	48 Hours

7) The Lead and Copper Rule is for sampling at the tap (residential, daycares, nursing homes, schools... etc); not intended for drinking water plants

INORGANIC PARAMETERS IN SOLID SAMPLES

Parameter	Method		Container	Preservative	Max Hold Time
	Soil/Solid SW-846	SW-846			
Acid Volatile Sulfide / Simultaneously Extracted Metals (AVS/SEM) (Cd,Cu,Pb,Ni,Zn)	EPA-821-R-91-100 / Pace® SOP		4 oz Glass Jar	≤6°C (zero headspace, minimize exposure to air, do not freeze)	14 Days
Asbestos (PLM-bulk)		EPA 600/R-93/116	4 oz Glass Jar	None	N/A
Chloride	EPA 300.0	EPA 9056 / 9251	4 oz Glass Jar	None	28 Days
Cyanide, Free		EPA 9014	4 oz Glass Jar	≤6°C	14 Days
Cyanide, Total		EPA 9012 / EPA 9014 / SM4500CN- E	4 oz Glass Jar	≤6°C	14 Days
Extractable Organic Halides (EOX)		EPA 9023	4 oz Glass Jar	≤6°C	28 Days
Flashpoint / Ignitability		EPA 1010 / 1020	4 oz Glass Jar	None	28 Days
Ignitability		EPA 1030	4 oz Glass Jar	None (zero headspace)	28 Days
Fluoride	EPA 300.0	EPA 9056	4 oz Glass Jar	None	28 Days
Fractional Organic Carbon (FOC)		ASTM D2974	4 oz Glass Jar	≤6°C	7 Days
Hexavalent Chromium		EPA 7196 / 7199	4 oz Glass Jar	≤6°C	30 Days
Mercury		EPA 7471	4 oz Glass Jar	≤6°C	28 Days
Metals (ICP / ICPMS)		EPA 6010/6020	4 oz Glass Jar	None	180 Days
Nitrogen, Ammonia	EPA 350.1	SM4500NH3 C, D, G, H	4 oz Glass Jar	≤6°C	28 Days
Nitrogen, Kjeldahl	EPA 351.2		4 oz Glass Jar	≤6°C	28 Days
Nitrogen, Nitrate & Nitrite		EPA 9056	4 oz Glass Jar	≤6°C	48 Hours
Nitrogen, Nitrate plus Nitrite	EPA 353.2	EPA 9056 / SM4500-NO3	4 oz Glass Jar	≤6°C	28 Days
Nitrogen, Organic	EPA 351.2 / 350.1		Calculation	≤6°C	28 Days
Oil & Grease (HEM)		EPA 9071	4 oz Glass Jar	≤6°C	28 Days
Paint Filter Liquid Test		EPA 9095	4 oz Glass Jar	None	N / A
Phenolics, Total		EPA 9065 / 9066	4 oz Glass Jar	≤6°C	28 Days
Phosphorus, Total	EPA 365.4 / SM4500P		4 oz Glass Jar	≤6°C	28 Days
Solids, Total	SM2540G		4 oz Glass Jar	≤6°C	7 Days
Solids, Total Volatile	SM2540G		4 oz Glass Jar	≤6°C	7 Days
Specific Conductance	SM2510B	EPA 9050	4 oz Glass Jar	≤6°C	28 Days
Sulfate	EPA 300.0	EPA 9038 / 9056	4 oz Glass Jar	≤6°C	28 Days
Sulfide, Total	SM4500S	EPA 9030 / 9034	4 oz Glass Jar	≤6°C	7 Days
Total Organic Carbon (TOC)		EPA 9060 / Walkley Black	4 oz Glass Jar	≤6°C	28 Days
Total Organic Carbon (TOC)		Lloyd Kahn	4 oz Glass Jar	≤6°C	14 Days

LDNR 29B ANALYSIS ON SOLID SAMPLES

Parameter	Method	Container	Preservative	Max Hold Time
Cation Exchange Capacity (CEC)	LDNR 29B	32 oz Glass Jar	None	180 Days
Electrical Conductivity (EC)	LDNR 29B	32 oz Glass Jar	None	180 Days
Exchange Sodium Percentage (ESP)	LDNR 29B	32 oz Glass Jar	None	180 Days
Sodium Adsorption Ratio (SAR)	LDNR 29B	32 oz Glass Jar	None	180 Days
Saturation Percentage	LDNR 29B	32 oz Glass Jar	None	180 Days
True Total Barium	LDNR 29B	32 oz Glass Jar	None	180 Days
pH Measurement	LDNR 29B	32 oz Glass Jar	None	180 Days

AIR TOXICS
(See Note 8)

Parameter	Method	Container	Max Hold Time (Prep/Analysis)
BTEX, MTBE, TPH low fraction	Method 18M	Sampling Bag (Tedlar)	48 Hours
BTEX, MTBE, TPH low fraction	Method 18M	Summa Canister	28 Days
BTEX, Trimethylbenzenes	EPA TO-3	Sampling Bag (Tedlar)	48 Hours
BTEX, Trimethylbenzenes	EPA TO-3	Summa Canister	28 Days
Dioxins & Furans (Ambient Air)	EPA TO-9	High/Low Volume PUF/Filter	7 Days
Dioxins & Furans (Stack Testing)	Method 23	XAD-II Trap/Filter/2-500 mL Amber Glass	30 Days
Particulate Matter less than 2.5 micrometers (PM 2.5)	40CFR 50AppL	47mm Teflon Filter	60 Days
Particulate Matter less than 10 micrometers (PM 10)	40CFR 50AppJ	47mm Teflon Filter, 8in x 10in Quartz/Glass Filter	60 Days
MA Air Phase Petroleum Hydrocarbon	MA-APH	Summa Canister	28 Days
Metals (ICP-MS)	EPA 6020	37mm Cassette	180 Days
Metals (ICP)	IO-3.4	47mm Teflon Filter, 8in x 10in Quartz Filter	N/A
Metals (ICP-MS)	IO-3.5	47mm Teflon Filter, 8in x 10in Quartz Filter	N/A
Metals (ICP-MS)	EQL0310189 / 40CFR AppG	8in x 10in Quartz/Glass Filter	N/A
Mercury	NIOSH 6009M	Sorbent Tube	28 Days
Methane, Ethane, Ethene, Acetylene, Butane, Isobutane, Propane	EPA TO-3M	Sampling Bag (Tedlar)	48 Hours
Methane, Ethane, Ethene, Acetylene, Butane, Isobutane, Propane	EPA TO-3M	Summa Canister	28 Days
Methane, Ethane, Ethene, Acetylene, Butane, Isobutane, Propane	EPA 8015M	Sampling Bag (Tedlar)	48 Hours
Methane, Ethane, Ethene, Acetylene, Butane, Isobutane, Propane	EPA 8015M	Summa Canister	28 Days
Non-Methane Organic Compounds (NMOC)	EPA TO-12	Sampling Bag (Tedlar)	48 Hours
Non-Methane Organic Compounds (NMOC)	EPA TO-12	Summa Canister	30 Days
Passive Benzene, 1,3-Butadiene, Chloroprene, 1,2-Dichloroethane	Method 325B	Passive Diffusion Tube	30 Days
"Permanent/Fixed Gases (He, CH4, N2, CO2, O2, CO)"	EPA 3C / ASTM 1946	Sampling Bag (Tedlar)	48 Hours
"Permanent/Fixed Gases (He, CH4, N2, CO2, O2, CO)"	EPA 3C / ASTM 1946	Summa Canister	28 Days
Polychlorinated Biphenyls Congeners	TO-4A / TO-10A / EPA 8270 SIM	High / Low Volume PUF	7/40 Days*
Polychlorinated Biphenyls Homoglogs	TO-4A / TO-10A / EPA 680M/3540C	High / Low Volume PUF	7/40 Days*
Pesticides and Polychlorinated Biphenyls	EPA TO-4A	High Volume PUF	7/40 Days*
Polychlorinated Biphenyls	EPA TO-10A	Low Volume PUF	7/40 Days*
Polycyclic Aromatic Hydrocarbons in Ambient Air	EPA TO-13A	High or Low Volume PUF	7/40 Days*
Sulfides and Mercaptans	TO-15M	Sampling Bag (Tedlar)	48 Hours
Total Suspended Particulate (TSP)	40CFR 50AppB	8in x 10in Quartz/Glass Filter	60 Days
Volatile Organic Compounds (PCE, and breakdown products – 6 compounds)	Radiello 130	Sorbent Tube	30 Days
Volatile Organic Compounds	EPA TO-14	Sampling Bag (Tedlar)	48 Hours
Volatile Organic Compounds	EPA TO-14	Summa Canister	28 Days
Volatile Organic Compounds	EPA TO-15	Sampling Bag (Tedlar)	48 Hours
Volatile Organic Compounds	EPA TO-15	Summa Canister	28 Days
Volatile Organic Compounds ultra low level SIM	EPA TO-15 SIM	Summa Canister	28 Days
Volatile Organic Compounds low level scan + ultra low level SIM	EPA TO-15 SIM scan	Summa Canister	28 Days
Volatile Organic Compounds in Products/Materials	Product Off-Gassing	Project specific	

*Max Hold Time for Sample Prep/Max Hold Time for Analysis after Sample Prep
8) Available compounds/analytes & capability are air lab location dependent

FIELD SERVICES STACK/EMISSIONS

Parameter	Method	Container	Max Hold Time
Ammonia	CTM-027	On-site testing - Lab Analysis	NA
Calibration Gas Audit	Challenge the CEMS with audit samples of known concentration (EPA Protocol 1).	On-site Real Time Analysis	NA
Carbon Monoxide	EPA 10	On-site Real Time Analysis	NA
CEMS & PEMS RATA	EPA Method 3A, 6C, 7E, 10 and Performance Specifications	On-site Real Time Analysis	NA
COMS RATA		On-site Real Time Analysis	NA
Dioxin/Furans	Method 23	On-site testing - Lab Analysis	NA
Filterable Particulate	EPA 5, 17	On-site testing - Lab Analysis	NA
Gaseous Organic and Inorganic Compounds, Includes VOCs and HAPs	EPA 320, ASTM D7653, NIOSH 3800	On-site Real Time Analysis or 5 Liter Tedlar Bag	Compound dependent
Halides & Halogens	EPA 26 & 26A	On-site testing - Lab Analysis	NA
Hydrogen Sulfide	EPA 15M	1L Tedlar Bag	24 Hours
Inorganic Lead	Method 12	On-site testing - Lab Analysis	NA
Metals	EPA 29	On-site testing - Lab Analysis	NA
Methanol, Formaldehyde, Phenol	NCASI Method 98.01	On-site testing - Lab Analysis	NA
Methanol, Acetone, Acetaldehyde, Methyl Ethyl Ketone, Formaldehyde (Additional VOC & HAPS included if needed)	NCASI Method 94.02	On-site testing - Lab Analysis	NA
Methanol, Phenol, Formaldehyde, Acetaldehyde, Propionaldehyde, Acrolein	NCASI Method 105.01	On-site testing - Lab Analysis	NA
Nitrogen Oxides	EPA 7E	On-site Real Time Analysis	NA
Opacity & Fugitive Emissions	EPA 9 AND 22	On-site Real Time Analysis	NA
Oxygen & Carbon Dioxide	EPA 3A	On-site Real Time Analysis	NA
PFAS	OTM 45 & OTM 50	On-site testing - Lab Analysis	NA
PM-10/PM2.5 Filterable Particulate	EPA Method 201A	On-site testing - Lab Analysis	NA
Sulfur Dioxide	EPA 6C	On-site Real Time Analysis	NA
Sulfuric Acid Mist & Sulfur Dioxide	Method 8	On-site testing - Lab Analysis	NA
Total Condensable Particulate	EPA Method 202	On-site testing - Lab Analysis	NA
Total Enclosure	EPA Method 204	On-Site Testing	NA
Total Hydrocarbons	Method 25A	On-site Real Time Analysis	NA
Total Particulate and Gaseous Mercury	EPA Method 101 & 101A	On-site testing - Lab Analysis	NA
Total Reduced Sulfur	EPA 16C	On-site testing - Lab Analysis	NA
Total Vapor Phase Mercury	EPA 30B	On-site testing - Lab Analysis	NA
Volatile Organic Compounds	Method 18	On-site testing - Lab Analysis	NA
Volatile Organic Compounds as Total Gaseous Non-Methane Organics (TGNMO)	Method 25	On-site testing - Lab Analysis	NA

RADIOCHEMISTRY

Matrix	Parameter	Technique	Container	Preservative	Max Hold Time
Aqueous	Gamma Emitting Radionuclides	Gamma Spectroscopy	2 - 1000 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Gross Alpha & Gross Beta	Gas Flow Proportional Counting	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Gross Alpha (High Solids)	Co-Precipitation	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	NORM	Gamma Spectroscopoy	2 - 1000 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Radium-226	Radon Emanation; Alpha Spectroscopy	1000 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Radium-228	Gas Flow Proportional Counting	1000 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Strontium-90	Gas Flow Proportional Counting	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Total Alpha Radium	Gas Flow Proportional Counting	1000 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Total Uranium	KPA, ICPMS, Alpha Spec	50 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Tritium	Liquid Scintillation	200 mL Glass	None	180 Days
Aqueous	Isotopic Actinides (U, Th, Pu, Am, Cm)	Alpha Spectroscopy	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Radon	Liquid Scintillation	3 - 40 mL vials	None (zero headspace)	96 Hours
Aqueous	Polonium-210	Alpha Spectroscopy	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Lead-210	Gas Flow Proportional Counting	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Neptunium-237	Alpha Spectroscopy	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Carbon-14	Liquid Scintillation	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Iron-55	Liquid Scintillation	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Nickel-63	Liquid Scintillation	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Technetium-99	Liquid Scintillation	500 mL Plastic	pH<2 HNO_3	180 Days
Aqueous	Plutonium-241	Liquid Scintillation	500 mL Plastic	pH<2 HNO_3	180 Days
Solid	Gamma Emitting Radionuclides	Gamma Spectroscopy	16 oz Glass Jar	None	180 Days
Solid	Gross Alpha & Gross Beta	Gas Flow Proportional Counting	8 oz Glass Jar	None	180 Days
Solid	NORM	Gamma Spectroscopy	16 oz Glass Jar	None	180 Days
Solid	Radium-226	Gamma Spectroscopy	16 oz Glass Jar	None	180 Days
Solid	Radium-228	Gamma Spectroscopy	16 oz Glass Jar	None	180 Days
Solid	Strontium-90	Gas Flow Proportional Counting	8 oz Glass Jar	None	180 Days
Solid	Total Uranium	KPA, ICPMS, Alpha Spec	8 oz Glass Jar	None	180 Days
Solid	Tritium	Liquid Scintillation	8 oz Glass Jar	None	180 Days
Solid	Isotopic Actinides (U, Th, Pu, Am, Cm)	Alpha Spectroscopy	8 oz Glass Jar	None	180 Days
Solid	Polonium-210	Alpha Spectroscopy	8 oz Glass Jar	None	180 Days
Solid	Lead-210	Gas Flow Proportional Counting	8 oz Glass Jar	None	180 Days
Solid	Neptunium-237	Alpha Spectroscopy	8 oz Glass Jar	None	180 Days
Solid	Carbon-14	Liquid Scintillation	8 oz Glass Jar	None	180 Days
Solid	Iron-55	Liquid Scintillation	8 oz Glass Jar	None	180 Days
Solid	Nickel-63	Liquid Scintillation	8 oz Glass Jar	None	180 Days
Solid	Technetium-99	Liquid Scintillation	8 oz Glass Jar	None	180 Days
Solid	Plutonium-241	Liquid Scintillation	8 oz Glass Jar	None	180 Days

MONITORED NATURAL ATTENUATION PARAMETERS (MNA)

Matrix	Parameter	Method	Container	Preservative	Max Hold Time
Aqueous	Carbon Dioxide	RSK 175	3-40 mL vials or 2-20 mL vials	Unpreserved, ≤6°C (zero headspace)	7 Days (see note 9)
Aqueous	Methane, Ethane, Ethene, Acetylene, Butane, Propane, Propene	RSK 175	2-40 mL vials or 2-20 mL vials	HCL, ≤6°C (zero headspace)	14 Days (see note 9)
Aqueous	Methane, ethene, ethane	RSK 175	3-40 mL vials	Unpreserved, ≤6°C (zero headspace)	7 Days
Aqueous	Methane, ethene, ethane	RSK 175	3-40 mL vials	HCL, TSP, ≤6°C (zero headspace)	14 Days
Aqueous	Volatile Fatty Acids (Std: acetic, butyric, heptanoic, hexanoic, isobutyric, isocaproic, isovaleric, propionic, and valeric)	EPA 8015 Modified	3-40 mL vials	≤6°C (zero headspace)	14 Days

9) Method may require a dif ferent sample container (volume) depending on location; verify with local Pace® Laboratory.

FORENSIC HYDROCARBON ANALYTICAL SUPPORT

Matrix	Parameter	Technique	Container	Preservative	Max Hold Time
Aqueous	Petroleum Hydrocarbons Identification (PHI-TPH)	Method 8015 GC-FID Pace® SOP	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Aqueous	Saturated Hydrocarbons (SHC) n-Alkanes, Isoprenoids & TPH (C9 -C44)	Method 8015 GC-FID Pace® SOP	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Aqueous	PIANO Volatiles	purge&trap GC/MS, Pace® SOP	3-40 mL vials	pH<2 HCl, ≤6°C (zero headspace)	14 Days
Aqueous	Parent and Alklyated PAH	GC/MS Pace® SOP	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Aqueous	Triterpanes & Steranes (Geochemical Biomarkers)	GC/MS Pace® SOP	2-1000 mL Amber Glass	≤6°C	7/40 Days*
Solid	Petroleum Hydrocarbons Identification (PHI-TPH)	Method 8015 GC-FID Pace® SOP	1-120 mL Amber Glass	≤6°C	14/40 Days*
Solid	Saturated Hydrocarbons (SHC) n-Alkanes, Isoprenoids & TPH (C9 -C44)	Method 8015 GC-FID Pace® SOP	1-120 mL Amber Glass	≤6°C	14/40 Days*
Solid	PIANO Volatiles	purge&trap GC/MS, Pace® SOP	3-40 mL Vials (1-40 mL vial MeOH, 2-40 mL vials DI H_2O)	≤6°C	Freeze DI H2O vials within 48 hrs/14 Days
Solid	Parent and Alklyated PAH	GC/MS Pace® SOP	1-120 mL Amber Glass	≤6°C	14/40 Days*
Solid	Triterpanes & Steranes (Geochemical Biomarkers)	GC/MS Pace® SOP	1-120 mL Amber Glass	≤6°C	14/40 Days*
Product	Petroleum Hydrocarbons Identification (PHI-TPH)	Method 8015 GC-FID Pace® SOP	1-20 mL Solid Cap vial	None	None/ 40 Days*
Product	Saturated Hydrocarbons (SHC) n-Alkanes, Isoprenoids & TPH (C9 -C44)	Method 8015 GC-FID Pace® SOP	1-20 mL Solid Cap vial	None	None/ 40 Days*
Product	Whole Oil	GC-FID, Pace® SOP	1-20 mL Solid Cap vial	None	N / A
Product	PIANO Volatiles	purge&trap GC/MS, Pace® SOP	1-20 mL Solid Cap vial	None	N / A
Product	Parent and Alklyated PAH	GC/MS Pace® SOP	1-20 mL Solid Cap vial	None	None/ 40 Days*
Product	Triterpanes & Steranes (Geochemical Biomarkers)	GC/MS Pace® SOP	1-20 mL Solid Cap vial	None	None/ 40 Days*

*Max Hold Time for Sample Prep/Max Hold Time for Analysis after Sample Prep

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