

Project Plan
Emerging Contaminants Monitoring Project
NYCDEP BWS DWQ WQSR

1. January 16, 2019

2. Project: The Emerging Contaminant Monitoring Project (ECMP) will be conducted within the NYC Watershed System. The parameters to be studied include those listed in the 3rd Unregulated Contaminant Monitoring Rule (UCMR3), the 4th Unregulated Contaminant Monitoring Rule (UCMR4), and various Pharmaceutical and Personal Care Protection Products (PPCP).

3. Project Managers: David Quentin WQSR, and Meredith Mathewson, WWQO
 - 3.1. Responsibilities for Specific Tasks
 - 3.1.1. Scheduling Quarterly Sampling: Hawthorne Field
 - 3.1.2. Sampling Bottle Requests from Eurofins: Hawthorne Laboratory
 - 3.1.3. Entering raw data in LIMS: Hawthorne Laboratory
 - 3.1.4. Reviewing data pre/post entry into LIMS
 - 3.1.4.1. Review meta-data/sample-collection data: Hawthorne Field
 - 3.1.4.2. Review contract lab data and LIMS data entered: Hawthorne Laboratory
 - 3.1.5. If resampling is needed: Hawthorne Field and WQSR
 - 3.1.6. Final Report Writing: WQSR
 - 3.1.7. Regulatory Issues: WQSR and WQ Management

4. Requested by: Steven Schindler, Director, WQD

5. Objective:

To supplement previous studies investigating the presence of emerging contaminant target compounds at the selected source water sites.

6. Background: PPCPs and related compounds in the NYC Water Supply have been investigated in the past, for instance by the United States Geological Survey (USGS) (Kolpin et al. 2002; Phillips et al., 2010) the New York State Department of Health (NYSDOH) (Wilson et al., 2006) and the New York City Department of Environmental Protection (NYCDEP 2010; NYCDEP 2014) The PPCPs that have been detected nationally comprise a large range of emerging contaminants, including prescription and over-the-counter drugs, antibiotics, tranquilizers, antidepressants,

and other organic chemicals. The personal care protection products include: fragrances, disinfectants, sunscreen, preservatives, and surfactants (Kolpin et al., 2002).

UCMR3 compounds have been investigated in the past and some of the compounds are currently of national interest. Examples of UCMR3 compounds are 1,4 Dioxane, Hexavalent Chromium and Perfluorinated Compounds.

The UCMR4 portion of this investigation is to monitor for the contaminants listed by the United States Environmental Protection Agency (USEPA) at the following link:

<https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule>.

This watershed investigation will complement the required work slated to be done in the DEP drinking water distribution system under the UCMR4.

7.0 Duration of Study

7.1 Start Date: January 2019

7.2 End Date: December 2019

8.0 Water Quality Monitoring

8.1 Keypoints

8.1.1 Croton Lake Gatehouse (CROGH: representing Croton System)

8.1.2 CATALUM (representing Ashokan water)

8.1.3 DEL17 (representing Delaware water)

8.1.4 DEL18DT (representing Kensico water)

8.2 Kensico Reservoir Watershed (stream sites)

8.2.1 MB-1

8.2.2 N5-1

8.2.3 N12

8.2.4 BG9

8.2.5 WHIP

8.2.6 E9

8.2.7 E10

8.2.8 E11

8.3 Quality Assurance (QA)/Quality Control(QC) Sites

8.3.1 Field Reagent Blanks (FRB) taken at a keypoint site shall be labelled **FRB-KQ** (quarter of sampling: 1, 2, 3 or 4), and those taken at a stream site shall be labelled **FRB-SQ** (designated quarter of sampling 1, 2, 3 or 4).

8.3.2 Duplicate Samples (DUP) taken at a keypoint site shall be labelled **DUP-KQ** (designated quarter of sampling 1,2,3 or 4) and those taken at a stream site shall be labelled **DUP-SQ** (designated quarter of sampling 1, 2, 3 or 4).

8.3.3 Table 1. Designated QA/QC sampling sites by quarter.

Sampling Quarter	Appendix	FRB keypoint	FRB stream	DUP keypoint	DUP stream
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1	11	Not sampled	E11	CATALUM	E11
2	12	CATALUM	N12	CROGH	E10
3	13	DEL17	N5-1	DEL18DT	E9
4	14	CROGH	WHIP	DEL17	MB-1

Table 1. Designated QA/QC sampling sites by quarter.

8.4 Map of Monitoring Sites (Figure 1)

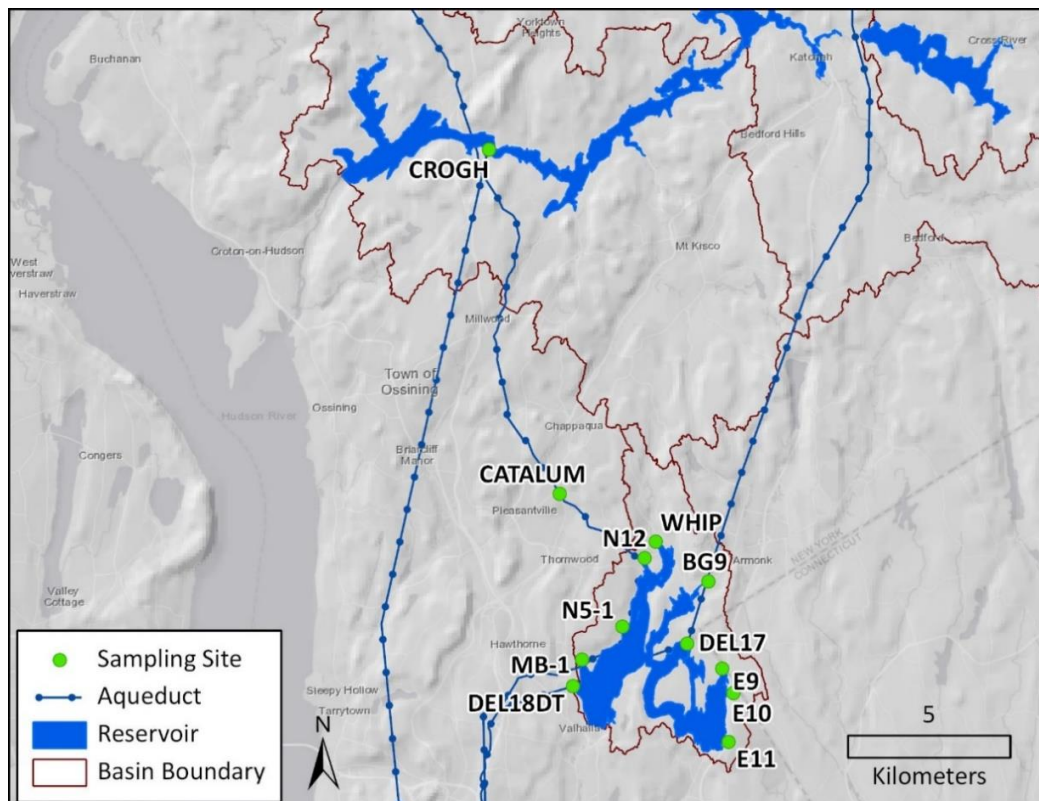


Figure 1. Proposed sites for the Emerging Contaminant Monitoring Project.

8.4 Sampling Frequency

8.4.1. Sampling will be conducted quarterly at 3 month intervals.

(Proposed months are January, April, July and October, but can be adjusted).

8.5 Sampling Protocol

8.5.1. Water samples will be collected and shipped using techniques per Appendices 1-10. These same protocols are stated within the Eurofins link below.

<https://www.eurofinsus.com/environment-testing/laboratories/eurofins-eaton-analytical/sampling-guidelines-and-forms/>

8.5.2. Sampling frequencies (see Appendices 11-14)

Two sample duplicates will be collected each quarter for each analyte, with the exception of algal toxins, which will be one duplicate per quarter.

The Travel (Trip) Blank for EPA 537 is not actually a sample, but rather a component of the Field Reagent Blank. The Field Reagent Blank is prepared in the field, as per the method, by dispensing the supplied Travel Blank into the Field Reagent Blank container.

8.5.3. Special Conditions for Stream Sampling

1) For sampling in streams, it may be necessary to use an interim bottle approved by the contract lab to prevent the discharge of preservatives into the stream. Interim bottles should not be used for multiple sites unless cleaning of the bottle, as outlined by the contract lab, has taken place. The contract lab recommended glass bottles as the interim bottle (email communication between T. French of Eurofins and J. Sampson, DEP-Hawthorne Laboratory, 01/09/2019).

2) If sampling takes place during a precipitation event, DEP will take precautions so that sample collection/pour off does not take place directly in the precipitation (e.g. using a tarp or umbrella as a cover).

3) DEP cannot sample on a Friday and should avoid sampling on a Thursday due to shipping and receiving requirements per Eurofins (the contractor).

4) DEP will postpone sampling during a precipitation event involving ice or snow due to hazardous driving conditions, and will reschedule sampling for an appropriate day.

5) If a significant storm event is predicted on a projected day of sampling, DEP, at their discretion, may adjust the sampling date as high stream flow may cause issues with filling bottles at sites where interim bottles are not available. This issue should be resolved by the 2nd quarter of sampling, as DEP projects interim sampling bottles will be at every site.

8.5.4. Proposed analytes to be investigated.

All Method Reporting Limits are in micrograms/liter (μgL^{-1}) unless otherwise stated.

8.5.4.1. UCMR3 analytes

USEPA Method 200.7/200.8 (Appendix 1: Metals, Inorganics, Cyanide, and Radiochemistry Water Sampling Instructions).

Strontium	0.3
Vanadium	0.2

USEPA Method 218.6 (Appendix 2: Hexavalent Chromium Water Sampling)

Hexavalent Chromium	0.02
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USEPA Method 300.0 (Appendix 3: Chlorate Water Sampling, per written instructions from Thomas French (Eurofins) on 01/08/19.)

Chlorate	10
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USEPA Method 522 (Appendix 4: per written instructions from Thomas French (Eurofins) on 01/08/19)

1,4- Dioxane	0.07
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USEPA Method 537 (Perfluorinated Compounds) (Appendix 5: PFAs Water Sampling Instructions for EPA Method 537: includes sampling for trip and field blank)

N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.002
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSSA)	0.002
Perfluorobutanesulfonic acid (PFBS)	0.002
Perfluorodecanoic acid (PFDA)	0.002
Perfluorododecanoic acid (PFDoA)	0.002
Perfluoroheptanoic acid (PFHpA)	0.002
Perfluorohexanesulfonic acid (PFHxS)	0.002
Perfluorohexanoic acid (PRHxA)	0.002
Perfluorononanoic acid (PFNA)	0.002
Perfluorooctanic acid (PFOA)	0.002
Perfluorooctanesulfonic acid (PFOS)	0.002
Perfluorotetradecanoic acid ((PFTA)	0.002
Perfluorotridecanoic acid (PFTTrDA)	0.002
Perfluoroundecanoic acid (PFUnA)	0.002

8.5.4.2 UCMR4 analytes (Appendix 6: UCMR4 Water Sampling Instructions, unless otherwise specified)

USEPA Method 200.8 (Metals) (Refer to Appendix 1)

Germanium	0.3
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Manganese	0.4
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USEPA Method 525.3 (Pesticides)

α -HCH	0.01
Chlorpyrifos	0.03
Dimethipin	0.2
Ethoprop	0.03
Oxyfluorfen	0.05
Profenofos	0.3
Tebuconazole	0.2
Total Permethrin (trans and cis)	0.04
Tribufos	0.07

USEPA Method 530 (Semivolatile Compounds)

o - Toluidine	0.007
Quinolone	0.02
Butylated hydroxanisole (BHA)	0.03

USEPA Method 541 (Alcohols)

1- butanol	2
2- methoxyethanol	0.4
2- propene -1-ol (allyl alcohol)	0.5

Algal –Low 9: Cyanotoxin Scan (only measured at four keypoints)

(Refer to Appendix 7: (LC-MS-MS Method – Water Sampling Instructions))

Microcystin LA	0.1
Microcystin-LF	0.1
Microcystin-LR	0.1
Microcystin-LY	0.1
Microcystin-RR	0.1
Microcystin-YR	0.1
Anatoxin -a	0.02
Cylindrospermopsin	0.05
Nodularin-R	0.1

8.5.4.3. EEA 9609 (Personal Care Protection Products: PPCPs) (Appendix 8: PPCP Water Sampling Instructions)

Method Reporting Limit (ngL⁻¹)

2,4-D	5
4-nonylphenol (semi-quantitative)	100
4-tert-octylphenol	50
Acesulfame -K	20
Bendroflumethiazide	5
BPA	10
Butalbital	5
Butylparben	5
Chloramphenicol	10
Clofibric Acid	5
Diclofenac	5
Estradiol	5
Estriol	10
Estrone	5
Ethinyl-Estradiol - 17 - alpha	5
Ethylparaben	20
Gemfibrozil	5
Ibuprofen	10
Iohexal	10
Iopromide	5
Isobutylparaben	5
Methylparaben	20
Naproxen	10
Propylparaben	5
Salicylic Acid	100
Sucralose	100
Triclocarban	5
Triclosan	10
Warfarin	5
1,7-Dimethylxanthine	10
Acetaminophen	5
Albuterol	5
Amoxicillin (semi - quantitative)	20
Androstenedione	5
Atenolol	5
Atrazine	5
Bezafibrate	5

Bromacil	5
Caffeine	5
Carbadox	5
Carbamazepine	5
Carisoprodol	5
Chloridazon	5
Chlorotoluron	5
Cimetidine	5
Cotinine	10
Cyanazine	5
DACT	5
DEA	5
DEET	10
Dehydronifedipine	5
DIA	5
Diazepam	5
Dilantin	20
Diltiazem	5
Diuron	5
Erythromycin	10
Flumequine	10
Fluoxetine	10
Isoproturon	100
Ketoprofen	5
Ketorolac	5
Lidocaine	5
Lincomycin	10
Linuron	5
Lopressor	20
Meclofenamic Acid	5
Meprobamate	5
Metazachlor	5
Metformin	5
Metolachlor	5
Nifedipine	20
Norethisterone	5
Sulfometuron Methyl	5
Oxolinic acid	10
Pentoxifylline	5
Phenazone	5
Primidone	5

Progesterone	5
Propazine	5
Quinoline	5
Simazine	5
Sulfachloropyridazine	5
Sulfadiazine	5
Sulfadimethoxine	5
Sulfamerazine	5
Sulfamethazine	5
Sulfamethoxazole	5
Sulfamethizole	5
Sulfathiazole	5
TCEP	10
TCPP	100
TDCPP	100
Testosterone	5
Theobromine	10
Theophylline	20
Thiabendazole	5
Trimethoprim	5

8.5.4.4. Radionuclide Suite (Appendix 9: Specific Radiochemistry Analysis Water Sampling, except for Uranium)

GA Method (Radium 226)

Method Reporting Limit (pCL⁻¹)

Radium 226	1
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GA Method (Radium 228)

Method Reporting Limit (pCL⁻¹)

Radium 228	1
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GA Method

Method Reporting Limit (pCL⁻¹)

Alpha, Gross	3
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GA Method

Method Reporting Limit (pCL⁻¹)

Beta, Gross	3
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USEPA Method 200.8 (Refer to Appendix 1)

Uranium	1
Uranium	0.7 (as pCL ⁻¹)

8.5.4.5. Appendix 10: Monrovia, CA Chain-of-Custody Document.

8.6. Reporting and follow up analysis

8.6.1 Data will be reviewed after each sampling event by Water Quality Science and Research staff and reported to WQ Management. At the end of the one year sampling period the data will be summarized in a project final report.

8.6.2 Results will be compared to State and Federal Regulatory Standards and Drinking Water Health Guidelines.

Title	Name	Signature	Date
Project Requestor	Steven Schindler		
Project Reviewer	Lorraine Janus PhD		
Project Reviewer	Andy Bader		
Project Reviewer	Kerri Alderisio		
Project Manager	David Quentin		
Project Manager	Meredith Mathewson		

8.7 References

Kolpin DW, E.T. Furlong, M.T. Meyer, E.M. Thurman, S.D. Zaugg, and L.B. Barber 2002. Pharmaceuticals, hormones, and other organic wastewater contaminants in U.S. streams, 1999-2000: a national reconnaissance. Environmental Science and Technology 36(6): 1202-11.

NYCDEP. 2010. 2010 Occurrence of Pharmaceuticals and Personal Care Products ((PPCPs) in Source Water of the New York City Water Supply. August 19, 2011. 23 p.

NYCDEP. 2014. New York City Department of Environmental Protection. The Third Unregulated Contaminant Monitoring Rule Watershed Survey. (DRAFT). 22 p.

Phillips, P.J. S.G. Smith, D.W. Kolpin, S.D. Zaugg, H. T. Buxton, D. T. Furlong, K. Esposito and B. Stinton. 2010. —Pharmaceutical Formulation Facilities as Sources of Opioids and Other


Pharmaceuticals to Wastewater Treatment Plant Effluents. *Environ. Sci. Technol.* 44 (13): 4910–4916.

Wilson, L. R., P. O’Keefe, P.M. Palmer and R. Sheridan. *A Survey of the New York City Watershed for the presence of pharmaceuticals*. Bureau of Water Supply Protection, Center for Environmental Health, New York State Department of Health, Troy, NY. Biggs Laboratory, Wadsworth Center, New York State, Department of Health, Albany, NY, June 13, 2006

USEPA. 1996. Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels. USEPA, Office of Water, Washington, DC.

APPENDICES

Appendix 1. Sampling Instructions for UCMR3 Metals Strontium and Vanadium.

	Metals, Inorganics, Cyanide, & Radiochemistry Sampling Instructions	Revision Date: 05/01/2013 Page 1 of 2
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1. **a) FREEZE GELPAKS UPON RECEIPT OF SAMPLE KIT AND ADD FROZEN GELPAKS TO THE COOLER ON THE DAY OF SAMPLING.**

b) WHEN SAMPLING, BRING OTHER AVAILABLE BAGGED WET ICE IN SEALED BAGS OR FROZEN GELPAKS TO CHILL SAMPLES DURING SAMPLE COLLECTION.

2. The sampler will receive a sample kit from our lab.
3. Put on nitrile gloves. If sampling from faucet, remove the aerator and screen.
4. Open the tap and let the water of the sample source run at fast flow for approximately 5 minutes.
5. The sample kit will include bottles as described below. Volumes and preservatives required per test are as follows:

<u>General Mineral:</u>		<u>HOLD TIMES</u>
Metals	(1) 500 or 250 mL plastic, unpreserved or with nitric acid	6 months
Inorganics	(2) 500 mL plastic, unpreserved, (1) 125 mL unpreserved	48 hrs – 28 days
<u>General Physical:</u>		
Color, Odor, Turbidity	(1) 1L amber	24-48 hrs (Odor is 24hr)
<u>Other:</u>		
Cyanide	(1) 125 mL with NaOH and ascorbic acid	14 days
Radiochemistry	(1) 1 L plastic, unpreserved or with nitric acid, (1) 125 mL (Gross Alpha and Beta) plastic, unpreserved	6 months

6. Use indelible ink (pen included in kit) to clearly identify the sample bottles with the information listed below.


- Client Name	- Analysis required, if not already on label
- Sample ID	- Date and Time of collection
- Source of sample, if not already on label	- Preservative used, if not already on label

7. Slow water flow to thickness of a pencil (to minimize splashing) and fill bottle.
8. Fill sample bottle up to bottom of neck. Make sure the mouth of the bottle does not come in contact with anything other than the sample water. **DO NOT RINSE OUT PRESERVATIVE** if present in the bottle.
9. Cap and invert the bottles at least 5 times to mix the sample with the preservative.
10. Store at $\leq 6^{\circ}\text{C}$ but above the freezing point of water until transported to the lab.

SAMPLE SHIPPING AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until $\leq 6^{\circ}\text{C}$ by exchanging the ice used during sampling with available sealed bags of fresh frozen ice or frozen gelpaks.
2. **Pack chilled samples** in a cooler with **FROZEN** gelpaks. Place supplied bubble wrap between gelpack and sample containers. Do not have the gelpacks in contact with the sample containers or they will freeze.

Appendix 1 continued...

	Metals, Inorganics, Cyanide, & Radiochemistry Sampling Instructions	Revision Date: 05/01/2013 Page 2 of 2
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3. Complete the Chain of Custody during sample collection. Place Kit Order and completed Chain of Custody in a ziplock bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.

- Collector's name
- Client Name
- Sample site
- Date and time of collection
- Comments about the sample, if applicable
- Sample type

4. Ship via overnight service such as FEDEX, UPS, or DHL, etc. Maintain an environment at $\leq 6^{\circ}\text{C}$ but above the freezing point of water during transit. It is recommended that samples arrive within 48 hours of sampling, with no more than 40 hours for transit (if not testing for Odor). Otherwise, samples must arrive within 20 hours of sampling.

5. If samples are received on the same day as collection, temperature may be $>10^{\circ}\text{C}$ with evidence of cooling.


6. Maximum **HOLDING TIME FOR SAMPLES** for Odor is 24 hrs. from time of collection. For other tests, see above table.

7. Alternatively, cool the samples down by placing them overnight in a cooler with frozen refrigerant packs or water ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the cold samples until repacked in the cooler for shipment to the lab.

ADDITIONAL NOTES

Try to collect only on a Monday, Tuesday or Wednesday and ship no later than Thursday of each week, and try to **NOT** collect samples on Friday, Saturday, or Sunday unless special arrangements have been made for the receipt of samples at the laboratory within 48-hours of collection.

Appendix 2. Hexavalent Chromium Water Sampling

	Hexavalent Chromium (Low Level/EPA 218.6) Sampling Instructions	Sampling Instruction No. 10 Revision Date: 07/09/14 Page 1 of 2
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1. The sampler will receive a sample kit from our lab.
2. **WHEN SAMPLING, BRING ICE IN SEALED BAGS TO CHILL SAMPLES DURING SAMPLE COLLECTION.**
3. Put on nitrile gloves. If sampling from faucet, remove the aerator and screen.
4. Open the tap and let the water of the sample source run at fast flow for approximately 5 minutes.
5. The sample kit will include some or all bottle(s) as described below. Volumes and preservatives required per test are as follows:

<u>Tests</u>	<u>Containers</u>	<u>HOLD TIMES</u>
Hexavalent Chromium (EPA 218.6) *) ammonium sulfate and ammonium hydroxide buffer solution	1-125 mL plastic, with buffer*	5 Days

6. Use indelible ink (i.e. Sharpie pens) to clearly identify the sample bottles with the information listed below (if not already on the label).


- Client Name	- Analysis required	- Preservative used
- Sample ID	- Date and Time of collection	
7. Slow water flow to thickness of a pencil (to minimize splashing) and fill bottle.
8. Fill sample bottle up to bottom of neck. Make sure the mouth of the bottle does not come in contact with anything other than the sample water. **DO NOT RINSE OUT PRESERVATIVE** if present in the bottle.
9. Cap and invert the bottles at least 5 times to mix the sample with the preservative.
10. Store at $\leq 6^{\circ}\text{C}$ but above freezing until transported to the lab.

SAMPLE SHIPPING AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until $\leq 6^{\circ}\text{C}$ by exchanging the wet ice used during sampling with **FRESH** wet ice.
2. **Pack chilled samples** in a cooler and add enough **FRESH** wet ice to take up 30-50% of the cooler (e.g. most of the remaining space) as recommended in our "*Wet Ice Packing Instructions*."
3. Complete the Chain of Custody during sample collection. Place Kit Order and completed Chain of Custody in a Ziploc style bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.

- Collector's name	- Sample site	- Comments about the sample (if applicable)
- Client Name	- Date and time of collection	- Sample type
4. **Ship via overnight service such as FEDEX, UPS, or DHL, etc.** Maintain an environment at $\leq 6^{\circ}\text{C}$ but above freezing during transit. It is recommended that samples arrive within 48 hours of sampling. Otherwise, samples must arrive within 20 hours of sampling.
5. If samples are received on the same day as collection, temperature may be $>10^{\circ}\text{C}$ with evidence of cooling.

Appendix 2 continued...

 Eton Analytical	Hexavalent Chromium (Low Level/EPA 218.6) Sampling Instructions	Sampling Instruction No. 10 Revision Date: 07/09/14 Page 2 of 2
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6. Maximum **HOLDING TIME FOR SAMPLES** is 14 days from time of collection.
7. Alternatively, cool the samples down by placing them **overnight** in a cooler with wet ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the cold samples until repacked in the cooler for shipment to the lab.

ADDITIONAL NOTES

- Try to collect only on a Monday, Tuesday or Wednesday and ship no later than Thursday of each week, and try to **NOT** collect samples on Friday, Saturday, or Sunday unless special arrangements have been made for the receipt of samples at the laboratory within 48-hours of collection.
- If shipping to the laboratory with **frozen gel packs** rather than wet ice, please be sure that the gel packs have **been frozen for at least 48 hours** prior to the shipment time.


Appendix 3. Chlorate Water Sampling per written email from Thomas French of Eurofins
(01/08/2019)

The container (60 ml polyethylene) is pre-preserved. Just fill the sample container to the neck of the bottle, and do not rinse out the preservative.

Appendix 4. 1,4 - Dioxane Water Sampling per written email from Thomas French (Eurofins) (01/09/2019).

EPA 522 is for 1,4 Dioxane. There are no specific sampling instructions. Sample containers are pre-preserved. Just fill the sample containers to the neck of the bottle, and do not rinse out the preservative.

Appendix 5. Perfluorinated Compounds Sampling Instructions: includes sampling for trip and field blank.

	537 (Perfluorinated Compounds) Sampling Instructions	Sampling Instruction No. 48 Revision Date: 07/25/18 Page 1 of 2
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1. WHEN SAMPLING, BRING ICE IN SEALED BAGS TO CHILL SAMPLES DURING SAMPLE COLLECTION.

2. The sampler will receive the following sample kit from our lab:

Bottle Label	# of Bottles	Size	Bottle	Preservative
@537	3	275mL	Polypropylene (PP) bottles with PP screw-caps (no round label on bottle)	1.4g of Trizma
@537 TB	1	275mL	PP bottles with PP screw-caps (white round label on bottle)	1.4g of Trizma
@537 FB	1	275mL	PP bottles with PP screw-caps (blue round label on bottle)	None

* The sampler will receive the Trip Blank (TB) filled with water and preservative. It is colored in the picture to indicate the bottle is filled (not empty) for picture purposes only. **The sampler will also receive an empty bottle labeled @537 FB (Field Blank) and 3 sets of preserved bottles.



3. Put on nitrile gloves. While at the site, before collecting samples, open the @537 TB labeled bottle containing the preserved reagent water.



4. Pour the preserved reagent water into the empty bottle labeled (@537 FB)

Cap both the filled @537 FB and the now empty TB bottle. Ship the filled FB and the now empty @537 TB bottle back to the lab along with the samples.



5. If sampling from faucet, remove the aerator and screen.



6. Open the tap and let the water of the sample source run at fast flow for approximately 5 minutes.



7. Use indelible ink (pen included in kit) to clearly identify the sample bottles with the information listed below.

- Sample ID
- Source of sample, if not already on label
- Analysis required, if not already on label
- Date and Time of collection
- Preservative used, if not already on label



8. Slow water flow to thickness of a pencil (to minimize splashing) and fill bottle.



Appendix 5 continued...

9. Fill sample bottle up to **bottom of neck**, taking care not to flush out preservatives and making sure the mouth of the bottle does not come in contact with anything other than sample water.



10. Cap and invert the bottles at least 5 times to mix the sample with the preservative.



11. Collect sample for the other 2 sample bottles by repeating steps 8 to 10.

SHIPPING SAMPLES AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until at or below 10°C by exchanging the ice used during sampling with sealed bags of fresh ice.
2. **Pack chilled samples** in a cooler and add enough **FRESH** wet ice to take up 30-50% of the cooler (e.g. most of the remaining space) as recommended in our **"Wet Ice Packing Instructions."**
3. Complete the Chain of Custody during sample collection. Place completed Kit Order and completed Chain of Custody in a ziplock bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.
 - Collector's name
 - Date and time of collection
 - Unique field sample ID
 - Comments about the sample, if applicable
 - Sample type (Sample, TB, or FB)
4. **Ship via overnight service such as FEDEX, UPS, or DHL, etc.** Sample must not exceed 10°C during transit.
5. Samples **MUST** arrive at lab within 48 hours of sampling at or less than 10°C, greater than 0°C (not frozen).
6. **If samples are received more than 48 hours after sampling they must be at or less than 6°C, greater than 0°C (not frozen).**
7. If samples are received on the same day as collection, temperature may be greater than 10°C with evidence of cooling such as ice.
8. Maximum **HOLDING TIME FOR SAMPLES IS 14 DAYS** from time of collection. Sample extracts can be held for a maximum of 28 days.
9. Alternatively, cool the samples down by placing them **overnight** in a cooler with ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the samples cold until repacked in the cooler for shipment to the lab.

ADDITIONAL NOTES

1. Do not composite (i.e., combine, mix or blend) samples.
2. Avoid handling potential contamination such as food packaging and certain foods and beverages before sample collection. Wash hands before sampling and wear powderless nitrile gloves (included in kit) while filling and sealing the sample bottles.
3. Collect samples early enough in the day to allow adequate time to cool and to send those samples for overnight delivery to the laboratory, if not refrigerated and stored overnight before shipping.
4. Try to collect only on a Monday, Tuesday or Wednesday and ship no later than Thursday of each week, and try to **NOT** collect samples on Friday, Saturday, or Sunday unless special arrangements have been made for the receipt of samples at the laboratory within 48-hours of collection.
5. If shipping to the laboratory with **frozen gel packs** rather than wet ice, please be sure that the gel packs have **been frozen for at least 48 hours** prior to the shipment time.
6. If in doubt, please review our YouTube sampling video at <http://www.youtube.com/user/EurofinsEaton>.

SAMPLING AND SHIPPING INSTRUCTIONS

UCMR 4 SAMPLING INSTRUCTIONS

Please read all the instructions before sampling.

Sampling Steps

It is recommended to wear powder-less nitrile gloves during sampling and sample handling.

1. If your sampling point has a faucet with an aerator, it must be removed prior to collection of the samples.
2. Flush the cold water sampling line approximately 3 to 5 minutes prior to sampling.
3. Do not touch the inside of the cap or around the edge of the bottle.
4. Slow the water stream before collection.
5. Fill the sample bottle to the **neck**, taking care not to flush out preservatives and making sure the mouth of the bottle does not come in contact with anything other than the sample water.
Do not overfill the container.
6. Indicate the sampling date, time, and site on both the bottle labels and the enclosed Chain of Custody (COC). Information on the COC and the labels must match and be complete.

Shipping Samples

1. Place a small layer of wet ice inside the liner bag in the cooler. Then place the filled sample bottles in the original bubble bag or Ziploc® style bag into the cooler. Put wet ice around the samples and on top of the samples to fill the cooler almost to the top. Gather the liner bag, twist tight and tuck it to the side. Place a layer of bubble wrap across the top to keep samples and ice in place. Put the COC in a sealed bag on top of the bubble wrap, close the cooler and seal with tape. Return to the laboratory immediately after collection.
2. Sample bottles must be hand delivered or sent by an **overnight** carrier.
3. Laboratory **must be** notified prior to shipment of samples for Saturday delivery.

top of the samples to fill the cooler almost to the top. Gather the liner bag, twist tight and tuck it to the side. Place a layer of bubble wrap across the top to keep samples and ice in place. Put the COC in a sealed bag on top of the bubble wrap, close the cooler and seal with tape. Return to the laboratory immediately after collection.

Note: If samples are not received cold upon receipt, you may be required to recollect and incur additional shipping costs. Samples that are received at the lab within 48 hours of collection must be received at or less than 10°C, but not frozen. During the summer, the ambient water temperature can be significantly greater than 10°C. In such cases, the EPA suggests collecting samples in the morning and refrigerating them for several hours before packing them in the cooler with ice.

REMINDER: If samples are received more than 48 hours after sampling, they must be at or less than 6°C.

PWS / Labs: Keep records of sample storage temperature before shipment and record on COC.









UCMR 4 Notes

1. Verify on COC Sampling Point Type (SR, EP or DS) SR= Source Water; EP=Entry Point to the Distribution System; DS= Distribution System sample
2. Identify on COC the Sample Event Code: SEC1, SEC2, SEC3, SEC4, SEC5, SEC6, SEC7, SEC8 or SEA1, SEA2, SEA3, SEA4
3. If resampling, please reference the original sample event on the COC.
4. Try to collect only on Monday, Tuesday or Wednesday and ship no later than Thursday of each week. Please try not to collect on a Friday, Saturday or Sunday unless special arrangements have been made for the receipt of the samples at the laboratory within 48 hours of collection.

SAMPLING AND SHIPPING INSTRUCTIONS

Sampling Containers

Fill all empty sampling containers included in this kit.

EP (Entry Point to Distribution System)	<input type="checkbox"/> 200.8 Metals 1 x 250mL - No Preservative  <input type="checkbox"/> 525.3 Pesticides 3 x 1L - AA + EDTA + K-dihydrogen citrate  <input type="checkbox"/> 530 SOC 3 x 1L - Trizma + AA + EDTA + Diazolidinyl urea <input type="checkbox"/> 541 Alcohols 3 x 125 mL - Na-Sulfite + Na-bisulfate 	<input type="checkbox"/> 544 Microcystins ⁽¹⁾ 3 x 550mL - Trizma + 2-Chloroacetamide + AA + EDTA  <input type="checkbox"/> 545 Cyanotoxins ⁽¹⁾ 1 x 125 mL - AA + Na-bisulfate  <input type="checkbox"/> 546 Total Microcystins ⁽¹⁾ 1 x 125 mL - Sodium thiosulfate
DS (Distribution System)	<input type="checkbox"/> 552.3 HAA 1 x 250mL - Ammonium chloride 	
SR (Source Water)	<input type="checkbox"/> 5310C TOC 1 x 125mL - H ₂ SO ₄ 	<input type="checkbox"/> 300.0 Bromide 1 x 125 mL - No Preservative 

Example of Sample Kits




Full Kit



(1) 544, 545, & 546 Kit

Call 1.626.386.1100 or 1.800.586.5227 or visit us at www.eurofinsus.com/eaton
Eurofins Eaton Analytical, Inc. 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016

Appendix 7. Algal Toxins Sampling Instructions (in house LC-MS-MS Method)

	Algal Toxins Sampling Instructions	Sampling Instruction No. 42 Revision Date: 06/27/16 Page 1 of 2
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- IF USING GEL PACKS, FREEZE UPON RECEIPT IF INCLUDED IN THE COOLER BEFORE SAMPLING.**
- WHEN SAMPLING, ADD FROZEN GEL PACKS OR BAGGED WET ICE TO THE COOLER ON THE DAY OF SAMPLING AND BRING OTHER AVAILABLE BAGGED WET ICE IN SEALED BAGS OR FROZEN GEL PACKS TO CHILL SAMPLES DURING SAMPLE COLLECTION.**

3. The sampler may receive any of the following sample kits from our lab, depending upon the methods requested

Regular Methods							
Method	Analyte	# of Bottles	Minimum Sample Volume/ Size	Bottle Type	Preservative	Hold Time	Preservation Check
In-house LC-MS-MS	Algal Toxins (microcystins plus cylindrospermopsin and anatoxin-a	2	40 mL	Amber glass vial fitted with PTFE-lined screw cap	MON : 25 mg Ascorbic Acid; SB: 0.4 – 0.45g of mixed sample preservatives (77.5g Trizma Preset crystals, 20 g 2-chloroacetamide, 1.0 g L-ascorbic acid, 3.5 g EDTA)	28 days	---
In-house ELISA Envirologix	Microcystin LR	1	40mL	Amber glass vial fitted with PTFE-lined screw cap	6 mg Sodium Thiosulfate	1 month	---

UCMR4 Methods							
Method	Analyte	# of Bottles	Minimum Sample Volume/ Size	Bottle Type	Preservative	Hold Time	Preservation Check
EPA ELISA Draft ADDA Enzyme-Linked Immunosorbent Assay	Total Microcystins	3	125mL	Amber glass bottle with PTFE-lined screw cap	12.5-15.6 mg /125mL sodium thiosulfate pellet	21 days	Absence of free chlorine, <0.1 mg/L
EPA 544	Microcystins & Nodularin	3	525mL	Amber glass bottle with PTFE-lined screw cap	pH 7.0 Trizma, 7.75 g/L 2-Chloroacetamide, 2 g/L Ascorbic Acid, 0.10 g/L Ethylenediaminetetraacetic acid trisodium salt, 0.35 g/L	28 days	pH 7.0 Absence of free chlorine, <0.1 mg/L
EPA 545	Cylindrospermopsin & Anatoxin-a	3	60mL	Amber glass vial fitted with PTFE-lined screw cap	Ascorbic acid, 0.10 g/L Sodium bisulfate, 1.0 g/L	28 days	Absence of free chlorine, <0.1 mg/L

4. If sampling from a cold water tap, remove the aerator and screen.

5. Open the tap and let the water of the sample source run at fast flow for approximately 3-5 minutes or until the temperature has stabilized.

6. Use indelible ink to clearly identify the sample bottles with the information listed below.

- Sample ID
- Sample source, if not already on label
- Analysis required, if not already on label
- Date and Time of collection
- Preservative used, if not already on label

7. Slow water flow to minimize splashing and fill bottle from the flowing system. **Do not rinse the bottle.**

	Algal Toxins Sampling Instructions	Sampling Instruction No. 42 Revision Date: 06/27/16 Page 2 of 2
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8. For ELISA and EPA 544 Samples:

- a. Fill sample bottle up to at least **the bottom of the neck** to ensure adequate sample volume and to allow mixing, **taking care not to flush out preservatives** and making sure the mouth of the bottle does not come in contact with anything other than sample water.
- b. Cap and invert the sample bottle and mix until preservatives are dissolved.
- c. Collect sample for the other 2 sample bottles by repeating step 8a to 8b.

OR

For EPA 545, In-house LC-MS-MS Algal Toxins Samples, and In-house ELISA Enviroligix:

- d. Fill the vial up to about within **½ to 1 inch from the top** to allow mixing, **taking care not to flush out preservatives** and making sure the mouth of the bottle does not come in contact with anything other than sample water.
- e. Cap and invert the sample bottle and mix until preservatives are dissolved.
- f. Collect sample for the other 2 sample bottles by repeating step 8d to 8e.

SHIPPING SAMPLES AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until at or below 10°C by exchanging the ice used during sampling with sealed bags of fresh frozen ice or gel packs.
2. Collect samples early in the morning and refrigerate them for several hours before packing them in the cooler with the ice or frozen gel packs for transport. Alternatively, cool the samples down by placing them **overnight** in a cooler with ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the samples cold until repacked in the cooler for shipment to the lab.
3. **Pack chilled samples** in a cooler and add enough **FRESH** wet ice to take up 30-50% of the cooler (e.g. most of the remaining space) as recommended in our "*Wet Ice Packing Instructions*" or use FROZEN gel packs.
4. If shipping to the laboratory with **frozen gel packs** rather than wet ice, please be sure that the gel packs have **been frozen for at least 48 hours** prior to the shipment time.
5. Complete Chain of Custody during sample collection. Place completed Kit Order and completed Chain of Custody in a ziplock bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.

- Collector's name	-Date and time of collection
-Unique field sample ID	-Comments about the sample, if applicable
-PWSID #	-Facility ID #
6. **Ship via overnight service such as FEDEX, UPS, or DHL, etc.** Sample must not exceed 10°C during transit.
7. **Samples MUST arrive at lab within 48 hours of sampling at or less than 10°C, greater than 0°C (not frozen)**
8. **If samples are received more than 48 hours after sampling they must be at or less than 6°C, greater than 0°C (not frozen).** For UCMR4, indicate in COC if samples were held at 10°C or less for the first 48 hours after collection and 6°C or less while in their possession.
9. If samples are received on the same day as collection, temperature may be greater than 10°C with evidence of cooling.

GENERAL NOTES

1. It is recommended (but except for UCMR 4 not mandatory) to wear powderless nitrile gloves during sampling and sample handling.
2. Send samples for overnight delivery to the laboratory.
3. Try to collect only on a Monday, Tuesday or Wednesday and ship no later than Thursday of each week, and try to **NOT** collect samples on Friday, Saturday, or Sunday unless special arrangements have been made for the receipt of samples at the laboratory within 48-hours of collection.

UCMR4 NOTES

1. For UCMR4 monitoring associated with the ELISA Method, measure pH and temperature for the associated samples and record the results in the COC.
2. For UCMR4, do not composite (i.e., combine, mix or blend) samples.
3. For UCMR4, Identify sample type (SR, EP, or MR)
4. For UCMR4, Identify Sample Event Number (Cyanotoxins: SEC1, SEC2, SEC3, SEC4, SEC5, SEC6, SEC7, SEC8)

Appendix 8. PPCP Water Sampling Instructions

	<p align="center">PPCP Sample Collection Protocols</p>	<p align="center">Sampling Instruction No. 33 Revision Date: 10/22/13 Page 1 of 2</p>
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1.
 - a) FREEZE GELPAKS UPON RECEIPT OF SAMPLE KIT AND ADD FROZEN GELPAKS TO THE COOLER ON THE DAY OF SAMPLING.
 - b) WHEN SAMPLING, BRING OTHER AVAILABLE BAGGED WET ICE IN SEALED BAGS OR FROZEN GELPAKS TO CHILL SAMPLES DURING SAMPLE COLLECTION.

2. The sampler will receive a sample kit from our lab as follows:
 - 2 x 40 ml amber vials with preservative are provided for the small volume test, or
 - 2 x 500 ml or 1L amber glass bottles with preservative are provide for large volume tests

Upon special request, our lab might include one or both additional kits below:

Field Blank (FB) or Equipment blank (EB): 1 container filled with DI water and 1 container of FB/EB Sample Bottle

Note: Sample bottle contains toxic preservatives to prevent biological degradation of PPCP. Be sure to NOT rinse out the container. Preservatives vary, depending upon the matrix being sampled and the target analyte(s).

3. We are measuring compounds at ng/L levels, so it is very prone to contamination. Please take additional precautions below when sampling for PPCPs
 - a) Put on powderless nitrile gloves at all times, during sampling and processing. Change to clean gloves with each change in activity to avoid potential glove contamination.
 - b) Avoid touching or even breathing into the samples and/or equipment.
 - c) Avoid direct contact between yourself (including clothing) and the sample, sampling device, and processing equipment. Clothing is a source of detergents, fragrances, and fire retardants
 - d) On the day of sampling activities, avoid contact with or consumption of the products listed below. Where contact with or consumption of these products is unavoidable, the collection of field blanks is strongly recommended.

Wastewater and Personal Care or Pharmaceutical Product compounds:

- Soaps and detergents, including antibacterial cleansers
- DEET (active ingredient in most insect repellents)
- Fragrances (cologne, aftershave, perfume)
- Caffeine or Sweeteners (coffee, tea, colas)
- Prescription drugs, medications, and hormonal substances
- Over-the-counter medication
- Human antibiotics
- Veterinary antibiotics
- Tobacco
- Sunscreen
- Antibiotics

4. If your kits include any additional blank samples, please follow the special instruction below:

Field Blank (FB):

- Transfer the DI water provided with your sample kit into the FB sample bottle.
- Cap both containers and return them to the laboratory.

Equipment Blank(EB):


- Pour the DI water provided with your sample kit into the equipment (i.e. baller or other non-tap sampling device) and transfer it into the EB sample bottle(s).
- Cap all containers and return them to the laboratory.

5. Use indelible ink to clearly identify the sample bottles with the information listed below.

- | | |
|---|--|
| - Client Name | - Analysis required, if not already on label |
| - Sample ID | - Date and Time of collection |
| - Source of sample, if not already on label | - Preservative used, if not already on label |

6. If sampling from a faucet,
 - a) Remove the aerator, screen and/or hose attachments.
 - b) Open the tap and let the water of the sample source run at fast flow for approximately 5 minutes.

Appendix 8 continued...


	PPCP Sample Collection Protocols	Sampling Instruction No. 33 Revision Date: 10/22/13 Page 2 of 2
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- c) Slow water flow to thickness of a pencil (to minimize splashing) and fill sample bottles.
7. Fill sample bottles to the base of the neck. Make sure the mouth of the bottle does not come in contact with anything other than the sample water. **DO NOT RINSE OUT PRESERVATIVE.**
 8. Cap and invert the bottles at least 5 times to mix the sample and preservative.
 9. Use indelible ink to clearly identify the sample bottles with the information listed below.
 - Client Name
 - Sample ID
 - Source of sample, if not already on label
 - Analysis required, if not already on label
 - Date and Time of collection
 - Preservative used, if not already on label
 10. Store at 1-4°C but above the freezing point of water for a minimum of 2 hours until transported to the lab. Note that some test suites do not require chilling. Check with your analytical service manager for details.
 11. If sampling **NOT** from a faucet, please follow the following instruction to collect and process the sample(s):
 - a) Select sampling and processing equipment made of fluorocarbon polymers, glass, aluminum, or stainless steel. Avoid equipment made of Tygon, polyethylene, or other plastics.
 - b) Clean equipment thoroughly before use.
 - c) Use non-antibacterial detergents.
 - d) Take extra care to ensure that equipment is copiously rinsed with deionized (DI) water after the detergent wash. (Detergents are a source of interference in the analysis of pharmaceutical compounds and may include a target analyte (triclosan) of the method.)
 - e) Follow the DI water rinse with a methanol rinse. Collect the used methanol solution into an appropriate container for disposal.
 - f) **DO NOT** clean or field-rinse the sample bottles from the laboratory.
 - g) And follow steps 7-10 above.

SAMPLE SHIPPING AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until $\leq 6^{\circ}\text{C}$ by exchanging the ice used during sampling with available sealed bags of fresh frozen ice or frozen gelpaks.
2. **Pack chilled samples** in a cooler with **FROZEN** gelpaks or sealed bags of **WET ICE**.
3. Complete the Chain of Custody during sample collection. Place Kit Order and completed Chain of Custody in a ziplock bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.
 - Collector's name & signature
 - Client Name
 - Sample site
 - Date and time of collection
 - Comments about the sample, if applicable
 - Sample type
4. **Ship via overnight service such as FEDEX, UPS, or DHL, etc.** Maintain an environment at $\leq 6^{\circ}\text{C}$ but above the freezing point of water during transit. It is recommended that samples arrive within 48 hours of sampling, with no more than 40 hours for transit.
5. If samples are received on the same day as collection, temperature may be $>10^{\circ}\text{C}$ with evidence of cooling.
6. Maximum **HOLDING TIME FOR SAMPLES** varies by test list, but it is generally **30 days** from time of collection.
7. Alternatively, cool the samples down by placing them **overnight** in a cooler with frozen refrigerant packs or water ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the cold samples until repacked in the cooler for shipment to the lab.

Appendix 9. Specific Radiochemistry Analysis Water Sampling

	Specific Radiochemistry Analysis Sampling Instructions	Sampling Instruction No. 27 Revision Date: 03/24/14 Page 1 of 2
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1. The sampler will receive a sample kit from our lab.
2. **WHEN SAMPLING, BRING ICE IN SEALED BAGS TO CHILL SAMPLES DURING SAMPLE COLLECTION.**
3. Put on nitrile gloves. If sampling from faucet, remove the aerator and screen.
4. Open the tap and let the water of the sample source run at fast flow for approximately 5 minutes.
5. The sample kit will include some or all bottle(s) as described below. Volumes and preservatives required per test are as follows:

TEST	BOTTLES & PRESERVATIVE	HOLD TIME
@RAD (Gross Alpha and Beta):	(1) 1 L plastic, acid-rinsed, w/ nitric acid, & (1) 125mL plastic, unpreserved	6 months
@RA226,@RA228 (Radium 226 or 228) each:	(1) 1 L plastic, acid-rinsed, w/ nitric acid	6 months
U-MS(Uranium):	(1)250 mL plastic, acid-rinsed, w/ nitric acid	6 months
@H3 (Tritium):	(1) 1 L plastic, unpreserved	6 months
@SR90 (Strontium 90):	(1) 1 L plastic, acid-rinsed, w/ nitric acid, & (1) 125 mL plastic, unpreserved	6 months


CAUTION: PRESERVATIVE IS A STRONG ACID, HANDLE WITH CARE.

6. Use indelible ink (i.e. Sharpie pens) to clearly identify the sample bottles with the information listed below (if not already on the label).

- Client Name	- Analysis required	- Preservative used
- Sample ID	- Date and Time of collection	
7. Slow water flow to thickness of a pencil (to minimize splashing) and fill bottle.
8. Fill sample bottles to the **bottom of the neck**. Make sure the mouth of the bottle does not come in contact with anything other than the sample water. **DO NOT RINSE OUT PRESERVATIVE.**
9. Cap and invert the bottles at least 5 times to mix the sample and preservative.
10. Store at ≤6°C but above the freezing point of water until transported to the lab.

SAMPLE SHIPPING AND STORAGE

1. If shipping samples on the same day of sampling, chill samples until ≤6°C by exchanging the wet ice used during sampling with **FRESH** wet ice.
2. **Pack chilled samples** in a cooler and add enough **FRESH** wet ice to take up 30-50% of the cooler (e.g. most of the remaining space) as recommended in our **"Wet Ice Packing Instructions."**


	Specific Radiochemistry Analysis Sampling Instructions	Sampling Instruction No. 27 Revision Date: 03/24/14 Page 2 of 2
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3. Complete the Chain of Custody during sample collection. Place Kit Order and completed Chain of Custody in a Ziploc style bag in the cooler on top of packing material. The following information is required on the completed Chain of Custody.
 - Collector's name - Sample site -Comments about the sample (if applicable)
 - Client Name -Date and time of collection -Sample type
4. **Ship via overnight service such as FEDEX, UPS, or DHL, etc.** Maintain an environment at $\leq 6^{\circ}\text{C}$ but above the freezing point of water during transit. It is recommended that samples arrive within 48 hours of sampling, with no more than 40 hours for transit.
5. If samples are received on the same day as collection, temperature may be $>10^{\circ}\text{C}$ with evidence of cooling.
6. Maximum **HOLDING TIME FOR SAMPLES** is 6 months from time of collection.
7. Alternatively, cool the samples down by placing them **overnight** in a cooler with wet ice, or in a refrigerator (store chilled for at least 12 hours before packing for shipment). Maintain the cold samples until repacked in the cooler for shipment to the lab.

ADDITIONAL NOTES

- Try to collect only on a Monday, Tuesday or Wednesday and ship no later than Thursday of each week, and try to **NOT** collect samples on Friday, Saturday, or Sunday unless special arrangements have been made for the receipt of samples at the laboratory within 48-hours of collection.
- If shipping to the laboratory with **frozen gel packs** rather than wet ice, please be sure that the gel packs have **been frozen for at least 48 hours** prior to the shipment time.

Appendix 10. Monrovia, CA Chain-of-Custody Document



Eaton Analytical
EUROFINS EATON ANALYTICAL USE ONLY

CHAIN OF CUSTODY RECORD

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 568 LABS (800 566 5227)
Website:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: _____

SAMPLES LOGGED IN BY: _____

SAMPLE TEMP RECEIVED AT: _____

IR Gun ID = _____ (Observation = _____ °C) (Final = _____ °C)
 (Other) _____ (Observation = _____ °C) (Final = _____ °C)

IR Gun ID = _____ (Observation = _____ °C) (Final = _____ °C)
 (Monrovia) _____ (Observation = _____ °C) (Final = _____ °C)

Compliance Acceptance Criteria: (Identify: 4 ± 2 °C) (Monrovia: < 10°C)

TYPE OF ICE: Real _____ Synthetic _____ No Ice _____

CONDITION OF ICE: Frozen _____ Partially Frozen _____ Thawed _____ N/A _____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other _____

TO BE COMPLETED BY SAMPLER

COMPANY/AGENCY NAME: _____ PROJECT CODE: _____

EPA CLIENT CODE: _____ CQC ID: _____ SAMPLE GROUP: _____

TAT requested: rush by adv. notice only STD _____ 1 wk _____ 3 day _____ 2 day _____ 1 day _____

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX	FIELD DATA	FIELD DATA	COMPLIANCE SAMPLES <small>(check for yes)</small>	NON-COMPLIANCE SAMPLES <small>(check for yes)</small>	SAMPLER COMMENTS
							<input type="checkbox"/> Type of samples (circle one): <input type="checkbox"/> Routine <input type="checkbox"/> Special Confirmation <input type="checkbox"/> Regulation Involved	<input type="checkbox"/> SEE ATTACHED KIT ORDER FOR ANALYSES <input type="checkbox"/> List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)	

* MATRIX TYPES: RSW = Raw Surface Water CPW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil O = Other - Please Identify
 RGW = Raw Ground Water FW = Other Finished Water WW = Wastewater SW = Storm Water SL = Sludge

SAMPLER BY: _____ SIGNATURE PRINT NAME COMPANY/TITLE DATE TIME

RELINQUISHED BY: _____

RECEIVED BY: _____

RELINQUISHED BY: _____

RECEIVED BY: _____

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Appendix 11. NYCDEP Emerging Contaminant Monitoring Project - First quarter sampling

1/25/2019	(duplicates taken at CATALUM and E11)													
USEPA or other						Site								
Methodology	CROGH	CATALUM	DEL18DT	DEL17	MB-1	N5-1	N12	BG9	WHIP	E9	E10	E11	Trip	Samples
													Blank^	per method
200.7/.8 (UCMR3)	1	2	1	1	1	1	1	1	1	1	1	2		14
300.0	1	2	1	1	1	1	1	1	1	1	1	2		14
522	1	2	1	1	1	1	1	1	1	1	1	2		14
EEA 9609 (PPCPs)	1	2	1	1	1	1	1	1	1	1	1	2		14
218.7	1	2	1	1	1	1	1	1	1	1	1	2		14
537	1	2	1+ FRB*	1	1	1	1	1	1	1	1	2+FRB*	2^	16
200.8 (UCMR4)	1	2	1	1	1	1	1	1	1	1	1	2		14
525.3	1	2	1	1	1	1	1	1	1	1	1	2		14
530	1	2	1	1	1	1	1	1	1	1	1	2		14
541	1	2	1	1	1	1	1	1	1	1	1	2		14
Algal 9 (Cyanotoxin Scan)	1	2	1	1										5
Radium 226 (GA Method)	1	2	1	1	1	1	1	1	1	1	1	2		14
Radium 228 (GA Method)	1	2	1	1	1	1	1	1	1	1	1	2		14
Alpha, Gross (Method 900.0)	1	2	1	1	1	1	1	1	1	1	1	2		14
Beta, Gross (Method 900.0)	1	2	1	1	1	1	1	1	1	1	1	2		14
Uranium (Method 200.8)	1	2	1	1	1	1	1	1	1	1	1	2		14
													Total	217

*FRB - One Field Reagent Blank at a keypoint, one at a stream. (DEL18DT FRB was not collected this quarter).

^Trip blanks provided by Eurofins, not collected by DEP; so not counted in the sample tally

Trip blank bottles are then discarded and FRBs returned for analysis.

Appendix 12. NYCDEP Emerging Contaminant Monitoring Project - Second quarter sampling

4/3/2019	(duplicates taken at CROGH and E10)																									
USEPA or other																										
Methodology	CROGH	CATALUM	DEL18DT	DEL17	MB-1	N5-1	N12	BG9	WHIP	E9	E10	E11	Trip	Samples												
													Blank^	per method												
200.7/.8 (UCMR3)	2	1	1	1	1	1	1	1	1	1	2	1													14	
300.0	2	1	1	1	1	1	1	1	1	1	2	1													14	
522	2	1	1	1	1	1	1	1	1	1	2	1													14	
EEA 9609 (PPCPs)	2	1	1	1	1	1	1	1	1	1	2	1													14	
218.7	2	1	1	1	1	1	1	1	1	1	2	1													14	
537	2	1+FRB*	1	1	1	1	1+FRB*	1	1	1	2	1	2^												16	
200.8 (UCMR4)	2	1	1	1	1	1	1	1	1	1	2	1													14	
525.3	2	1	1	1	1	1	1	1	1	1	2	1													14	
530	2	1	1	1	1	1	1	1	1	1	2	1													14	
541	2	1	1	1	1	1	1	1	1	1	2	1													14	
Algal 9 (Cyanotoxin Scan)	2	1	1	1																					5	
Radium 226 (GA Method)	2	1	1	1	1	1	1	1	1	1	2	1													14	
Radium 228 (GA Method)	2	1	1	1	1	1	1	1	1	1	2	1													14	
Alpha, Gross (Method 900.0)	2	1	1	1	1	1	1	1	1	1	2	1													14	
Beta, Gross (Method 900.0)	2	1	1	1	1	1	1	1	1	1	2	1													14	
Uranium (Method 200.8)	2	1	1	1	1	1	1	1	1	1	2	1													14	
																									Total	217

*FRB - One Field Reagent Blank at a keypoint, one at a stream.

^Trip blanks provided by Eurofins, not collected by DEP; so not counted in the sample tally

Trip blank bottles are then discarded and FRBs returned for analysis.

Appendix 13. NYCDEP Emerging Contaminant Monitoring Project - Third quarter sampling

4/3/2019	(duplicates taken DEL18DT and E9)														
USEPA or other															
Methodology	CROGH	CATALUM	DEL18DT	DEL17	MB-1	N5-1	N12	BG9	WHIP	E9	E10	E11	Trip	Samples	
													Blank^	per method	
200.7/.8 (UCMR3)	1	1	2	1	1	1	1	1	1	2	1	1		14	
300.0	1	1	2	1	1	1	1	1	1	2	1	1		14	
522	1	1	2	1	1	1	1	1	1	2	1	1		14	
EEA 9609 (PPCPs)	1	1	2	1	1	1	1	1	1	2	1	1		14	
218.7	1	1	2	1	1	1	1	1	1	2	1	1		14	
537	1	1	2	1+FRB*	1	1+FRB*	1	1	1	2	1	1	2^	16	
200.8 (UCMR4)	1	1	2	1	1	1	1	1	1	2	1	1		14	
525.3	1	1	2	1	1	1	1	1	1	2	1	1		14	
530	1	1	2	1	1	1	1	1	1	2	1	1		14	
541	1	1	2	1	1	1	1	1	1	2	1	1		14	
Algal 9 (Cyanotoxin Scan)	1	1	2	1										5	
Radium 226 (GA Method)	1	1	2	1	1	1	1	1	1	2	1	1		14	
Radium 228 (GA Method)	1	1	2	1	1	1	1	1	1	2	1	1		14	
Alpha, Gross (Method 900.0)	1	1	2	1	1	1	1	1	1	2	1	1		14	
Beta, Gross (Method 900.0)	1	1	2	1	1	1	1	1	1	2	1	1		14	
Uranium (Method 200.8)	1	1	2	1	1	1	1	1	1	2	1	1		14	
													Total	217	

*FRB - One Field Reagent Blank at a keypoint, one at a stream.

^Trip blanks provided by Eurofins, not collected by DEP; so not counted in the sample tally

Trip blank bottles are then discarded and FRBs returned for analysis.

Appendix 14. NYCDEP Emerging Contaminant Monitoring Project - Fourth quarter sampling

4/3/2019	(duplicates taken at DEL17 and MB-1)														
USEPA or other															
Methodology	CROGH	CATALUM	DEL18DT	DEL17	MB-1	N5-1	N12	BG9	WHIP	E9	E10	E11	Trip	Samples	
													Blank^	per method	
200.7/.8 (UCMR3)	1	1	1	2	2	1	1	1	1	1	1	1		14	
300.0	1	1	1	2	2	1	1	1	1	1	1	1		14	
522	1	1	1	2	2	1	1	1	1	1	1	1		14	
EEA 9609 (PPCPs)	1	1	1	2	2	1	1	1	1	1	1	1		14	
218.7	1	1	1	2	2	1	1	1	1	1	1	1		14	
537	1+FRB*	1	1	2	2	1	1	1	1+FRB*	1	1	1	2^	16	
200.8 (UCMR4)	1	1	1	2	2	1	1	1	1	1	1	1		14	
525.3	1	1	1	2	2	1	1	1	1	1	1	1		14	
530	1	1	1	2	2	1	1	1	1	1	1	1		14	
541	1	1	1	2	2	1	1	1	1	1	1	1		14	
Algal 9 (Cyanotoxin Scan)	1	1	1	2										5	
Radium 226 (GA Method)	1	1	1	2	2	1	1	1	1	1	1	1		14	
Radium 228 (GA Method)	1	1	1	2	2	1	1	1	1	1	1	1		14	
Alpha, Gross (Method 900.0)	1	1	1	2	2	1	1	1	1	1	1	1		14	
Beta, Gross (Method 900.0)	1	1	1	2	2	1	1	1	1	1	1	1		14	
Uranium (Method 200.8)	1	1	1	2	2	1	1	1	1	1	1	1		14	
													Total	217	

*FRB - One Field Reagent Blank at a keypoint, one at a stream.

^Trip blanks provided by Eurofins, not collected by DEP; so not counted in the sample tally

Trip blank bottles are then discarded and FRBs returned for analysis.

