



DEPARTMENT OF THE NAVY  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
2000 NAVY PENTAGON  
WASHINGTON, DC 20350-2000

5090  
N45 Ser/15U132432  
14 SEP 15

From: Director, Energy and Environmental Readiness (OPNAV N45)  
To: Commander, Navy Installations Command (N4)

Subj: NAVY DRINKING WATER SAMPLING POLICY FOR  
PERFLUORO CHEMICALS PERFLUORO OCTANE SULFONATE AND  
PERFLUORO CATANOIC ACID

Ref: (a) CNICINST 5090.3  
(b) EPA Office of Water Provisional Health Advisories for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) dated January 8, 2009  
(c) BUMEDINST 6240.1B

Encl: (1) 21 October 2014 ASN (EI&E) Memo  
(2) EPA Approved Laboratories for UCMR 3  
(3) Field Sampling Protocols to Avoid Cross Contamination

1. Effective the date of this letter, this policy supports enclosure (1) in providing requirements for sampling and testing for the emerging contaminants Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) in certain Navy public water systems (PWS) in the United States and Navy overseas drinking water (ODW) systems as defined in reference (a).
2. Background. PFOS and PFOA are perfluorochemicals (PFCs), man-made chemicals that are of increasing concern to the U.S. Environmental Protection Agency (EPA) and state regulators. These substances are very stable and persistent in the environment and because they are not adsorbed well in soil, they can migrate to drinking water sources. At present, these substances are considered "emerging contaminants" for which there are no Safe Drinking Water Act (SDWA) regulatory standards. While PFCs have been used in a variety of products and substances, the most common historical Navy use of the substances has been as a fire extinguishing surfactant in Aqueous Film-Forming Foam (AFFF).
3. In 2012, EPA added a requirement to sample for PFOS/PFOA under the SDWA Third Unregulated Contaminant Monitoring Rule (UCMR 3). As a result, all large and 800 small public water systems (PWS) in the United States must sample and test for these chemicals between 2013 and 2015. The purpose of UCMR 3 sampling and testing is to determine the extent that PFOS/PFOA occurs in U.S. drinking water systems and whether drinking water standards should be established.
4. On 8 January 2009, EPA's Office of Water released a Provisional Health Advisory (PHA) establishing health-based screening levels for PFOS and PFOA. Reference (b) sets the PHA for PFOS at 0.2 micrograms per liter ( $\mu\text{g/L}$ ); the PHA for PFOA was set at 0.4  $\mu\text{g/L}$ . The 2009 PHA is under review, and if EPA revises the levels, the revised figures will be used for all Navy PFOS/PFOA actions unless the U.S. state in which the installation is located has established more stringent standards.

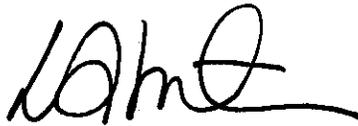
Subj: NAVY DRINKING WATER SAMPLING POLICY FOR PERFLUOROCHEMICALS  
PERFLUOROOCTANE SULFONATE AND PERFLUOROOCATONOIC ACID

5. Policy. This letter establishes policy for the sampling and testing of PFOS and PFOA in drinking water at certain Navy installations worldwide. When federal, state, or DoD standards are promulgated, the more protective requirement will be used for Navy PFOS and PFOA actions.
6. All Navy PWSs in the United States that produce drinking water from on installation sources where PFCs are known or suspected to have been released within approximately 1-mile up-gradient to the drinking water source must sample and test for PFOS/PFOA in finished drinking water. Navy PWSs that have completed sampling and testing for PFOS/PFOA under the Federal UCMR 3 or any state UCMR that has requirements at least as stringent as Federal requirements are not required to repeat sampling and testing for the purpose of this policy. All ODW Systems must also sample and test for PFOS/PFOA in finished drinking water, unless the installation can document that there is no potential PFOS/PFOA exposure pathway.
7. Drinking water managers should work with Environmental Restoration managers to determine if PFCs are known or suspected to have been released within approximately 1-mile up-gradient to the drinking water source.
8. Navy Public Water Systems in the United States subject to this policy must complete sampling and testing by December 31, 2015. Navy ODW systems must complete sampling by March 31, 2016. One sample per drinking water system is required and EPA Method 537 Rev 1.1 must be used for analyzing all samples. Samples must be processed in a laboratory accredited for EPA Method 537 Rev 1.1. Enclosure (2) provides a list of laboratories approved for EPA Method 537. Navy ODW systems must also use a U.S. laboratory approved for EPA Method 537. Given the low detection limits associated with PFC analysis and the many potential sources of trace levels of PFCs, personnel are advised to follow the protocols in Enclosure (3).
9. If a PFOS or PFOA sample exceeds the PHA at any Navy drinking water system, alternative drinking water must be supplied until these levels can be reduced below the PHAs. Exceedances and corrective actions shall be reported to the chain of command and consultation with the Navy Marine Corps Public Health Center should be initiated to determine allowable uses for the water in accordance with reference (c).
10. If a PFOS or PFOA sample is below the PHA, but is detected above the Minimum Reporting Level (0.04 ug/l and 0.02 ug/l respectively), the Navy drinking water system should coordinate possible follow-up actions with the chain of command. This may include additional sampling and monitoring to ensure the PFOS and PFOA levels in the drinking water system remain below the PHAs.
11. Funding for sampling and testing shall be programmed as an emergent project in Navy's Environmental Portal, Environmental Program Requirements Web (EPR Web) Guidebook number 05999 using Environmental Readiness Level 4 to ensure projects receive the highest priority for funding. Funding for implementation of corrective actions is the responsibility of the installation Public Works Officer.

Subj: NAVY DRINKING WATER SAMPLING POLICY FOR PERFLUOROCHEMICALS  
PERFLUOROOCTANE SULFONATE AND PERFLUOROOCATONOIC ACID

12. All results of UCMR 3 PFOS/PFOA sampling, and Navy Public Water System sampling under this policy shall be submitted to OPNAV N45 by 15 February 2016. ODW System sampling shall be submitted to OPNAV N45 no later than 15 May 2016.

13. My point of contact is Ms. Lindsay R. Nehm, N452E, at (703) 695-5179, DSN 225-5179, or e-mail [Lindsay.nehm@navy.mil](mailto:Lindsay.nehm@navy.mil).



D. G. MORTON  
Rear Admiral, U.S. Navy  
Director, Energy and Environmental  
Readiness Division

Copy to:  
DASN(E)  
OPNAV N4  
OPNAV N46  
NAVFAC ENV  
BUMED  
NAVSEA 04X



DEPARTMENT OF THE NAVY  
THE ASSISTANT SECRETARY OF THE NAVY  
(ENERGY, INSTALLATIONS AND ENVIRONMENT)  
1000 NAVY PENTAGON  
WASHINGTON DC 20350-1000

October 21, 2014

MEMORANDUM FOR DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET  
READINESS AND LOGISTICS) (N4)  
DEPUTY COMMANDANT OF THE MARINE CORPS  
(INSTALLATIONS AND LOGISTICS)

SUBJECT: Perfluorinated Compounds (PFCs) – An Emerging Environmental Issue

References: (a) OPNAVINST 5090.1D  
(b) MCO P5090.2A  
(c) DoDI 4715.18  
(d) SECNAV Info Memo, 29 Jul 2014

The Department of the Navy (DON) is committed to ensuring all men, women, and children who live or work on DON installations and facilities are protected from environmental contaminants and receive safe drinking water. Navy and Marine Corps maintain comprehensive environmental instructions (references (a) and (b)) detailing procedures to meet and exceed requirements found in statute, regulation, and policy. Reference (c) established Department of Defense (DoD) policy relative to emerging contaminants, such as PFCs.

PFCs are a suite of chemicals of emerging public health concern to the U.S. Environmental Protection Agency (EPA) and state regulators, primarily in drinking water systems. One of the major DoD uses of PFCs is as a fire extinguishing agent in aqueous film forming foam (AFFF). EPA added new PFC sampling requirements under the Safe Drinking Water Act (SDWA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3), requiring all large and 800 small public water systems to test for these chemical between 2013-2015. This testing is being conducted to determine the extent of PFCs in drinking water systems nationwide and whether drinking water standards should be established.

Per reference (d), my staff coordinated a meeting with the DoD Component subject matter experts to evaluate these emerging contaminants and identify paths forward regarding the future use, cleanup, and protection of DON drinking water systems. To date, only two PFCs (perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)) have sufficient toxicological information to make cleanup and drinking water safety decisions. DoD is taking the lead and will be conducting a study of AFFF formulations to determine whether safer alternatives are available that meet our firefighting requirements. After coordinating with your Navy and Marine Corps staff, I am directing the following actions be taken regarding PFOS and PFOA cleanup sites and drinking water systems:

- Defense Environmental Restoration Program (DERP) – identify all known and suspected sites where PFOS and/or PFOA may have been released on active and Base Realignment and Closure (BRAC) installations. As appropriate, address these contaminant releases including migration off-site, under DERP and in accordance with reference (c).
- DON drinking water systems in the United States – Ensure all applicable UCMR 3 testing and reporting requirements are met by December 2015. If exceedances of Provisional Health Advisory (PHA) values are identified, supply alternative drinking water until these levels can be reduced below the PHAs. For installations not required to test under the UCMR 3, and where the installation produces drinking water from on-installation sources, by December 2015, sample finished drinking water from all DON systems for PFOS and PFOA where there is an identified or suspected PFC release within approximately 1-mile upgradient to the drinking water source. Address any PHA value exceedances per above.
- DON overseas drinking water systems – DERP does not apply overseas, so PFC release site information may not be available. Therefore, all DON overseas drinking water systems shall be sampled for PFOS and PFOA by December 2015 and any PHA value exceedances addressed per above.
- Drinking water systems with detections above the Method Reporting Limit (MRL), but below the PHA value shall determine appropriate follow-up actions, in coordination with the chain of command, which may include additional sampling to ensure levels in drinking water, remain below the PHA value.
- Report all drinking water PHA value and MRL exceedances and corrective actions to my office.

My point of contact is Mr. Richard Mach at (703) 614-5463 or richard.mach@navy.mil.

  
Donald R. Schregardus

# EPA Approved Laboratories for UCMR 3

These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.



Laboratory Name	Assessment Monitoring List 1					Screening Survey List 2	
	EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537	EPA 539
Arkansas DoH Public Health Lab 201 South Monroe St. Little Rock, AR 72205 (501)661-2220	X	X	X		X		
City of Phoenix Laboratory Services 2474 South 22nd Avenue Phoenix, AZ 85009 (602)534-2960	X	X	X		X		
City of Tempe Water Quality Laboratory PO Box 5002 Tempe, AZ 85280 (480)350-8255 <a href="http://www.tempe.gov/waterquality">www.tempe.gov/waterquality</a>	X						
Orange Co. Water District Advanced Water Quality Assurance Lab 18700 Ward Street Fountain Valley, CA 92708 (714)378-3347 <a href="http://www.ocwd.com">www.ocwd.com</a>	X	X	X	X	X	X	X
BSK Associates 1414 Stanislaus Street Fresno, CA 93706 (559)497-2888 <a href="http://www.bskinc.com">www.bskinc.com</a>	X	X	X	X	X	X	X
Weck Laboratories, Inc. 14859 E. Clark Avenue Industry, CA 91745 (626)336-2139 <a href="http://www.wecklabs.com">www.wecklabs.com</a>	X	X	X	X	X	X	X
TestAmerica - Irvine 17461 Derian Ave. Suite 100 Irvine, CA 92614 (949)261-1022 <a href="http://www.testamericainc.com">www.testamericainc.com</a>		X	X	X	X		

These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.



**Screening Survey**

**Assessment Monitoring**

**Laboratory Name**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537	EPA 539
X	X	X	X	X	X	X
X	X	X	X	X		
X	X	X	X	X	X	X
X	X	X	X	X		
X	X	X	X	X		X
X	X	X	X	X	X	X
					X	
		X		X	X	X

**Eurofins Eaton Analytical Inc, formerly known as MWH Labs**  
 750 Royal Oaks Drive  
 Monrovia, CA 91016  
 (626)386-1100  
[www.eatonanalytical.com](http://www.eatonanalytical.com)

**Los Angeles DWP, Water Quality Laboratory**  
 555 E Walnut St  
 Pasadena, CA 91101  
 (213)367-8546

**McCampbell Analytical, Inc.**  
 1534 Willow Pass Road  
 Pittsburg, CA 94565  
 (925)252-9262  
[www.mccampbell.com](http://www.mccampbell.com)

**Basic Laboratory, Inc.**  
 2218 Railroad Ave.  
 Redding, CA 96001  
 (530)243-7234  
[www.basiclab.com](http://www.basiclab.com)

**Edward S. Babcock and Sons, Inc.**  
 6100 Quail Valley Court  
 Riverside, CA 92507  
 (951)653-3351  
[www.babcocklabs.com](http://www.babcocklabs.com)

**Test America - West Sacramento**  
 880 Riverside Parkway  
 West Sacramento, CA 95605  
 (916)373-5600  
[www.testamericainc.com](http://www.testamericainc.com)

**Regional Water Authority**  
 90 Sargent Dr.  
 New Haven, CT 06511  
 (203)562-4020  
[www.rwater.com](http://www.rwater.com)



These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.

**Laboratory Name**

**Orange County Utilities Laboratory**  
 9124 Curry Ford Road  
 Orlando, FL 32825  
 (407)254-9550

**Pace Analytical Services, Inc. - Florida**  
 8 East Tower Circle  
 Ormond Beach, FL 32174  
 (386)672-5668  
[www.pacelabs.com](http://www.pacelabs.com)

**State Hygienic Laboratory - Ankeny**  
 2220 S. Ankeny Blvd.  
 Ankeny, IA 500239093  
 (515)725-1600  
[www.shl.uiowa.edu](http://www.shl.uiowa.edu)

**State Hygienic Laboratory - Coralville**  
 2490 Crosspark Road  
 Coralville, IA 522414792  
 (319)335-4500  
[www.shl.uiowa.edu](http://www.shl.uiowa.edu)

**Anatek Labs, Inc.**  
 1282 Alturas Drive  
 Moscow, ID 83843  
 (208)883-2839  
[www.anateklabs.com](http://www.anateklabs.com)

**American Water Central Laboratory**  
 1115 S. Illinois Street  
 Belleville, IL 62220  
 (618)235-3600  
[www.amwater.com](http://www.amwater.com)

**PDC Laboratories**  
 PO Box 9071  
 Peoria, IL 616129071

Assessment Monitoring List 1							Screening Survey List 2	
EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537	EPA 539		
X	X	X	X	X	X		X	
X	X	X	X	X	X		X	
X	X	X						
			X	X	X		X	
X			X	X	X		X	
X	X	X	X	X	X		X	

These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.



**Laboratory Name**

**Heritage Environmental Services, LLC**

7901 W. Morris St.  
Indianapolis, IN 46231  
(317)243-8304  
[www.heritage-enviro.com](http://www.heritage-enviro.com)

**UL LLC**

110 South Hill Street  
South Bend, IN 46617  
(574)233-4777  
[www.ul.com/water/waterlab](http://www.ul.com/water/waterlab)

**McCoy & McCoy Laboratories, Inc.**

P.O. Box 907  
Madisonville, KY 42431  
(270)821-7375  
[www.mccovlabs.com](http://www.mccovlabs.com)

**Barnstable County Dept. of Health and Environment Lab**

3195 Main Street  
Barnstable, MA 02630  
(508)375-6606

**Enviro-Chem Laboratories, Inc.**

47 Loveton Circle, STE K  
Sparks, MD 21152  
(410)472-1112  
[www.enviro-chem.net](http://www.enviro-chem.net)

**ALS Environmental Division - Holland**

3352 128th Ave  
Holland, MI 49424  
(616)399-6070  
[www.alsglobal.com](http://www.alsglobal.com)

**National Testing Laboratories, Ltd.**

556 South Mansfield St.  
Ypsilanti, MI 48197

**Assessment Monitoring  
List 1**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537
					X
X	X	X	X	X	X
X	X	X	X	X	
		X		X	
X					
X	X	X	X	X	
X					

**Screening Survey  
List 2**

EPA 539
X

These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.



**Laboratory Name**

**MO DNR Environmental Laboratory**

2710 West Main St  
Jefferson City, MO 65109  
(573)526-6971

**Microbac Laboratories, Inc. - Wilson Division**

3809 Airport Drive NW  
Wilson, NC 27896  
(252)237-4175  
[www.microbac.com](http://www.microbac.com)

**EMSL Analytical, Inc.**

200 Route 130 North  
Cinnaminson, NJ 08077  
(800)220-3675  
[www.emsl.com](http://www.emsl.com)

**Suffolk County Water Authority Laboratory**

260 Motor Parkway  
Hauppauge, NY 11788  
(631)563-0259  
[scwa.com](http://scwa.com)

**H2M Labs, Inc.**

575 Broad Hollow Rd  
Melville, NY 11747  
(631)694-3040  
[www.h2mlabs.com](http://www.h2mlabs.com)

**Columbia Analytical Services - NY**

1565 Jefferson Rd, Building 300, Ste 360  
Rochester, NY 14623  
(585)288-5380  
[www.caslab.com](http://www.caslab.com)

**Westchester County Dept. of Lab and Research**

10 Dana Road  
Valhalla, NY 10595  
(914)231-1620  
[labs.westchestergov.com](http://labs.westchestergov.com)

**Assessment Monitoring  
List 1**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537
X		X			
		X			
		X			
X	X	X	X	X	X
		X	X	X	
	X		X		
			X	X	

**Screening Survey  
List 2**

EPA 539
X



These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.

**Laboratory Name**

**Assessment Monitoring List 1**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537
X	X	X	X	X	
X	X	X	X	X	
X	X	X	X	X	X
X	X	X		X	
X			X	X	
X	X	X	X	X	
X	X	X	X	X	

**Screening Survey List 2**

EPA 539
X

**Summit Environmental Technologies, Inc.**

3310 Win Street  
 Cuyahoga Falls, OH 44223  
 (330)253-8211  
[www.settek.com](http://www.settek.com)

**Alloway Testing**

1776 Marion-Waldo Road  
 Marion, OH 43302  
 (740)389-5991  
[www.alloway.com](http://www.alloway.com)

**Accurate Environmental Labs**

505 S. Lowry  
 Stillwater, OK 74074  
 (405)372-5300  
[www.accuratelabs.com](http://www.accuratelabs.com)

**Aqua Pennsylvania, Inc.**

762 W. Lancaster Ave  
 Bryn Mawr, PA 190103489  
 (610)645-1145

**Microbac Laboratories, Inc. Central Pennsylvania Division**

4359 Linglestown Road  
 Harrisburg, PA 17112  
 (717)651-9700  
[www.microbac.com](http://www.microbac.com)

**ALS - Middletown**

34 Dogwood Lane  
 Middletown, PA 17057  
 (717)944-5541  
[www.alsglobal.com](http://www.alsglobal.com)

**Suburban Water Testing Labs**

1037F MacArthur Rd  
 Reading, PA 19605  
[h2otest.com](http://h2otest.com)

These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.



**Laboratory Name**

**M.J. Reider Associates, Inc.**  
 107 Angelica Street  
 Reading, PA 19611  
 (610)374-5129  
[mreider.com](http://mreider.com)

**Kirby Memorial Health Center**  
 71 North Franklin St  
 Wilkes-Barre, PA 18701  
 (570)823-5450  
[www.kirbyhealthcenter.org](http://www.kirbyhealthcenter.org)

**Environmental Quality Laboratories, Inc (EQLab)**  
 P. O. Box 11458  
 Santurce, PR 009101458  
 (787)288-6420  
[www.eqlab.com](http://www.eqlab.com)

**Rogers and Callcott Engineers, Inc.**  
 PO Box 5655  
 Greenville, SC 29606  
 (864)232-1556  
[www.rogersandcallcott.com](http://www.rogersandcallcott.com)

**LCRA - Environmental Laboratory Services**  
 3505 Montopolis Dr, MS: EL-101  
 Austin, TX 78744  
 (512)356-6022  
<https://els.lcra.org>

**City of Houston Drinking Water Operations Laboratory**  
 2300 Federal Rd  
 Houston, TX 77015  
 (832)395-6039  
<http://www.publicworks.houstontx.gov/utilities/drinking>

**Unified State Laboratories: UT DoH**  
 4431 South 2700 West  
 Taylorsville, UT 84129  
 (801)965-2400

**Assessment Monitoring List 1**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537
	X	X			
X					
		X	X		
				X	
X		X	X	X	X
	X	X	X		
X	X	X	X	X	X

**Screening Survey List 2**

EPA 539
X



These laboratories met the Unregulated Contaminant Monitoring Rule 3 (UCMR 3) Laboratory Approval Program application and Proficiency Testing (PT) criteria for the methods indicated. These laboratories can only analyze samples using those methods marked with "X" next to their names. This approved laboratory list is subject to change. Laboratories that withdraw or fail to maintain the method and program quality control requirements will be permanently removed from the list.

**Laboratory Name**

**Edge Analytical, Inc.**  
 1620 S. Walnut St.  
 Burlington, WA 98233  
 (360)757-1400  
[www.edgeanalytical.com](http://www.edgeanalytical.com)

**Columbia Analytical Services, Inc.**  
 1317 South 13th Avenue  
 Kelso, WA 98626  
 (360)577-7222  
[www.caslab.com](http://www.caslab.com)

**Water Management Laboratories, Inc.**  
 1515 80th Street East  
 Tacoma, WA 98404  
 (253)531-3121

**Northern Lake Service, Inc.**  
 400 N. Lake Ave.  
 Crandon, WI 54520  
 (800)278-1254  
[www.nlsilab.com](http://www.nlsilab.com)

**Assessment Monitoring List 1**

EPA 200.8	EPA 218.7	EPA 300.1	EPA 522	EPA 524.3	EPA 537
X	X	X	X	X	
					X
X		X	X		
X	X	X	X	X	X

**Screening Survey List 2**

EPA 539
X
X

End of List

The Laboratory Approval Program is voluntary, and is specific to laboratories analyzing samples for UCMR 3. The laboratories' approval status indicates they have demonstrated specific capabilities using the method(s).

Public water systems (PWSs) are responsible for their laboratories, and must ensure they are following the methods and meeting the quality control (QC) criteria specified in UCMR 3. Laboratories must post sample analytical results and required QC data electronically via the Safe Drinking Water Accession and Review System (SDWARS) within 120 days of the sample collection date. EPA may revoke a laboratory's approval status if the laboratory does not adhere to quality assurance/quality control (QA/QC) procedures and criteria, or fails to post data to SDWARS. If EPA revokes approval, the laboratory's name will no longer appear on this list. Once approval has been revoked, the laboratory cannot be re-approved during the UCMR 3 monitoring period.

Questions: UCMR Message Center (800) 949-1581

1 **FIELD SAMPLING PROTOCOLS TO AVOID CROSS-CONTAMINATION DURING WATER SAMPLING**  
2 **FOR PERFLUORINATED COMPOUNDS (PFCs)**

3 **1.0 PURPOSE**

4 While EPA method 537 provides basic guidance on sampling for PFC's in drinking water, due to  
5 the potential for cross contamination this Standard Operating Procedure (SOP) addendum  
6 describes additional precautionary procedures/considerations when collecting groundwater or  
7 drinking water samples. Sampling specific SOPs should also be reviewed prior to conducting  
8 field sampling activities at PFC sites.

9 **2.0 SCOPE**

10 This procedure applies to all qualified personnel and subcontractors who collect or otherwise  
11 handle water samples for analysis of PFCs. This SOP should be reviewed by all on-site  
12 personnel prior to implementation of field activities.

13 **3.0 GENERAL**

14 Given the low detection limits associated with PFC analysis and the many potential sources of  
15 trace levels of PFCs, field personnel are advised to act on the side of caution by strictly following  
16 these protocols, frequently replacing nitrile gloves, and rinsing field equipment to help mitigate  
17 the potential for background contamination detections of PFCs. Specific items related to field  
18 sampling are discussed below.

19 **4.0 PROCEDURES/CONSIDERATIONS**

20 The following are procedures/considerations to be made during field activities at potential PFC  
21 release sites.

22 **Field Equipment**

- 23
- 24 • **Do not use Teflon®-containing materials** (e.g., Teflon® tubing, bailers, tape, plumbing  
25 paste, or other Teflon® materials) since Teflon® contains fluorinated compounds.
  - 26 • High-density polyethylene (HDPE), low-density polyethylene (LDPE), and silicon  
27 materials are acceptable for sampling. Samples should not be stored in containers made  
28 of LDPE materials.
  - 29 • To avoid plastic coating or glue materials, **do not use waterproof field books**. Field  
30 reports should be documented on loose paper on masonite or aluminum clipboards (i.e.  
31 plastic clipboards, binders, or spiral hard cover notebooks are not acceptable).  
32 Sharpies®/markers should be avoided.
  - **Post-It Notes are not allowed** on project sites.

- 33 • **Do not use markers.** Pens should be used when documenting field activities in the field  
34 log and on field forms as well as labeling sample containers and preparing the Chain of  
35 Custody.
- 36 • **Do not use chemical (blue) ice packs** during the sampling program. This includes the  
37 use of ice packs for the storage of food and/or samples.

### 38 **Field Clothing and Personal Protective Equipment**

- 39 • **Do not wear water resistant, waterproof, or stain-treated clothing** during the field  
40 program. Field clothing made of synthetic and natural fibers (preferably cotton) are  
41 acceptable. Field clothing should be laundered avoiding the use of fabric softener.  
42 Preferably, field gear should be cotton construction and well laundered (a minimum of 6  
43 times from time of purchase). New clothing may contain PFC related treatments. **Do**  
44 **not use new clothing** while sampling or sample handling.
- 45 • **Do not wear clothing or boots containing Gore-Tex™** during the sampling program as it  
46 consists of a PFC membrane.
- 47 • All safety footwear will consist of steel-toed boots made with polyurethane and  
48 polyvinyl chloride (PVC).
- 49 • **Do not wear Tyvek® clothing** on-site since it contains fluorinated compounds.
- 50 • Disposable nitrile gloves must be worn at all times. Further, a new pair of nitrile gloves  
51 should be donned prior to the following activities at each sample location:
  - 52 - Decontamination of re-usable sampling equipment;
  - 53 - Prior to contact with sample bottles or water containers;
  - 54 - Insertion of anything into the well (e.g. HDPE tubing, HydraSleeve bailer, etc.);
  - 55 - Insertion of silicon tubing into the peristaltic pump;
  - 56 - Completion of monitor well purging, prior to sample collection;
  - 57 - Handling of any quality assurance/quality control samples including field blanks and  
58 equipment blanks; and,
  - 59 - After the handling of any non-dedicated sampling equipment, contact with non-  
60 decontaminated surfaces, or when judged necessary by field personnel.

### 61 **Sample Containers**

- 62 • Samples should be collected in polypropylene or HDPE bottles fitted with an unlined (no  
63 Teflon®), polypropylene HDPE screw cap. This is an especially important point as many  
64 laboratories utilize Teflon-lined bottles.
- 65 • Container labels will be completed using pen (**NO MARKERS**) after the caps have been  
66 placed back on each bottle.

- 67 • Glass containers should also be avoided due to potential loss of analyte through  
68 adsorption.

### 69 **Wet Weather**

- 70 • Field sampling occurring during wet weather (e.g., rainfall and snowfall) should be  
71 conducted while wearing appropriate clothing that will not pose a risk for cross-  
72 contamination. Teams should avoid synthetic gear that has been treated with water-  
73 repellent finishes containing PFCs. Use rain gear made from polyurethane and wax-  
74 coated materials.

### 75 **Equipment Decontamination**

76 For GW sampling, it is highly recommended that disposable equipment be utilized. However, if  
77 equipment re-use is performed, field sampling equipment, including oil/water interface meters  
78 and water level indicators, that are utilized at each sample location will require cleaning  
79 between uses. Alconox® and Liquinox® soap is acceptable for use since the Material Safety  
80 Data Sheets do not list fluoro-surfactants as an ingredient. However, **Decon 90 must not be**  
81 **used** during decontamination activities. Water used for the decontamination of sampling  
82 equipment will be laboratory certified “PFC-free” water.

### 83 **Personnel Hygiene**

- 84 • Field personnel should not use cosmetics, moisturizers, hand cream, or other related  
85 products as part of their personal cleaning/showering routine on the morning of a  
86 sampling event, as these products may contain surfactants and represent a potential  
87 source of PFCs.
- 88 • Many manufactured sunblock and insect repellents contain PFCs and should not be  
89 brought or used on-site. Sunblock and insect repellents that are used on-site should  
90 consist of 100% natural ingredients.

### 91 **Food Considerations**

- 92 • No food or drink shall be brought on-site, with the exception of bottled water and  
93 hydration drinks (i.e., Gatorade® and Powerade®).

### 94 **Blanks**

- 95 • Utilization of blanks is a good quality check to monitor and control the effects of  
96 contamination. Trip blanks and field blanks are recommended.

### 97 **REFERENCES**

- 98 • Transport Canada, 2013. *Perfluorochemical (PFC) Field Sampling Protocol*. May.

99 • Delta Consultants, 2010. *Report of Investigation Activities at Select Firefighting Foam*  
100 *Training Areas and Foam Discharge Sites in Minnesota*. February.  
101 • MPCA, 2008. *Closed Landfill Program Sampling Protocol for Monitoring Wells*. October.  
102 • Oregon State University, 2015. *COLLECTION AND HANDLING OF SAMPLES FOR*  
103 *FLUORO-CHEMICAL ANALYSIS*. July.  
104 • EPA, 2009. EPA Document #: EPA/600/R-08/092, *METHOD 537. DETERMINATION OF*  
105 *SELECTED PERFLUORINATED ALKYL ACIDS IN DRINKING WATER BY SOLID PHASE*  
106 *EXTRACTION AND LIQUID CHROMATOGRAPHY/TANDEM MASS SPECTROMETRY*  
107 *(LC/MS/MS)*. Version 1.1. September  
108  
109