



VERMONT DEPARTMENT OF HEALTH LABORATORY
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Mailing: PO Box 1125, Burlington, VT 05402-1125
1-800-660-9997 (VT only) or 1-802-338-4724

Water Test Order Form Supplement
[Supplement and Kit Descriptions are Subject to Change]

Test Kit Descriptions 2017
Effective November 2017

IOC's
INORGANIC CHEMICALS

Kit IA, Kit IB and Kit C samples are accepted Monday – Friday. Kit C, nitrate and nitrite samples need to be cooled and should be received **within 48 hours of sampling** - the temperature of the sample when received at the laboratory should be cooling or cooled to less than ~ 42 degrees Fahrenheit (or 6 degrees Celsius), but not frozen. **Please note that testing for Sulfate is being offered in Kit AN and also as an individual test. Estimated turnaround time for test results is 18 calendar days from the time of sample receipt.**

TRACE METALS AND FLUORIDE -KIT IA
(Regulated Water Systems and Homeowners)

Cost: \$125

- | | |
|--------------|----------------|
| 1. Antimony | 11. Lead |
| 2. Arsenic | 12. Manganese |
| 3. Barium | 13. Mercury |
| 4. Beryllium | 14. Molybdenum |
| 5. Cadmium | 15. Nickel |
| 6. Chromium | 16. Selenium |
| 7. Cobalt | 17. Thallium |
| 8. Copper | 18. Uranium |
| 9. Fluoride | 19. Vanadium |
| 10. Iron | 20. Zinc |

For waters with high turbidity: Mercury may not be tested.

LEAD/COPPER- Kit IB (Regulated Water Systems and Homeowners)

Cost: \$ 20

1. Lead
2. Copper

INORGANIC CHEMICALS- KIT C (Homeowner)

Cost: \$ 100

- | | |
|-------------|------------------------|
| 1. Arsenic | 7. Lead |
| 2. Chloride | 8. Manganese |
| 3. Copper | 9. Nitrate and Nitrite |
| 4. Fluoride | 10. Sodium |
| 5. Hardness | 11. Uranium |
| 6. Iron | |

**IOC's
INORGANIC CHEMICALS (Cont.)**

INORGANIC CHEMICALS- KIT ID, N3N2 (Nitrate and Nitrite) and Kit AN samples are accepted Monday – Thursday, 7:45 a.m. – 4:30 p.m. and Friday, 7:45 a.m. – 12 noon. Kits ID, N3N2 need to be cooled - the temperature of the sample when received at the laboratory should be cooling or cooled to less than ~ 42 degrees Fahrenheit (or 6 degrees Celsius), but not frozen (SEE TABLE BELOW FOR MORE INFORMATION). Samples must be received within 24-48 hours of sampling for odor, nitrate and nitrite tests [Please see table below]. Note: Oxidizers such as chlorine interfere with testing for Nitrite.

INORGANIC CHEMICALS- KIT ID Required for some permits and water supplies. Cost: \$ 90

- | | |
|--------------|--------------|
| 1. Arsenic | 6. Nitrate |
| 2. Chloride | 7. Odor |
| 3. Iron | 8. pH |
| 4. Manganese | 9. Sodium |
| 5. Nitrite | 10. Uranium |
| | 11. Fluoride |

Coliform testing not included in this kit.

Note: For Kit ID or Kit C, sulfate can be added for an additional \$15.00.

Kits for Anions:

KIT: N₃N₂ – Nitrate and Nitrite. Nitrate and Nitrite required for some permits and water supplies. Cost: \$ 24

Kit: AN – Sulfate, Fluoride, Chloride, Nitrate, Nitrite. Cost: \$ 50

Child Care and School Water Testing

KIT DC - LEAD FIRST DRAW or LEAD FLUSH: (Public and Private Water Systems)

Tests for lead. Cost: \$12

KIT DC – INORGANIC (Private Water systems): Tests for arsenic, uranium, nitrite, manganese, nitrate and fluoride. Cost: \$ 74

KIT DC – COLIFORM (Private Water systems): Tests for total coliform and *E. coli*. Cost: \$14

Testing for the inorganic chemicals listed below is available upon request.

| <i>Test</i> | <u>Sample to be Received Within 48 hrs of Sampling?</u> | <u>Cool to 6° C?</u> | <u>Cost</u> | <i>Test</i> | <u>Sample to be Received Within 48 hrs of Sampling?</u> | <u>Cool to 6° C?</u> | <u>Cost</u> |
|---------------------------------|---|----------------------|-------------|-------------------------------|---|----------------------|-------------|
| <i>Alkalinity</i> | yes | X | \$12.00 | <i>Lead</i> | | | \$12.00 |
| <i>Antimony</i> | | | \$12.00 | <i>Manganese</i> | | | \$12.00 |
| <i>Arsenic</i> | | | \$12.00 | <i>Mercury</i> | | | \$25.00 |
| <i>Barium</i> | | | \$12.00 | <i>Nickel</i> | | | \$12.00 |
| <i>Beryllium</i> | | | \$12.00 | <i>Nitrate</i> | yes | X | \$12.00 |
| <i>Cadmium</i> | | | \$12.00 | <i>Nitrite</i> | yes | X | \$12.00 |
| <i>Calcium, Titration</i> | | | \$12.00 | <i>Odor</i> | 24 HOURS | X | \$10.00 |
| <i>Chloride</i> | | | \$12.00 | <i>pH</i> | yes | | \$10.00 |
| <i>Chlorine Residual, Free</i> | yes | | \$12.00 | <i>Selenium</i> | | | \$12.00 |
| <i>Chlorine Residual, Total</i> | yes | | \$12.00 | <i>Sodium</i> | | | \$12.00 |
| <i>Chromium</i> | | | \$12.00 | <i>Sulfate</i> | | | \$15.00 |
| <i>Conductivity</i> | yes | X | \$12.00 | <i>Thallium</i> | | | \$12.00 |
| <i>Copper</i> | | | \$12.00 | <i>Total Dissolved Solids</i> | | X | \$12.00 |
| <i>Fluoride</i> | | | \$12.00 | <i>Turbidity</i> | yes | X | \$12.00 |
| <i>Hardness</i> | | | \$12.00 | <i>Uranium (Kit RU)</i> | | | \$25.00 |
| <i>Iron</i> | | | \$12.00 | <i>Zinc</i> | | | \$12.00 |

ORGANIC CHEMICAL TESTING

VOC'S VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANIC CHEMICALS- KIT OA (EPA Method 524.2)

Cost: \$120

NOTE: Kit OA tests for all regulated and unregulated VOC's.

VOC samples must be delivered or mailed to the laboratory and received Monday – Friday within 48 hours of sampling. Please keep samples cold. Estimated turnaround time for sample results is 21 calendar days from the time of sample receipt.

| | | | |
|----|--------------------------|----|--------------------------------------|
| 1 | Methyl tert-butyl ether | 30 | 2,2-Dichloropropane |
| 2 | Benzene | 31 | 1,3-Dichloropropane |
| 3 | Bromobenzene | 32 | 1,1-Dichloropropene |
| 4 | Bromochloromethane | 33 | cis-1,3-Dichloropropene |
| 5 | Bromodichloromethane | 34 | trans-1,3-Dichloropropene |
| 6 | Bromoform | 35 | Ethylbenzene |
| 7 | Bromomethane | 36 | Fluorotrichloromethane |
| 8 | n-Butylbenzene | 37 | Hexachlorobutadiene |
| 9 | sec-Butylbenzene | 38 | Isopropylbenzene |
| 10 | tert-Butylbenzene | 39 | p-Isopropyltoluene |
| 11 | Carbon tetrachloride | 40 | Methylene chloride (Dichloromethane) |
| 12 | Chlorobenzene | 41 | Naphthalene |
| 13 | Chlorodibromomethane | 42 | n-Propylbenzene |
| 14 | Chloroethane | 43 | Styrene |
| 15 | Chloroform | 44 | 1,1,1,2-Tetrachloroethane |
| 16 | Chloromethane | 45 | 1,1,2,2-Tetrachloroethane |
| 17 | 2-Chlorotoluene | 46 | Tetrachloroethylene |
| 18 | 4-Chlorotoluene | 47 | Toluene |
| 19 | Dibromomethane | 48 | 1,2,3-Trichlorobenzene |
| 20 | 1,3-Dichlorobenzene | 49 | 1,2,4-Trichlorobenzene |
| 21 | 1,2-Dichlorobenzene | 50 | 1,1,1-Trichloroethane |
| 22 | 1,4-Dichlorobenzene | 51 | 1,1,2-Trichloroethane |
| 23 | Dichlorodifluoromethane | 52 | Trichloroethylene |
| 24 | 1,1-Dichloroethane | 53 | 1,2,3-Trichloropropane |
| 25 | 1,2-Dichloroethane | 54 | 1,2,3-Trimethylbenzene |
| 26 | 1,1-Dichloroethene | 55 | 1,2,4-Trimethylbenzene |
| 27 | trans-1,2-Dichloroethene | 56 | 1,3,5-Trimethylbenzene |
| 28 | cis-1,2-Dichloroethene | 57 | Vinyl chloride |
| 29 | 1,2-Dichloropropane | 58 | m+p-Xylene |
| | | 59 | o-Xylene |

ORGANIC CHEMICAL TESTING (cont.)

Disinfection By-Products

TRIHALOMETHANES-KIT OB (EPA METHOD 524.2)

Cost: \$120

Trihalomethane samples must be delivered or mailed to the laboratory and received Monday – Friday within 48 hours of sampling. Please keep samples cold. Estimated turnaround time for sample results is 21 calendar days from the time of sample receipt.
Note: HALOACETIC-KIT OK may need to be sampled at the same time and at the same location as THM sampling occurs.

1. Chloroform
2. Dibromochloromethane
3. Bromodichloromethane
4. Bromoform

Note: Reported as total trihalomethanes.

HALOACETIC ACIDS - Kit OK (EPA METHOD 552.2)

Cost: \$ 150

Haloacetic Acid (Kit OK). Please order approximately one month before compliance monitoring is needed. Subject to laboratory capacity.
Note: TRIHALOMETHANES-KIT OB may need to be sampled at the same time and at the same location as haloacetic acid sampling occurs.
Haloacetic samples must be delivered or mailed to the laboratory and received Monday – Friday within 48 hours of sampling. Please keep samples cold. Estimated turnaround time for sample results is 21 calendar days from the time of sample receipt.

1. Chloroacetic Acid
2. Bromoacetic Acid
3. Dichloroacetic Acid
4. Trichloroacetic Acid
5. Dibromoacetic Acid

Note: Also reported as total Haloacetic acids.

Samples will be accepted the first full week of the month in November through April and accepted anytime May through October. Kits will be sent out about one week prior to schedule sample receipt dates unless alternate arrangements are made.

ORGANIC CHEMICAL TESTING (cont.)

SOC's
SYNTHETIC ORGANIC CHEMICALS
Kits OL, OE, OH and OG

Please order approximately one month before compliance monitoring is needed.
Samples will be accepted the second full week of each month. The kits must be ordered in advance and will be sent out about 1 week prior to schedule sample receipt dates.
SOC Kits OE, OG, OH samples must be delivered or mailed to the laboratory and received Monday – Friday within 48 hours of sampling. **Please keep samples cold.** Estimated turnaround time for sample results is 21 calendar days from the time of sample receipt.

HERBICIDES in WATER – KIT OE (EPA Method 515.4)

Cost: \$200

1. Dalpon
2. Dicamba
3. Dinoseb
4. Pentachlorophenol
5. Picloram
6. 2,4-D
7. 2,4,5-TP (silvex)

CARBAMATE PESTICIDES – KIT OG (EPA METHOD 531.2)

Cost: \$100

- | | |
|-----------------------|-------------------------|
| 1. Aldicarb | 6. Aldicarb sulfone |
| 2. Aldicarb Sulfoxide | 7. Baygon (Propoxur) |
| 3. Carbaryl | 8. Carbofuran |
| 4. Methiocarb | 9. Methomyl |
| 5. Oxamyl (Vydate) | 10. 3-Hydroxycarbofuran |

EDB/DBCP-KIT OH (EPA METHOD 504.1)

Cost: \$ 80

1. Ethylene dibromide (EDB)
2. Dibromochloropropane (DBCP)

Pentachlorophenol-KIT OP (EPA METHOD 515.4)

Cost: \$ 75

1. Pentachlorophenol

ORGANIC CHEMICAL TESTING (cont.)

SOC's
SYNTHETIC ORGANIC CHEMICALS (cont.)

Semi volatile Chemicals and Pesticides - Kit OL (EPA METHOD 525.2)

Cost: \$250

Please order approximately one month before compliance monitoring is needed.

Samples will be accepted the second full week of each month. The kits must be ordered in advance and will be sent out about 1 week prior to schedule sample receipt dates.

SOC Kit OL samples must be delivered or mailed to the laboratory and received Monday – Friday within 24 hours of sampling. Please keep samples cold. Estimated turnaround time for sample results is 21 calendar days from the time of sample receipt.

Compounds in method:

Aldrin
alpha-Chlordane
gamma-BHC (lindane)
Heptachlor
Methoxychlor
Simazine
Bis-(2-ethylhexyl) phthalate
Hexachlorocyclopentadiene
2,4,5-Trichlorobiphenyl
2,2',3',4,6-Pentachlorobiphenyl
Benzo[a]pyrene
Propachlor
Metolachlor
Dieldrin

di-n-Butyl phthalate
Dimethyl phthalate
2,3-Dichlorobiphenyl
2,2',3,3',4,4',6-Heptachlorobiphenyl
Anthracene
Benz[b]fluoranthene
Benzo[ghi]perylene
Dibenz[a,h]anthracene
Indeno[1,2,3-cd]pyrene
Pyrene

2,4-Dinitrotoluene
Acetochlor
EPTC (Torbin, Stauffer, R1608)
DCPA (Dacthal)

Alachlor
Atrazine
gamma-Chlordane
Endrin
Heptachlor epoxide-isomer B
trans-Nonachlor
Bis-(2-ethylhexyl) adipate
Hexachlorobenzene
Pentachlorophenol
2,2',4,4'-Tetrachlorobiphenyl
2,2',3,3',4,5',6,6'-Octachlorobiphenyl
Toxaphene
Metribuzin
Butachlor
Total chlordane

Butyl benzyl phthalate
Diethyl phthalate
2-Chlorobiphenyl
2,2',4,4',5,6'-Hexachlorobiphenyl
Acenaphthylene
Benz[a]anthracene
Benz[k]fluoranthene
Chrysene
Fluorene
Phenanthrene

2,6-Dinitrotoluene
4,4'-DDE (Dilene, Rhothanel)
Molinate
Terbacil

RADIONUCLIDES

Samples are accepted Monday – Friday within 5 days of sampling, * except Kit RC, which are accepted Monday – Thursday, 7:45 a.m. – 4:30 p.m. and Friday, 7:45 a.m. – 3:30 p.m and must be received within 48 hours of collection. Estimated turnaround times are listed below for each method.

WATER

GROSS ALPHA IN WATER- KIT RA (EPA METHOD 900.0 or EERF 00-02)

COST: \$ 45

Test for gross alpha in water.

[Turnaround time – approximately 14 calendar days]

***RADON-222- KIT RC (SM 7500 Rn)**

COST: \$ 25

Test for radon-222 in water.

[Turnaround time – approximately 7-10 calendar days]

URANIUM IN WATER – KIT RU (EPA METHOD 200.8)

COST: \$ 25

Test for uranium in water reported as mass.

[Turnaround time – approximately 21 calendar days]

AIR

RADON IN AIR-KIT RF (EPA METHOD 402-R-92-004)

COST: \$ 50

Test for radon-222 in air – 2 to 7-day sample.

[Turnaround time – approximately 7 calendar days]

It is recommended that two testing devices be placed side by side when conducting short term radon in air testing. Kit RF is configured this way.

RADON IN AIR-KIT RG (EPA METHOD 402-R-92-004)

COST: \$ 25

Test for radon- 222 in air – 1 to 3-month sample.

[Turnaround time – approximately 7 calendar days]

RADON IN AIR-KIT RH (EPA METHOD 402-R-92-004)

COST: \$ 25

Test for radon-222 in air – 3 to 12-month sample.

[Turnaround time – approximately 7 calendar days]

MICROBIOLOGICAL TESTING

Samples are accepted Monday – Friday (7:45 a.m. – 4:30 p.m.) within 30 hours of sampling. Please keep samples cool.

| | |
|--|-------------|
| TOTAL COLIFORM BACTERIA AND <i>E. coli</i> - Presence/Absence - <u>KIT A</u> (Homeowner) | COST: \$ 14 |
| TOTAL COLIFORM BACTERIA AND <i>E. coli</i> - Presence/Absence - <u>KIT AA</u> (Regulated Water Systems) | COST: \$ 14 |
| ENUMERATION OF TOTAL COLIFORM AND <i>E. coli</i> in drinking water - <u>KIT NU</u> | COST: \$ 15 |
| IRRIGATION WATER- <i>E. coli</i> - <u>KIT AG</u> | COST: \$ 15 |
| RECREATIONAL WATER- <i>E. coli</i> - <u>KIT SW</u> | COST: \$ 15 |
| TOTAL <i>E. coli</i> COUNT from SOURCE WATER (Regulated Systems only)- <u>KIT LT</u> | COST: \$ 15 |

SPECIAL REQUEST: HETEROTROPHIC PLATE COUNT- KIT HPC COST: \$ 15

Samples are only accepted Monday – Thursday (7:45 a.m. – 3:00 p.m) and within 24 hours of sampling. Please keep the samples cool. Estimated turnaround time is up to 4 calendar days.

GENERAL INFORMATION

Sampling instructions and sample acceptance criteria can be found at the VDH website, click on www.healthvermont.gov, Public Health Laboratory.

For a complete listing of laboratories certified within the state of Vermont, please contact Vermont Department of Health Laboratory at (800) 660-9997 in state or (802) 338-4724 or the list can be found at the VDH website, click on www.healthvermont.gov, Public Health Laboratory, Lab Certification or Approval.

For public water supply questions please call the Department of Environmental Conservation, Drinking Water and Groundwater Protection Division, 802-828-1535.

Records relating to water testing and radon in air are public. Public records may be used for statistical purposes, and may be released upon request in writing, pursuant to Vermont access to public document law (1 VSA § 315 – 320).