VERMONT
DEPARTMENT OF HEALTH

# Water and Radon Test Kit Descriptions

**September 2023**

The Vermont Department of Health Laboratory (VDH lab) tests drinking and environmental water as well as radon in the air. Drinking water analyses are performed using EPA-approved methods in accordance with the lab's NELAP accreditation.

## Sending in Your Samples

Water samples should be collected the same day that they will be returned to the laboratory. Water samples can be submitted to the laboratory in 3 ways:

1. **Bring the sample to the Laboratory** at 359 South Park Drive, Colchester, VT from 7:45 am – 4:00 pm, Monday – Thursday. On Friday, samples are accepted from 7:45 am – 3:30 pm, with some exceptions noted.
2. **Bring the sample to the nearest Office of Local Health** on Monday – Thursday before the pickup time, typically in the morning. Pickup times are different for each office, and can be found here: Drinking Water Drop-Off Program (healthvermont.gov). Samples are not accepted on Fridays, holidays, or the day before a holiday.
3. **Mail the sample** – with USPS to PO Box 1125, Burlington, VT 05402-1125, or with FedEx or UPS to 359 South Park Drive, Colchester, VT 05446. To ensure timely arrival, refer to sample collection instructions.

## Water Testing Packages

The packages below should cover most testing needs.

| Name | Description | Cost |
|---|---|---|
| **New Well/Spring Owner Package** | Meet the requirements of Tables A11-5 and A11-6 and satisfies most residential permit needs.<br>Kit A, Kit RA, Kit ID, and Lead | $161 |
| **Vermont Homeowner Testing Package (Well/Spring)** | Recommended for homeowners.<br>Kit A (bacteria, annually)<br>Kit RA (gross alpha, every 5 years)<br>Kit C (inorganic chemicals, every 5 years) | $159 |
| **Public Water- Residential Testing Package (Kit IB)** | Recommended for clients on municipal or town water.<br>Lead<br>Copper | $20 |

## Child Care and School Water Testing

School lead kits must be ordered through the Vermont Tap Inventory Management System. Find more information here: Testing for Lead in Drinking Water at Schools | Vermont Department of Health (healthvermont.gov)

| Kit | Description | Cost |
|---|---|---|
| **SL** | Lead first draw or lead flush for schools. | $12 |
| **DC-Lead** | Lead first draw or lead flush. Public and Private Water Systems | $12 |
| **DC-Coliform** | Total coliform bacteria and *E. Coli*, presence/absence. Private Water Systems | $14 |
| **DC - Inorganic** | Tests for Arsenic, Uranium, Manganese, Nitrate, Nitrite and Fluoride. Private Water Systems | $74 |

## Microbiological Testing

Samples must arrive at the laboratory within 30 hours of sample collection and should be kept cool. Test results are usually available 1 business day after the lab receives the sample. In cases of severe discoloration, Colisure testing may take 2 business days.

| Kit | Description | Cost |
|---|---|---|
| **A** | Total coliform bacteria and *E. Coli*, presence/absence. Homeowner, Drinking Water | $14 |
| **AA** | Total coliform bacteria and *E. Coli*, presence/absence. Regulated Water Systems | $14 |
| **NU** | Enumeration of total coliform and *E. Coli* in drinking water | $15 |
| **AG** | E. Coli in Irrigation Water, Enumeration | $15 |
| **SW** | E. Coli in Recreational Water, Enumeration | $15 |

Drinking water microbiology testing is performed using Colilert (SM 9223 B), Colilert-18 (SM 9223 B), or Colisure.

# Water and Radon Test Kit Descriptions



## Inorganic Chemical Testing

Most kits must be kept cold at no more than 42 °F (6 °C) and received within 45 hours of sample collection. Test results are usually available 18 calendar days after the lab receives the sample.

| **Kit IA** | **Trace Metals and Fluoride** |
|---|---|
| Cost: $125 | Regulated water systems and homeowners |

| | | | |
|---|---|---|---|
| Antimony | Chromium | Lead | Selenium |
| Arsenic | Cobalt | Manganese | Thallium |
| Barium | Copper | Mercury* | Uranium |
| Beryllium | Fluoride | Molybdenum | Vanadium |
| Cadmium | Iron | Nickel | Zinc |

*Mercury cannot be tested if the water is cloudy.

| **Kit IB** | **Lead and Copper** |
|---|---|
| Cost: $20 | Regulated water systems and homeowners on municipal water systems |

| **Kit C** | **Inorganic Chemicals** |
|---|---|
| Cost: $100 | Recommended for homeowners every 5 years. Keep cold and return within 45 hours of collection. |

| | | | |
|---|---|---|---|
| Arsenic | Fluoride | Lead (flush) | Lead (first draw) |
| Chloride | Hardness | Sodium | Nitrate + Nitrite |
| Copper | Iron | Manganese | Uranium |

| **Kit ID** | **Inorganic Chemicals** |
|---|---|
| Cost: $90 | Required for new groundwater sources and some permits. Included in New Well/Spring Testing package.<br>Keep cold and return within 22 hours of collection.<br>**Not accepted after noon on Fridays.** |

| | | | | |
|---|---|---|---|---|
| Arsenic | Fluoride | Odor | Uranium | Iron |
| Chloride | Hardness | Sodium | Nitrate | pH |

## Inorganic Chemical Testing (continued)

Most kits must be kept cold at no more than 42 °F (6 °C) and received within 45 hours of sample collection. Test results are usually available 18 calendar days after the lab receives the sample.

| Kit N3N2 | Nitrate and Nitrite |
|---|---|
| Cost: $24 | Keep cold and return within 45 hours. |

| Kit AN | Anions |
|---|---|
| Cost: $50 | Keep cold and return within 45 hours. |

Chloride
Fluoride
Sulfate
Nitrate
Nitrite

**A la carte offerings:**

| Cost | Individual Inorganic Analyte | Method |
|---|---|---|
| $12 | Alkalinity † | SM 2320 B |
| $12 | Antimony | EPA 200.8 |
| $12 | Arsenic | EPA 200.8 |
| $12 | Barium | EPA 200.8 |
| $12 | Beryllium | EPA 200.8 |
| $12 | Cadmium | EPA 200.8 |
| $12 | Chloride | EPA 300.0 |
| $12 | Chlorine residual, free ‡ | Hach 8021 |
| $12 | Chlorine residual, total ‡ | Hach 8167 |
| $12 | Chromium | EPA 200.8 |
| $12 | Conductivity Δ | SM 2510 B |
| $12 | Cobalt | EPA 200.8 |

# Water and Radon Test Kit Descriptions



| Cost | Individual Inorganic Analyte | Method |
|---|---|---|
| $12 | Copper | EPA 200.8 |
| $12 | Fluoride | EPA 300.0 or LACHAT 10-109-12-2-A |
| $12 | Hardness, total | SM 2340 B |
| $12 | Iron | EPA 200.7 |
| $12 | Lead (flush or first draw) | EPA 200.8 |
| $12 | Manganese | EPA 200.8 |
| $25 | Mercury * | EPA 200.8 |
| $12 | Molybdenum | EPA 200.8 |
| $12 | Nickel | EPA 200.8 |
| $12 | Nitrate † | EPA 300.0 |
| $12 | Nitrite † | EPA 300.0 |
| $10 | Odor ‡ | SM 2150 B |
| $10 | pH ‡ | EPA 150.3 |
| $12 | Selenium | EPA 200.8 |
| $12 | Sodium | EPA 200.7 |
| $15 | Sulfate Δ | EPA 300.0 |
| $12 | Thallium | EPA 200.8 |
| $12 | Total dissolved solids Δ | SM 2540 C |
| $12 | Turbidity † | EPA 180.1 |
| $25 | Uranium (Kit RU) | EPA 200.8 |
| $12 | Vanadium | EPA 200.8 |
| $12 | Zinc | EPA 200.8 |

* Mercury cannot be tested if the water is cloudy.

† Sample MUST be chilled and received at the laboratory within 45 hours.

‡ Sample MUST be received at the laboratory within 22 hours.

Δ Sample MUST be chilled.

## Radionuclide Testing

Samples are accepted Monday – Friday, 7:45 am – 3:30 pm.

Kit RC must be received within 48 hours of sample collection. Estimated turnaround times are listed below.

**Water test kits:**

| Kit | Description | Cost | Method |
|---|---|---|---|
| **RA** | Gross Alpha<br>14 calendar day turnaround time | $45 | EPA 00-02 |
| **RC** | Radon-222 in Water<br>10 calendar day turnaround time | $25 | SM 7500-Rn |
| **RU** | Uranium by mass<br>21 calendar day turnaround time | $25 | EPA 200.8 |

**Air test kits:**

Turnaround time 7 calendar days. Method EPA 402-R-92-004.

| Kit | Description | Exposure Time | Cost |
|---|---|---|---|
| **RF** | Radon in Air – Short Term | 2 – 7 days | $50 |
| **RG** | Radon in Air – Medium Term | 1 – 3 months | $25 |
| **RH** | Radon in Air – Long Term | 3 – 12 months | $25 |

## Organic Chemical Testing

Kits must be kept cold at no more than 42 °F (6 °C) and received within 48 hours of sample collection. Test results are usually available 21 calendar days after the lab receives the sample.

| **Kit OA** | **Volatile Organic Compounds** | EPA 524.2 |
|---|---|---|
| Cost: $120 | Regulated and unregulated VOCs | |

Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
n-butylbenzene
sec-butylbenzene
tert-butylbenzene
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
2-chlorotoluene
4-chlorotoluene
Dibromomethane
1,3-dichlorobenzene
1,2-dichlorobenzene
1,4-dichlorobenzene
Dichlorodifluoromethane
1,1-dichloroethane
1,2-dichloroethane
1,1-dichloroethene
cis-1,2-dichloroethene
trans-1,2-dichloroethene
1,2-dichloropropane
1,3-dichloropropane
2,2-dichloropropane
1,1-dichloropropene
cis-1,3-dichloropropene
trans-1,3-dichloropropene
Ethylbenzene
Fluorotrichloromethane
Hexachlorobutadiene
Isopropylbenzene
P-isopropyltoluene
Methylene chloride
Methyl tert-butyl ether
Naphthalene
n-propylbenzene
Styrene
1,1,1,2-tetrachloroethane
1,1,2,2-tetrachloroethane
Tetrachloroethylene
Toluene
1,2,3-trichlorobenzene
1,2,4-trichlorobenzene
1,1,1-trichloroethane
1,1,2-trichloroethane
Trichloroethylene
1,2,3-trichloropropane
1,2,3-trimethylbenzene
1,2,4-trimethylbenzene
1,3,5-trimethylbenzene
Vinyl chloride
m+p-xylene
o-xylene

## Disinfection By-Products

Kits must be kept cold at no more than 42 °F (6 °C) and received within 48 hours of sample collection. Test results are usually available 21 calendar days after the lab receives the sample.

Regulatory haloacetic acids and trihalomethane samples may need to be sampled at the same time and at the same location.

| **Kit OB** | **Trihalomethanes** | EPA 524.2 |
|---|---|---|
| Cost: $120 | Reported as total trihalomethanes | |

Chloroform
Bromoform
Dibromochloromethane
Bromodichloromethane

| **Kit OK** | **Haloacetic Acids** | EPA 552.2 |
|---|---|---|
| Cost: $150 | | |

Bromoacetic Acid
Bromochloroacetic Acid
Chloroacetic Acid
Dichloroacetic Acid
Dibromoacetic acid
Trichloroacetic Acid
Total Haloacetic Acids (HAA5)

## Synthetic Organic Chemicals – SOCs

Kits must be kept cold at no more than 42 °F (6 °C) and received within 48 hours of sample collection. Test results are usually available 21 calendar days after the lab receives the sample.

| **Kit OE** | **Herbicides in Water** | EPA 515.4 |
|---|---|---|
| Cost: $200 | | |

Dalapon
Picloram
2,4,5-TP (silvex)
Dicamba
Pentachlorophenol
Dinoseb
2,4-D

| **Kit OG** | **Carbamate Pesticides** | EPA 531.2 |
|---|---|---|
| Cost: $100 | | |

Aldicarb
Methiocarb
Baygon (Propoxur)
3-Hydroxycarbofuran
Aldicarb sulfoxide
Oxamyl (Vydate)
Carbofuran
Carbaryl
Aldicarb sulfone
Methomyl

| **Kit OH** | **EDB/DBCP/123-TCP** | EPA 504.1 |
|---|---|---|
| Cost: $80 | | |

1,2-Dibromoethane (EDB)
1,2-Dibromo-3-chloropropane (DBCP)
1,2,3-Trichloropropane (123-TCP)

## Synthetic Organic Chemicals (continued) – SOCs

Kits must be kept cold at no more than 42 °F (6 °C) and received within 48 hours of sample collection. Test results are usually available 21 calendar days after the lab receives the sample.

| Kit OL | Semivolatile Organic Compounds | EPA 525.2 |
|---|---|---|
| Cost: $250 | Semivolatile chemicals and pesticides | |

Acenaphthylene
Alachlor
Aldrin
alpha-Chlordane
Atrazine
Anthracene
Bis-(2-ethylhexyl) adipate
Bis(2-ethylhexyl) phthalate
Benz[a]anthracene
Benz[b]fluoranthene
Benz[k]fluoranthene
Benzo[a]pyrene
Benzo[ghi]perylene
Butyl benzyl phthalate
Dibenz[a,h]anthracene
Dieldrin
Diethyl phthalate
2,3-Dichlorobiphenyl
Dimethyl phthalate
di-n-Butyl phthalate
Endrin
Fluorene
gamma-BHC (lindane)
gamma-Chlordane
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
2,2',4,4',5,6-Hexachlorobiphenyl
Hexachlorocyclopentadiene
Indeno[1,2,3-cd]pyrene
Methoxychlor
Metolachlor
2,2',3,3',4,5',6,6'-Octachlorobiphenyl
2,2',3',4,6-Pentachlorobiphenyl
Pentachlorophenol
Phenanthrene
Pyrene
Simazine
Total Chlordane
trans-Nonachlor
2,4,5-Trichlorobiphenyl
Toxaphene

## Additional Information

Records relating to water testing and radon testing 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).

Instruction Sheets and Drinking Water Sample Acceptance Policy can be found on our website: healthvermont.gov/lab/forms#water.

Public water systems are regulated by the Vermont Department of Environmental Conservation. Learn more at dec.vermont.gov/water/drinking-water.

Private wells and springs should be tested regularly. Learn more at www.healthvermont.gov/water/testing.

For information on drinking water contaminants and treatment options, visit www.healthvermont.gov/water-a-z.

Find information on bacteria and radon in the environment at www.healthvermont.gov/lab/environmental.