

Community-Focused Exposure and Risk Screening Tool (C-FERST)



Tabular Overview of Environmental
Measurement Methods

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Table I. Example of screening measurement methods: Example of commercially available test kits (Mention of trade names or commercial products does not constitute endorsement or recommendation of use.)

Analyte(s)	Estimated Price Range	Brand	Source
Indoor Air			
Mold and Bacteria Formaldehyde, Nitrogen Dioxide, Carbon Monoxide and Carbon Dioxide	\$ 69.95 for one; \$109.95 for two	EnviroCheck	http://www.healthgoods.com/Shopping/Home_Test_Kits/EnviroCheck_Indoor_Air_Quality_Test_Kit.asp
Ozone	\$14.95	Eco Badge® Ozone Detector Kit	http://ecobadge.com/Merchant5/merchant.mvc?Screen=SFNT&Store_Code=ecobadge or http://www.negativeiongenerators.com/ozonedetector.html or http://www.airpurifiersbestonline.com/site/1406502/product/Eco%20Badge%20Ozone%20Test%20Kit or http://www.honest-air-online.com/site/948704/product/HA-06-TK-2 or http://www.air-zone.com/detector.html
Toxic black mold, bacteria, and yeast	\$19.95	Enviro-Tester	http://www.envirotester.com/
Mold Spores Bacteria Fungus	\$13.95 per set	Comtech Research	http://www.vgdllc.com/dishes.htm
Water			
Phosphate Chlorine Ammonia Nitrogen Chloride	50 tests, \$71.90 50 tests, \$ 61.20 50 tests, \$48.50 50 for \$39.50	LaMotte	http://www.lamotte.com/pages/common/pdf/instruct/3590-02.pdf or http://www.benmeadows.com/search/LaMotte/9061/ or http://www.benmeadows.com/search/LaMotte/21495/
Bacteria Atrazine & Simazine Nitrate & Nitrite Iron, Chlorine Copper ,Lead	\$ 33.95 to 35.95	PurTest Home Water Analysis Test Kit	http://www.purtest.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/PurTest_Home_Water_Analysis_Test_Kit.asp or https://www.freshwatersystems.com/p-455-purtest-complete-home-water-test-kit.aspx?affiliateid=10050&qid=0
Bacteria Free Chlorine Nitrate, Nitrite Total Chlorine Iron Copper Sulfate Chloride Hydrogen Sulfide	\$24.45	ITS Complete Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Complete_Water_Test_Kit.asp or http://www.testing-kits.com/list-testing-kits.asp?txtsearchParamTxt=alkalinity&txtsearchParamType=ALL&txtsearchParamCat=9&txtsearchParamMan=ALL&txtsearchParamVen=ALL
Bacteria Lead Atrazine & Simazine	\$19.95	Watersafe All- In-One Water Analysis Test	http://www.discovertesting.com/?source=googleCPC&s_cid=299566559&gclid=CPO7pvadpplCFQTWsgod7kCRRg or http://www.healthgoods.com/Shopping/Home_Test_Kits/Watersafe_All_In_One_Wate

Nitrate Nitrite Chlorine		Kit	r_Test_Kit.asp
Lead	\$9.95	Watersafe Lead Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Watersafe_Lead_Water_Test_Kit.asp
Bacteria Ammonia Nitrate/Nitrite	\$9.45	ITS Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Bacteria_Nitrate_Nitrite_Water_Test_Kit.asp
Arsenic	\$25.95 for 2 arsenic tests	ITS Arsenic Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Arsenic_Water_Test_Kit.asp
Drinking/Tap Water			
bacteria, nitrites, and nitrates	\$14.95-\$19.95	PurTest Drinking Water Test Kit	http://www.purtest.com/
Trihalomethanes	\$ 449 for 100 tests	Hach	http://www.hach.com
Bacteria, atrazine & simazine; nitrate, nitrite iron chlorine copper lead	\$29.95*- \$59.95	PurTest Complete Water Test Kit	http://www.purtest.com/ or http://www.air-n-water.com/search.aspx?q=PurTest&SubmitI=Search or http://www.healthgoods.com/Shopping/Home_Test_Kits/PurTest_Home_Water_Analysis_Test_Kit.asp
Surfaces			
Mold	5 tests : \$34.95 10 tests: \$44.95 15 tests: \$54.95	MoldCheck™ Mold Test Kits	http://www.moldcheck.com/MoldCheckProveltp.php
Lead	8 tests:\$18.45 16 tests:\$34.95	Lead Check Swab Tests	http://www.leadcheck.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Lead_Paint_Testing.asp
Lead	\$27.95- 29.95, add \$4.50 for shipping.	Lead Detective Test	http://www.theleaddetective.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Lead_Paint_Testing.asp

Table 2. Example of quantitative screening methods: Instrument or laboratory analysis (Mention of trade names or commercial products does not constitute endorsement or recommendation of use)

Analyte(s)	Estimated Price Range	Brand	Source
Indoor Air			
Ozone	\$ 299- 329.99 + shipping; Monitor for ambient ozone detection. 0.02-0.14 PPM range. LED Readout.	Ambient Ozone Sensor	http://www.ozonesupplies.com/EZ-IX.html?gclid=CjXHWqr9pZICFR_bQAod-zloNQ or http://www.air-zone.com/detector.html
Mold	Test & lab fees price: 5 tests: \$34.95, 10 tests: \$44.95, 15 tests: \$54.95	MoldCheck™ Mold Test Kits	http://www.exit15.com/mold-check-airborne-sampling-kit-wlab-fees-p-1017.html
20 types of mold spores, pollen and dust	2 sets & lab fees- \$149.00	Air Check Home Mold Testing Kit	http://www.homemoldtestkit.com/store/index.php?main_page=product_info&products_id=5
mold and mildew	Test & lab fees: \$ 99.95	Mold screening kit	http://www.moldscreeningkit.com/moldkit.php
Allergens Fungi Formaldehyde	\$375.00 for the evalu-aire® Screen Test Kit	evalu-aire® Test Kits	http://www.pureaircontrols.com/ieqform.html or http://www.airpurifiersforhome.com/products/test_kits.htm
Radon	One test: \$ 9.95 3 tests: \$ 24.99 Includes lab fees	AirCheck test kits	https://securechek.com/DIY/index.html
Mold Spores Test Dander Test Carcinogenic Fibers Pollen Test Bacteria Test	Fee includes lab analysis for each separate test (add ons). Basic Home Quality Kit (dust & dust mites): \$30 Add-mold:\$45 Add-dander: \$45 Add-carcinogenic fibers (fiberglass, asbestos): \$33 Add-pollen: \$ 35 Add-bacteria: \$99	Green Nest Home Air Quality Tests	http://www.greennest.com/air-quality-test-kit.html

Radon	Test & lab fee: \$ 13.95	AccuStar Short-Term Activated Charcoal (AC) Radon in Air Test Kit	http://www.accustarlabs.com/
Water			
Ammonia Nitrogen, Calcium, Magnesium, Free CarbonDioxide, Chloride,ChlorineChromium(Chromate), Copper, Cyanide, Iron, Nitrate, Phosphorus (Phosphate), Sulfide	Several Instrumentation options ranging from \$164.35-\$234.50 and Model AM-22 Water Pollution Field Detection Kit \$516	LaMotte	http://www.lamotte.com/pages/common/pdf/instruct/5905-01.pdf or http://www.benmeadows.com/search/LaMotte/21053/
Option 1: total Coliform and E.Coli bacteria, 17 heavy metals, 5 inorganic chemicals, 5 physical factors, 4 trihalomethanes, and 44 volatile organic chemicals Pesticide Option includes all of the standard tests, plus 20 additional organic chemicals for pesticides, herbicides and PCB's	Watercheck Test Price: \$122.95 Watercheck with Pesticide Option Test -Price: \$152.95 ; (Lab analysis included)	WaterCheck Water Quality Tests	http://www.ntllabs.com/businesses/watertreatment/products.html or http://www.watercheck.biz/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Watercheck_Water_Quality_Test_Kit.asp
Radon	\$27.95 (lab included)	AccuStar Radon in Water Test	http://www.accustarlabs.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Accustar_Radon_Gas_Water_Test_Kit.asp
Drinking water/Tap water			
Radon	\$27.95 (lab included)	AccuStar Radon in Water Test	http://www.accustarlabs.com/
Trihalomethanes	\$3012 for portable spectrophotometer	Hach	http://www.hach.com
Free & total chlorine	\$352 pocket	Hach	http://www.hach.com

colorimeter			
Surfaces			
mold	Mold testing lab Price depends on sample & sampling media- Tape= \$50; Air= \$60, Bulk=\$100.00, e.g. 4 sq.in. of drywall, 1 sq.ft. of mold-suspect fiberglass	InspectApedia	http://www.inspect-ny.com/sickhouse/bulksamp.htm
Asbestos	\$20- \$37.99, Lab Fees & Shipping Included	Professional Asbestos Testing kit	http://prolabinc.com/instructions/asbestos.html or http://www.kaboodle.com/reviews/professional-asbestos-test-kit-as108

Table 3. EPA and other federal measurement methods tools

Source	Description	Web address
EPA Information		
EPA Method Collections	Forum of Environmental Measurements Provides contact information & methods related to: Air and Radiation; Solid Waste and Emergency Response; Sampling Methods; Water; Prevention, Pesticides, and Toxic Substances; Research and Development; Analytical and Sampling Method Sources	http://www.epa.gov/OSA/fem/methcollectns.htm
Manual of Manuals	Quick cross-reference of EPA methods by analyte	http://www.epa.gov/nerlcwww/methmans.html
EPA Technology Transfer Network, Ambient Monitoring Technology Information Center	Monitoring Programs, Monitoring methods, Documents and articles, Trends & Non-attainment, Regulations	http://www.epa.gov/ttnamti/
EPA Emissions Measurement Center Air	Emission Measurement Center (EMC) provides searchable information on test methods for measuring pollutants from smokestacks and other industrial sources. This site compiles the test methods available for emission measurement, and EMC staff provides technical assistance in the use and application of the methods.	http://www.epa.gov/ttn/emc/
Air EPA Technology Transfer Network: Ambient Monitoring Technology Information Center	Operated by EPA's Ambient Air Monitoring Group (AAMG). Information on ambient air quality monitoring programs, monitoring methods, relevant documents, air quality trends and nonattainment areas, and federal regulations related to ambient air quality monitoring	http://www.epa.gov/ttn/amtic/
EPA Clean Water Act Analytical Test Methods	Analytical methods that are approved not promulgated methods, alternative methods, updated methods.	http://www.epa.gov/waterscience/methods/
Safe Drinking Water Act Analytical Methods and Laboratory Certification	Information on approved analytical methods, drinking water programs and laboratory certification.	http://www.epa.gov/safewater/methods/
EPA Microbiology Home	EPA methods and information related to	http://www.epa.gov/nerlcwww/

page	bacteria, viruses and protozoans.	
ORD methods for water	Drinking and Marine water methods	http://www.epa.gov/nerlcwww/ordmeth.htm#marine
Whole Effluent Toxicity (WET) Page	Methods for measuring acute toxicity and short term chronic toxicity to freshwater and marine organisms, guidance documents and regulatory actions	http://www.epa.gov/waterscience/methods/wet/
Analytical Methods Developed by the Office of Ground Water and Drinking Water	Chemical methods for the determination of organic chemicals in drinking water.	http://www.epa.gov/safewater/methods/analyticalmethods_ogwdw.html
EPA Office of Solid Waste Test Methods	Information and guidance on analytical chemistry, testing methodologies, environmental sampling and monitoring, and quality assurance in support RCRA. SW-846 methods.	http://www.epa.gov/epaoswer/hazwaste/test/
New Test Methods On-line	new SW-846 methods are intended to be guidance methods which contain general information on how to perform an analytical procedure or technique which a laboratory can use as a basic starting point for generating its own detailed Standard Operating Procedure (SOP)	http://www.epa.gov/epaoswer/hazwaste/test/new-meth.htm
Superfund Analytical Services / Contract Laboratory Program	Provides information on EPA's Superfund Analytical Services/Contract Laboratory Program (CLP). Provides guidance, analyses, cost for the analyses, tools, and contacts.	http://www.epa.gov/oerrpage/superfund/programs/clp/index.htm
EPA Corrective Action Guidance Page	Guidance related to RCRA (e.g. regulated hazardous waste). Provides monitoring methods for groundwater & soil screening	http://www.epa.gov/epaoswer/hazwaste/ca/guidance.htm
Other Federal Information		
National Environmental Methods Index (NEMI) (includes EPA, USGS, NOAA and other partners)	Searchable methods database for regulatory and non-regulatory monitoring of water, sediment, air and tissues. User can compare the capabilities and relative costs of the methods.	http://www.nemi.gov/
NIOSH Manual of Analytical Methods (NMAM)	Searchable database provides methods for sampling and analysis of contaminants in workplace air, and blood and urine of exposed workers. Can search by	http://www.cdc.gov/niosh/nmam/

	chemical, CAS number, or method number	
Agency for Toxic Substances and Disease Registry (ASTDR)	Toxicological Profiles of specific chemicals which includes a link to the analytical method.	http://www.atsdr.cdc.gov/toxpro2.html
US Department of Labor, Occupational Safety & Health Administration	Searchable database for Sampling and Analytical Methods by analyte	http://www.osha.gov/dts/sltc/methods/toc.html

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