Table 4. Analytical methods used for the determination of organic, inorganic, and microbial constituents by the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) and additional contract laboratories.

[MI agar, supplemented nutrient agar in which coliforms (total and *Escherichia*) produce distinctly different fluorescence under ultraviolet lighting; UV, ultraviolet; VOCs, volatile organic compounds; δ, del notation expressed as per mil]

Analyte	Method	Laboratory	Citation(s)
VOCs	Purge and trap capillary gas chromatography-mass spectrometry	NWQL	Connor and others, 1998
Gasoline additives and (or) oxygenates	Heated purge and trap, gas chromatography-mass spectrometry	NWQL	Rose and Sandstrom, 2003
Pesticides and pesticide degradates	Solid-phase extraction and chromatography-mass spectrometry	NWQL	Sandstrom and others, 2001
Major and minor ions, trace elements and nutrients	Inductively coupled plasma mass spectrometry, graphite furnace atomic absorption, atomic fluorescence, and colorimetry	NWQL	Fishman and Friedman, 1989; Fishman, 1993; Garbarino, 1999; Garbarino and Damrau, 2001; Patton and Kryskalla, 2003
Dissolved organic carbon	UV-promoted persulfate oxidation and infrared spectrometry	NWQL	Brenton and Arnett, 1993
Radon-222	Liquid scintillation counting	NWQL	American Society for Testing and Materials, 1998a, b
Stable isotopes of water: δD and $\delta^{18}O$	Gaseous hydrogen and carbon dioxide-water equilibration	USGS Stable Isotope Laboratory, Reston, Virginia	Coplen and others, 1991; Coplen, 1994
Chromium, arsenic, and iron speciation	Ultraviolet visible (UV-VIS) spectrophotometry and atomic absorbance spectroscopy	USGS Trace Metal Laboratory, Boulder, Colorado	To and others, 1998; Ball and McCleskey, 2003; McCleskey and others, 2003
F-specific and somatic coliphage	Single-agar layer (SAL) and two-step enrichment methods	USGS Ohio Water Microbiology Laboratory	U.S. Environmental Protection Agency, 2001
Tritium	Electrolytic enrichment-liquid scintillation	USGS Stable Isotope and Tritium Laboratory, Menlo Park, California	Thatcher and others, 1977
Perchlorate and *N*-nitrosodimethylamine (NDMA)	Chromatography and mass spectrometry	Montgomery Watson-Harza Laboratory	U.S. Environmental Protection Agency, 1996; Hautman and others, 1999
1,2,3-Trichloropropane	Gas chromatography/electron-capture detector	Montgomery Watson-Harza Laboratory	U.S. Environmental Protection Agency, 1995
Tritium and noble gases	Helium-3 in-growth and mass spectrometry	Lawrence Livermore National Laboratory	Clarke and others, 1976; Moran and others, 2002
Radium-226, -228, gross alpha/beta radioactivity	Alpha activity counting	Eberline Analytical Services	U.S. Environmental Protection Agency, 1980
Carbon isotopes: $\delta^{13}C$	Accelerator mass spectrometry	University of Waterloo, Environmental Isotope Laboratory; University of Arizona Accelerator Mass Spectrometry Laboratory	Donahue and others, 1990; Jull and others, 2004
Total and *Escherichia* coliform	Membrane filter technique with "MI agar," colony counting	USGS field measurement	U.S. Environmental Protection Agency, 2002b