

## Subject Index

### A

Actinide, 96  
 Advanced materials, 375  
 Advanced oxidation  
   processes, 173  
 Amines, 43  
 Antigens, 524, 536  
   detection, 400  
 Aromatics, 282  
 Artificial intelligence, 567, 598  
 ASTM standards (See also  
   Standards)  
   water, 15, 35, 291, 567  
 Aviation gasoline, 578

### B

Bacterial contamination, 334,  
   463, 483, 499  
   Escherichia coli, 385, 445,  
     455, 554  
   Giardia, 422, 483, 499  
   Salmonella, 445  
   Shigella, 445  
 Biocides, 343  
 Biological sensors, 173  
 Bioluminescence, 385  
 Biomonitoring, 173  
 Biotechnology, 436  
 Boiling water reactors, 66, 124  
 Brackish water desalination, 323  
 Broth test, 554

### C

Carbon, total organic, 334  
 Chemical testing kits, water, 184  
 Chemical usage, in offshore gas  
   and oil production, 343  
 Chemiluminescence, 255  
 Chlorobenzene, 267  
 Chromatography, 567  
   field gas, 276  
   gas, 245, 255, 267, 282

  high resolution gas, 578  
   ion, 334  
   liquid, 203  
 Coliforms, 385, 445, 455  
 Colilert presence/absence  
   test, 455  
 Coliphage, 554  
 Computerization  
   artificial intelligence, 567,  
     598  
   CYCLEXPRT, 52  
   laboratory automation, 21  
   monitoring, 147  
   on-line, 43  
   spectroscopy and, 96  
 Contaminants  
   aromatics, 282  
   bacterial, 334, 445, 455, 463,  
     483, 499, 554  
   chemicals, 66  
   offshore, 343  
   ozonation byproducts, 173  
   pesticides, 255  
   polychlorinated biphenyls, 276  
   radionuclides, 96, 124  
   trace amounts, 5, 301  
     significance of, 5  
   viruses, 400, 509, 524, 536  
   volatile organics, 267, 276  
 Coolants, water and steam, 43  
 Corrosion, 43, 66  
   control, 173  
   inhibitors, 343  
Cryptosporidium, 422, 483  
 Cycle chemistry, 52, 363  
 CYCLEXPRT, 52

### D

Data  
   acquisition, 291  
   integrity, 21, 160  
   interpreting, 5  
   manual handling procedures, 21  
   use, 315  
 Demineralization, 323, 375

Department of Energy, 81  
Desalination, 323  
DNA probes, 385

## E

Electric Power Research  
Institute, 43, 52, 363  
Electrochemical methods, 203, 385  
Electrodialysis, 323  
reversal, 375  
Electron capture detector, 267  
Elements, trace analyses, 5, 301  
ELISA, 436, 524  
Emulsion breakers, 343  
Enterovirus, human, detection,  
536  
Environmental laboratories,  
managing, 21  
Environmental Protection Agency  
(EPA), 21, 147, 455  
drinking water regulations, 173  
Manual of Methods for  
Virology, 509  
Resource Conservation and  
Recovery Act, 81  
water test kits and EPA  
methods, 184  
Enzymatic substrate technology, 385  
Enzyme-linked immunoassay  
(ELISA), 436, 524  
Escherichia coli, 385, 445, 455, 554  
Expert systems, 52, 598

## F

Field tests  
chromatography, 567  
gas chromatography, 276  
Hanby, 282  
kits, 184  
Filtration, 463  
Fisher's index of dispersion, 509  
Fluorescence  
immunofluorescence, 422,  
499, 524  
synchronous, 598  
ultraviolet-visible, 598  
Fossil fuel power plants, 43, 52,  
363

## G

Gamma rays, 96  
Gasoline analysis, 245  
Gene probes, 400, 422, 445  
Giardia, 422, 483, 499  
Glycols, 343  
Grab samples, 363  
Groundwater, 173, 578  
analysis, 276  
contamination, 282  
Guidelines, 363  
nuclear plants, 66  
waste characterization, 124  
water, 35, 43

## H

Hanby field test kit, 282  
Hazardous waste management,  
81, 96, 124  
Headspace analysis, 276  
Hydrolysis, 455

## I

Immunofluorescence, 422, 499,  
524  
Impedance, 385  
Industry users of standards, 35  
Information management, 21  
Infrared carbon dioxide  
detection, 385  
Ion exchange, 334, 375  
membranes, 323  
Ion trap mass spectrometry, 203

## J

Jet fuels, 578

## L

Laboratories, role in monitoring  
and regulations, 160  
Laboratory automation, 21  
Laboratory Information  
Management System  
(LIMS), 21

Laboratory practice,  
standardizing, 15  
Laser desorption, 245  
Latex agglutination, 524  
Leachables, 334

## M

Matrix interaction, 5  
Membrane filtration test, 455  
Methanol, 343  
Microbial reductions, through  
treatment, 463  
Microscopic count, direct, 463  
Microscopy  
electron, 524  
Nomarski differential  
interference  
contrast, 483  
Modelling, multiple linear  
regression, 301  
Modified reference techniques,  
499  
Monitoring approaches  
biomonitoring, 173  
emerging techniques, 436  
Environmental Protection  
Agency, on water, 147  
legal perspective, 160  
modelling, 301  
on-line, 43  
pollution control, 203  
power plant, 363  
programs, 147, 554  
significance of, 5  
Monoclonal antibodies, 422  
MUG test, 385, 455

## N

Nuclear power, 43, 66, 363  
Nuclear Regulatory  
Commission, 124  
Nucleic acid hybridization, 400,  
524

## O

Office of Management and  
Budget, 291  
Office of Water Data  
Coordination, 291

Oil fields, 343  
Oil spill, 567  
Ozonation byproducts, 173

## P

Parasite methods, 422, 483, 499  
Pattern recognition, 578  
Pesticides, sulfur detection in, 255  
Petroleum products, analysis of, 567  
aromatics, 282  
expert systems for, 598  
gasoline, 245, 343  
oil, 343  
Piezoelectric crystals, 203  
Plaque assay, 509  
Poisson distribution, 509  
Polychlorinated biphenyls, 276  
Polymerase chain reaction  
(PCR), 400, 436, 445  
Power plants, 375  
fossil fuel, 43, 52, 363  
nuclear, 43, 66, 363  
Pressurized water reactors, 66, 124  
Protozoology, detection, 422  
Purging, sample-to-column, 267

## Q

Quality control (See also ASTM  
standards and Standards),  
15, 21, 52, 291, 363  
Quality, water test kit, 184

## R

Radioactive waste management, 81  
Radionuclides, sample analysis  
for, 81, 96, 124  
Reactor components, corrosion, 66  
Regulatory agencies (See also  
specific ones)  
monitoring data and  
regulations, 160  
Remote electro-optical sensor  
system, 173  
Resource Conservation and  
Recovery Act, 81  
Resource management, water, 315  
Reverse osmosis, 375

## S

Salmonella, 445  
 Sampling protocol significance, 5  
 Scale inhibitors, 343  
 Sediments, analysis, 301, 291  
 Sediment-trace element  
     chemistry, 301  
 Semiconductors, 334  
 Sewage, 524  
Shigella, 445  
 Single-shell tanks, 81  
 Spectral pattern recognition, 598  
 Spectrometry  
     Fourier transform mass, 245  
     mass, 203, 267  
 Spectroscopy, 203  
     gamma, 96, 124  
     fluorescence, 567  
 Standards (See also ASTM  
     Standards), 147, 160,  
     291, 301, 363, 483  
     data collection and  
         processing, 315  
 Steam cycles, 43  
 Streamflow measurement, 315  
 Streptavidin-biotin/  
     nitrocellulose-enzyme  
     immunoassay, 536  
 Sulfur detectors, 255  
 Sulfur-selective detectors, 255  
 Supercritical fluids, 203

## T

Tanks, single-shell, 81  
 Test kits  
     Hanby field test kit, 282  
     rotavirus, 524  
     water analysis test kits, 184,  
         282  
 Thermal power systems, 363  
 Thorium, 96  
 Total organic carbon, 334  
 Trace analyses, 5, 301  
 Treatment plant performance,  
     water, 463  
 Turbidity, 463, 499

## U

Ultrafiltration, 375  
 Ultraviolet-visible fluorescence, 598  
 Uranium, 96  
 U.S. Department of Energy, 81  
 U S Environmental Protection  
     Agency, 21, 455  
     drinking water regulations, 173  
     Manual of Methods for  
         Virology, 509  
     monitoring programs, 147  
     Resource Conservation and  
         Recovery Act, 81  
     water test kits and EPA  
         methods, 184  
 U S Geological Survey, 315  
 U S Nuclear Regulatory  
     Commission, 124

## V

Viruses, 400  
     assays for, 509  
     human enteroviruses, 536  
     rotavirus, 524  
 Volatile organic compounds,  
     267, 276

## W

Washington State Dangerous  
     Waste Regulations, 81  
 Waste  
     characterization, 81  
     mixed, characterization, 81, 124  
     radioactive, disposal of, 124  
 Water  
     analysis interpretation, 5  
     analysis test kits, 184, 282, 524  
     chemistry, 43  
     groundwater, 173, 276, 282, 578  
     high purity, 35, 43, 334, 375  
     quality control, 5, 15, 21, 52, 363  
     resource management, 315  
     treatment plant performance,  
         463  
     types of, 15  
     wastewater reuse, 323  
 Whole column cryotrapping, 267