

Index

ABSORPTION

Physics, **2:18**

ACCURACY

Mathematical notation, **1:6**

Sampling and analysis quality assurance and control, **3:105**

ACID ACCEPTOR

Forensics, age-dating chlorinated solvents, **10:23**

ACIDS AND BASES

Chemistry (this index)

ACTIVATED CARBON ADSORPTION

Physical-chemical wastewater treatment system, **6:68**

ACTIVATED SLUDGE TREATMENT

Wastewater Treatment Unit Operations (this index)

ADDITIVES

Forensics, age dating chlorinated solvents, **10:23**

Stabilization, **7:68**

ADSORPTION

Activated carbon adsorption, physical-chemical wastewater treatment system, **6:68**

Physics, **2:18**

ADVECTION

Aqueous-phase groundwater contaminant migration, **5:16**

AERIAL PHOTOGRAPHS

Forensics, interpretation of aerial photographs, **10:2**

AEROBIC WASTEWATER TREATMENT

Biological treatment technologies, **6:55**

AGE-DATING CHLORINATED SOLVENTS

Forensics (this index)

AIR

Generally, **8:1 to 8:46**

Ambient air monitoring, **8:31**

Atmospheric dispersion modeling, **8:33**

Compliance testing and monitoring, quality monitoring and modeling, **8:32**

Continuous/instrumental monitoring, direct pollutant measurement, **8:27**

Control equipment, design specifications of control equipment for quantifying source emissions, **8:24**

AIR—Cont'd

Control of pollution. Pollution control, below

Criteria pollutants, regulated, **8:9**

Design specifications of control equipment, engineering calculations for quantifying source emissions, **8:24**

Direct pollutant measurement. Quality monitoring and modeling, below

Emission modeling, quantifying source emissions, **8:22**

Engineering calculations for quantifying source emissions. Quality monitoring and modeling, below

Forms of air pollution

generally, **8:3**

gases and vapors, units used, **8:7**

particulate matter. Particulate matter, below

Gases and vapors

generally, **8:6**

control. Pollution control, below

units used, **8:7**

Greenhouse gases, **8:15, 8:46**

Hazardous air pollutants, regulated, **8:11**

Indoor air, sampling and analysis, **3:15**

Industrial hygiene, OSHA standards (29 C.F.R. § 1910.1000 and certain Subpt Z standards), **11:19**

Leak detection and repair (LDAR), estimating source emissions, **8:29**

Manual sampling, direct pollutant measurement, **8:26**

Material balances, quantifying source emissions, **8:23**

Mercury, types of regulated pollutants, **8:11**

Modeling. Quality monitoring and modeling, below

Monitoring. Quality monitoring and modeling, below

Occupational Safety and Health Administration, (29 C.F.R. § 1910.1000 and certain Subpt Z standards), **11:19**

Ozone-depleting chemicals, regulated, **8:14**

Parametric monitoring, estimating source emissions, **8:28**

Particulate matter

generally, **8:4**

control. Pollution control, below

industrial hygiene, OSHA standards (29 C.F.R. § 1910.1000 and certain Subpt Z standards), **11:19**

units used, **8:5**

AIR—Cont'd

- Pollution control
 - generally, **8:34**
 - absorption, control of gases and vapors, **8:43**
 - adsorption, control of gases and vapors, **8:42**
 - condensation, control of gases and vapors, **8:45**
 - cyclones, control of particulate matter, **8:36**
 - electrostatic precipitators, control of particulate matter, **8:38**
 - fabric filters, control of particulate matter, **8:37**
 - gases and vapors
 - generally, **8:40**
 - absorption, **8:43**
 - adsorption, **8:42**
 - condensation, **8:45**
 - greenhouse gases, **8:15, 8:46**
 - selective catalytic reduction, **8:44**
 - thermal oxidation, **8:41**
 - greenhouse gases, **8:15, 8:46**
 - particulate matter
 - generally, **8:35**
 - cyclones, **8:36**
 - electrostatic precipitators, **8:38**
 - fabric filters, **8:37**
 - wet scrubbers, **8:39**
 - selective catalytic reduction, control of gases and vapors, **8:44**
 - thermal oxidation, control of gases and vapors, **8:41**
 - wet scrubbers, control of particulate matter, **8:39**
- Pollution terminology
 - generally, **8:1 et seq.**
 - forms of air pollution. Forms of air pollution, above
 - regulated pollutant types. Regulated pollutant types, below
 - sources of air pollution, **8:16**
- Published emission factors, engineering calculations for quantifying source emissions, **8:20**
- Quality monitoring and modeling
 - generally, **8:17**
 - ambient air monitoring, **8:31**
 - atmospheric dispersion modeling, **8:33**
 - compliance testing and monitoring, **8:32**
 - continuous/instrumental monitoring, direct pollutant measurement, **8:27**
 - control equipment, design specifications of, **8:24**
 - design specifications of control equipment, engineering calculations for quantifying source emissions, **8:24**
 - direct pollutant measurement
 - generally, **8:25**
 - continuous/instrumental monitoring, **8:27**

AIR—Cont'd

- Quality monitoring and modeling—Cont'd
 - direct pollutant measurement—Cont'd
 - manual sampling, **8:26**
 - emission modeling, quantifying source emissions, **8:22**
 - engineering calculations for quantifying source emissions
 - generally, **8:19**
 - control equipment, design specifications of, **8:24**
 - design specifications of control equipment, **8:24**
 - emission modeling, **8:22**
 - material balances, **8:23**
 - published emission factors, **8:20**
 - vendor specifications and guarantees, **8:21**
 - estimating source emissions, leak detection and repair (LDAR), **8:29**
 - leak detection and repair (LDAR), estimating source emissions, **8:29**
 - manual sampling, direct pollutant measurement, **8:26**
 - material balances, quantifying source emissions, **8:23**
 - parametric monitoring, quantifying source emissions, **8:28**
 - published emission factors, engineering calculations for quantifying source emissions, **8:20**
 - quantifying source emissions
 - generally, **8:18**
 - direct pollutant measurement, **8:25 to 8:27**
 - engineering calculations, **8:18 to 8:24**
 - parametric monitoring, **8:28**
 - vendor specifications and guarantees, engineering calculations for quantifying source emissions, **8:21**
- Quantifying source emissions. Quality monitoring and modeling, below
- Regulated pollutant types
 - generally, **8:8**
 - criteria pollutants, **8:9**
 - greenhouse gases, **8:15**
 - hazardous air pollutants, **8:11**
 - mercury, **8:11**
 - ozone-depleting chemicals, **8:14**
 - secondary pollutants, **8:10**
 - substances, regulated substances/extremely hazardous substances, **8:12**
- Regulated substances/extremely hazardous substances, **8:12**
- Sampling and Analysis** (this index)
- Secondary pollutants, types of regulated pollutants, **8:10**
- Sources of air pollution, **8:16**

INDEX

AIR—Cont'd

Substances, regulated substances/extremely hazardous substances, **8:12**

Vendor specifications and guarantees, engineering calculations for quantifying source emissions, **8:21**

AIR POLLUTION

Air (this index)

AIR-ROTARY DRILLING

Groundwater investigations, **5:43**

AIR STRIPPING

Physical-chemical wastewater treatment system, **6:72 to 6:74**

ALKANE SUBSTITUTES

Chemistry, **2:44**

ALKENE AND ALKYNE SUBSTITUTES

Chemistry, **2:47**

ALKENES AND ALKYNES

Chemistry, **2:46**

ALKYL LEADS

Forensics, petroleum hydrocarbon characterization, **10:7**

ALLOTROPES

Chemistry, **2:53**

AMBIENT AIR

Collection of samples for analysis, **3:13**

Quality monitoring, **8:31**

ANAEROBIC BIOLOGICAL TREATMENT SYSTEMS

Wastewater treatment unit operations, **6:65**

ANALYSIS

Groundwater (this index)

Sampling and Analysis (this index)

ANALYTICAL SOLUTIONS

Groundwater analysis and modeling, **5:31**

ANION E6:CHANGE SYSTEM

Wastewater treatment unit operations, **6:71**

ANIONS

Analytical methods, **3:91**

Chemistry, **2:57**

ANOVA AND t-TEST

Numerical notations and basic statistics, comparisons of data sets, **1:23**

API SEPARATOR

Wastewater treatment unit operations, **6:53**

AQUATIC ECOSYSTEMS

Surface Water Quality (this index)

AQUEOUS PHASE

Groundwater (this index)

AROMATIC HYDROCARBONS

Chemistry, **2:49**

ASBESTOS

Industrial Hygiene (this index)

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS

Analytical methods, **3:79**

ATMOSPHERIC DISPERSION MODELING

Quality modeling, **8:33**

ATOMIC ABSORPTION SPECTROSCOPY

Sampling and Analysis (this index)

ATOMS

Physics, **2:5**

ATTACHED GROWTH SYSTEMS

Wastewater treatment unit operations, biological treatment technologies, **6:64**

BACKWASH

Wastewater, physical-chemical treatment system, **6:84**

BARRIERS

Groundwater remediation through containment barriers, **5:57**

BASES

Chemistry (this index)

BAYESIAN STATISTICS

Numerical notations and basic statistics, **1:21**

BAYES' THEOREM

Statistical significance, **1:22**

BENEFICIATION

Soil washing and flushing, **7:79**

BIOACCUMULATION

Surface water quality, **6:41**

BIOASSAYS

Risk assessment, **4:3**

BIOCHEMICAL OXYGEN DEMAND (BOD)

Surface Water Quality (this index)

BIOCONCENTRATION

Surface water quality, **6:43**

BIOLOGICAL TREATMENT TECHNOLOGIES

Wastewater Treatment Unit Operations (this index)

BIOMARKERS

Forensics, petroleum hydrocarbon characterization, **10:11**

BIOMASS

Wastewater treatment unit operations, **6:55**

BIOMONITORING

Risk assessment, **4:15**

BIOREMEDIATION

Solid Waste and Contaminated Soil (this index)

BLANKS

Quality control samples. **Sampling and Analysis** (this index)

BOILERS

Thermal treatment of solid waste or contaminated soil, **7:27**

BONDING

Chemistry (this index)

BREAKTHROUGH

Wastewater treatment unit operations, **6:68**

BROADLEAF FORESTED WETLANDS

Generally, **9:16**

BTEX

Generally, **2:49**

Forensics (this index)

CABLE-TOOL DRILLING

Groundwater investigations, **5:42**

CALIBRATION

Sampling and Analysis (this index)

CAPS

Groundwater remediation through containment caps, **5:56**

CARBON/HYDROGEN/SULPHUR ISOTOPES

Forensics, petroleum hydrocarbon characterization, **10:18**

CARCINOGENS

Dose-response assessment, **4:9**

Risk assessment, **4:9**

CATION E6:CHANGE SYSTEM

Physical-chemical wastewater treatment system, **6:70**

CATIONS

Cation e6:change system, physical-chemical wastewater treatment system, **6:70**

Chemistry, **2:56**

CEMENT KILNS

Thermal treatment of solid waste or contaminated soil, **7:26**

CENSORED DATA

Numerical notations and basic statistics, when measurements are not numbers, **1:28**

CENTRAL TENDENCIES

Descriptive statistics, **1:14**

CHAIN OF CUSTODY

Sampling and analysis, **3:94**

CHEMICAL ANALYSES

Sampling and Analysis (this index)

CHEMICAL HEATING

Thermal treatment of solid waste or contaminated soil, **7:39**

CHEMICAL OXIDATION AND REDUCTION

Physical-chemical wastewater treatment system, **6:78**

CHEMICAL OXYGEN DEMAND (COD)

Surface Water Quality (this index)

CHEMICAL PRESERVATIVES

Collection of samples, **3:30**

CHEMICAL REACTIONS

Chemistry (this index)

CHEMICAL REDUCTION

Generally, **7:16, 7:61 to 7:65**

Application of reductants, **7:64**

Available reductants, **7:62**

Health and safety when using reductants, **7:65**

Use of reductants, **7:63**

CHEMISTRY

Generally, **2:21 to 2:79**

Acids and bases

acid/base chemical reactions, **2:27**

environmental chemistry, **2:76**

nomenclature, **2:59**

Alkane substitutes, **2:44**

Alkene and alkyne substitutes, **2:47**

Alkenes and alkynes, **2:46**

Allotropes, **2:53**

Analyses. **Sampling and Analysis** (this index)

Anions, **2:57**

Aromatic hydrocarbons, **2:49**

Bases. Acids and bases, above

Bonding

covalent bonding, **2:23**

ionic bonding, **2:23**

pH, **2:24**

valence shells, **2:22**

Cations, **2:56**

Chemical nomenclature. Nomenclature, below

Chemical reactions

acid/base reactions, **2:27**

CHEMISTRY—Cont'd

- Chemical reactions—Cont'd
 - composition reactions, **2:28**
 - decomposition reactions, **2:29**
 - double-displacement reactions, **2:32**
 - hydrogenation, **2:34**
 - hydrolysis, **2:33**
 - oxidation state, types of reaction classified by
 - generally, **2:35**
 - assigning oxidation states, **2:36**
 - rearrangement reactions, **2:30**
 - single-displacement reactions, **2:31**
 - structure, types of reaction classified by
 - acid/base reactions, **2:27**
 - composition reactions, **2:28**
 - decomposition reactions, **2:29**
 - double-displacement reactions, **2:32**
 - hydrogenation, **2:34**
 - hydrolysis, **2:33**
 - rearrangement reactions, **2:30**
 - single-displacement reactions, **2:31**
- cis* and *trans* isomers, **2:48**
- Composition chemical reactions, **2:28**
- Corrections, nomenclature, **2:62**
- Covalent bonding, **2:23**
- Cyanide, **2:79**
- Cyclic alkanes, **2:42**
- Decomposition chemical reactions, **2:29**
- Double-displacement chemical reactions, **2:32**
- Elements, nomenclature, **2:52**
- Environmental chemistry
 - generally, **2:67**
 - acids and bases, **2:76**
 - cyanide, **2:79**
 - isoprenoids, **2:75**
 - major ions, **2:77**
 - metals, **2:78**
 - Per- and polyfluoroalkyl substances (PFAS), **2:73**
 - pesticides, **2:74**
 - petroleum hydrocarbons, **2:68**
 - phenols, **2:70**
 - polychlorinated biphenyls (PCBs), **2:72**
 - polynuclear aromatic hydrocarbons, **2:71**
 - solvents, **2:69**
- Functional groups, **2:50**
- Heteroatomic inorganic compounds, **2:55**
- Homoatomic inorganic compounds, **2:54**
- Hydrocarbons, **2:39**
- Hydrocarbon substitutes, **2:40**
- Hydrogenation, **2:34**
- Hydrolysis, **2:33**
- Inorganic compounds. Nomenclature, below
- Ionic bonding, **2:23**
- Isomeric alkyl groups, **2:45**

CHEMISTRY—Cont'd

- Isomers, **2:41**
- Isoprenoids, **2:76 to 2:79**
- Isotopes, nomenclature, **2:65**
- Major ions, **2:77**
- Matter, building blocks and rules of matter. **Physics** (this index)
- Metals, **2:78**
- Nanosubstances, nomenclature, **2:64**
- Nanotechnology, **2:80**
- Nomenclature
 - acids and bases, **2:59**
 - alkane substitutes, naming, **2:44**
 - alkene and alkyne substitutes, **2:47**
 - alkenes and alkynes, **2:46**
 - allotropes, **2:53**
 - anions, **2:57**
 - aromatic hydrocarbons, **2:49**
 - bases and acids, **2:59**
 - cations, **2:56**
 - cis* and *trans* isomers, **2:48**
 - corrections, **2:62**
 - cyclic alkanes, **2:42**
 - elements, **2:52**
 - functional groups, **2:50**
 - heteroatomic inorganic compounds, **2:55**
 - homoatomic inorganic compounds, **2:54**
 - hydrocarbons, **2:39**
 - hydrocarbon substitutes, **2:40**
 - inorganic compounds
 - acids and bases, **2:59**
 - allotropes, **2:53**
 - anions, **2:57**
 - cations, **2:56**
 - elements, **2:52**
 - heteroatomic inorganic compounds, **2:55**
 - homoatomic inorganic compounds, **2:54**
 - radicals, **2:58**
 - isomeric alkyl groups, **2:45**
 - isomers, **2:41**
 - isotopes, **2:65**
 - nanosubstances, **2:64**
 - non-US naming systems, **2:61**
 - organic compounds
 - generally, **2:38**
 - alkane substitutes, naming, **2:44**
 - alkene and alkyne substitutes, **2:47**
 - alkenes and alkynes, **2:46**
 - aromatic hydrocarbons, **2:49**
 - cis* and *trans* isomers, **2:48**
 - cyclic alkanes, **2:42**
 - functional groups, **2:50**
 - hydrocarbons, **2:39**
 - hydrocarbon substitutes, **2:40**
 - isomeric alkyl groups, **2:45**

CHEMISTRY—Cont'd

Nomenclature—Cont'd

organic compounds—Cont'd

isomers, **2:41**naming conventions, **2:43**polymers, **2:63**radicals, **2:58**regulatory nomenclature, **2:60 to 2:64**TSCA, nomenclature amended under, **2:66**Non-US naming systems, **2:61****Nuclear Chemistry** (this index)

Organic compounds. Nomenclature, above

Oxidation state, types of reaction classified by.

Chemical reactions, above

Per- and polyfluoroalkyl substances (PFAS), **2:73**Pesticides, **2:74**Petroleum hydrocarbons, **2:68**PH, bonding, **2:24**Phenols, **2:70**Polychlorinated biphenyls (PCBs), **2:72**

Polymers

generally, **2:51**nomenclature, **2:63**Polynuclear aromatic hydrocarbons, **2:71**Radicals, **2:58**

Reactions. Chemical reactions, above

Rearrangement reactions, **2:30**Single-displacement reactions, **2:31**Solvents, **2:69**

Structure, types of reaction classified by. Chemical reactions, above

Valence shells, bonding, **2:22****CHLORINATED SOLVENTS**Age-dating chlorinated solvents. **Forensics** (this index)**CHROMATOGRAPHIC SEPARATION**Chemical analyses, **3:45**Forensics, petroleum hydrocarbon characterization, **10:12****CHROMATOGRAPHY****Sampling and Analysis** (this index)**COAGULATION**Physical-chemical wastewater treatment system, **6:76****COELUTION**Chemical analyses, **3:45****COLLECTION OF SAMPLES****Sampling and Analysis** (this index)**COLLOIDAL SUSPENSIONS**Wastewater treatment unit operations, **6:76****COLLOIDAL TRANSPORT**Forensics, challenges to contaminant transport models in soil, **10:37****COMBUSTION****Solid Waste and Contaminated Soil** (this index)**COMMUNICATIONS**Ecological risk management, **4:38****COMPENSATION**Wetland mitigation. **Wetlands** (this index)**COMPLIANCE TESTING**Air quality monitoring and modeling, **8:32****COMPOSITION CHEMICAL REACTIONS**Chemistry, **2:28****COMPOUNDS**Physics, **2:6****COMPOUND SPECIFIC ISOTOPE ANALYSIS**Chemical analyses, **3:56****CONDITIONAL PROBABILITY**Numerical notations and basic statistics, **1:21**Statistical significance, **1:22****CONDUCTIVITY**Electrical conductivity, **10:3**Groundwater flow, hydraulic conductivity, **5:4****CONFINED-AQUIFER PUMPING TEST**Groundwater flow, **5:11****CONIFEROUS FORESTED WETLANDS**Generally, **9:15****CONSERVATION OF MATTER**Physics, **2:10****CONSISTENCY**Numerical notations and basic statistics, assessing consistency and usability of large data sets, **1:39****CONTAINERS**Collection of samples, **3:9****CONTAINMENT****Groundwater** (this index)**CONTAMINANT MIGRATION****Groundwater** (this index)**CONTAMINANT PLUMES**Aqueous-phase contaminant migration, **5:22****CONTAMINATED SOIL****Solid Waste and Contaminated Soil** (this index)**CONTRACT LABORATORY PROGRAM**EPA analytical methods, **3:68**

INDEX

CONTROL CHARTS

Numerical notations and basic statistics, **1:25**

CONTROL EQUIPMENT

Air pollution, design specifications of control equipment for quantifying source emissions, **8:24**

CONVERSIONS

Mathematical and scientific notation, **1:8**

CORRECTIONS

Chemistry, **2:62**

CORRELATED DATA

Numerical notations and basic statistics, **1:31**

CORROSION

Forensics, underground storage tank corrosion models, **10:3**

COVALENT BONDING

Chemistry, **2:23**

CRITERIA POLLUTANTS

Regulated air pollutants, **8:9**

CRITICAL POINT

Wastewater treatment unit operations, **6:79**

CUMULATIVE RISK

Risk assessment, **4:22**

CYANIDE

Chemistry, **2:79**

CYCLIC ALKANES

Chemistry, **2:42**

DARCY'S LAW

Groundwater flow, **5:5**

DATA REDUCTION

Sampling and Analysis (this index)

DATA REPORTING

Sampling and analysis, **3:125**

DATA SETS

Numerical notations and basic statistics, assessing consistency and usability of large data sets, **1:39**

DATA VALIDATION

Sampling and analysis, **3:129**

DECIMAL SYSTEM

Mathematical and scientific notation, **1:4**

DECISION-MAKING

Numerical Notations and Basic Statistics (this index)

DECOMPOSITION CHEMICAL REACTIONS

Chemistry, **2:29**

DEGRADATION

Groundwater, aqueous-phase contaminant migration, **5:20**

DEGRADATION PRODUCTS AND RATIOS

Forensics, age dating chlorinated solvents, **10:24**

DELINEATION

Wetlands (this index)

DENDROECOLOGY

Forensics, **10:43**

DENSITY

Physics, **2:12**

DEPRESSIONAL AREAS

Wetlands, **9:9**

DESALINATION

Shale oil wastewater treatment unit operations, **6:102**

DESCRIPTIVE STATISTICS

Numerical Notations and Basic Statistics (this index)

DESIGN

Numerical notations and basic statistics, design of sampling programs, **1:34**

DESPORTATION

Thermal treatment of solid waste or contaminated soil, **7:35 to 7:42**

DETECTION LIMITS

Sampling and Analysis (this index)

DETERMINISTIC RISK ASSESSMENTS

Risk Assessment (this index)

DIFFUSION

Physics, **2:19**

DIMENSIONAL ANALYSIS

Mathematical and scientific notation, **1:9**

DIRECT PUSH TECHNOLOGY

Groundwater investigations, drilling, **5:47**

DISINFECTION

Wastewater treatment unit operations, **6:85, 6:102**

DISPERSION

Atmospheric dispersion modeling, **8:33**
Groundwater, aqueous-phase contaminant migration, **5:17**

DISPERSIVITY

Forensics, groundwater contaminated transport models, **10:40**

DISSOLUTION FINGERING

Forensics, challenges to contaminant transport models in soil, **10:36**

DISSOLVED PLUME CONTROL AND REMEDIATION

Groundwater (this index)

DISTRIBUTIONS

Descriptive statistics, **1:13, 1:17**

DNAPLS

Groundwater, non-aqueous-phase liquids contaminant migration, **5:25**

DOCUMENTATION

Collection of samples, **3:34**

DOSE ESTIMATION

Risk assessment, **4:14**

DOSE-RESPONSE ASSESSMENT

Risk Assessment (this index)

DOUBLE-DISPLACEMENT CHEMICAL REACTIONS

Chemistry, **2:32**

DRILLING

Groundwater (this index)

DRIVERS

Ecological risk assessment (ERA), **4:28**

DUAL ROTARY DRILLING

Groundwater investigations, **5:45**

DUPLICATES

Quality control samples. **Sampling and Analysis** (this index)

DURATION OF EXPOSURE

Industrial hygiene, **11:6**
Risk assessment, **4:13**

DUST MEASUREMENT AND STUDIES

Industrial Hygiene (this index)

DUSTY TRADES

Industrial hygiene, dust studies (1920 to 1940), **11:36**

DYES

Forensics, petroleum hydrocarbon characterization, **10:9**

ECOLOGICAL RISK ASSESSMENT (ERA)

Risk Assessment (this index)

EFFECTS ASSESSMENT

Ecological risk assessment (ERA), **4:35**

8 HOUR TIME-WEIGHTED AVERAGES (TWAs)

Industrial hygiene, **11:7**

ELECTRONIC MICROSCOPE

Forensics, scanning electronic microscope (SEM), **10:41**

ELEMENTS

Chemical nomenclature, **2:52**
Physics, **2:5**

ELUTION

Chemical analyses, **3:45**

EMISSION MODELING

Air pollution, quantifying source emissions, **8:22**

EMISSION SPECTROSCOPY

Sampling and Analysis (this index)

EMPLOYMENT

Workplace health. **Industrial Hygiene** (this index)

EMULSIFIED OIL

Wastewater treatment unit operations, **6:53**

ENDOCRINE DISRUPTORS

Risk assessment, **4:3**

ENVIRONMENTAL CHEMISTRY

Chemistry (this index)

ENVIRONMENTAL DECISION-MAKING

Numerical Notations and Basic Statistics (this index)

ENVIRONMENTAL FORENSICS

Forensics (this index)

ENVIRONMENTAL JUSTICE

Risk assessment, **4:22**

ENVIRONMENTAL STATISTICS

Numerical Notations and Basic Statistics (this index)

EPA ANALYTICAL METHODS

Sampling and Analysis (this index)

EPIDEMIOLOGY

Risk assessment, hazard identification, **4:5**

EQUALIZATION

Wastewater treatment unit operations, **6:50**

ESTIMATION AND CONFIDENCE INTERVALS

Inferential statistics, **1:18**

EUTROPHICATION

Surface water quality, **6:13**

EVIDENCE

Numerical notations and basic statistics, evidence of contamination (RCRA analysis), **1:35**

INDEX

EXCAVATION

Groundwater remediation, **5:53**

EXPONENTIAL NOTATION

Mathematical and scientific notation, **1:4**

EXPOSURE ASSESSMENT

Industrial Hygiene (this index)

Risk Assessment (this index)

EXPOSURE DURATION

Industrial hygiene, **11:6**

Risk assessment, **4:13**

EXTRACTION

Physical treatment of solid waste or contaminated soil, **7:21**

EXTREME VALUES

Numerical notations and basic statistics, **1:29**

FACULTATIVE WASTEWATER TREATMENT PROCESSES

Wastewater treatment unit operations, **6:55**

FECAL COLIFORM

Surface water quality, classification and measurement of fecal coliform, **6:22**

FILTRATION

Physical-chemical wastewater treatment system, **6:84**

FINGER FLOW

Forensics, challenges to contaminant transport models in soil, **10:36**

FINGERPRINTS

Forensics, petroleum hydrocarbon characterization, **10:5**

FIRST-ORDER

Type of reactions, **10:13**

FIXATION

Chemical treatment of solid waste or contaminated soil, **7:18**

FLAME EMISSION SPECTROSCOPY

Sampling and analysis, **3:59**

FLOATERS

Groundwater, non-aqueous-phase liquids contaminant migration, **5:24**

FLOC

Wastewater treatment unit operations, **6:55**

FLOCCULATION

Physical-chemical wastewater treatment system, **6:76**

FLOODPLAIN AREAS

Wetlands, **9:8**

FLOTATION

Wastewater treatment unit operations, **6:54**

FLOW

Groundwater (this index)

FLOW NETS

Groundwater flow, **5:6**

FOOD WEBS

Aquatic ecosystems, **6:5**

FORENSICS

Generally, **10:1 to 10:45**

Acid acceptor, age-dating chlorinated solvents, **10:23**

Additives, age dating chlorinated solvents, **10:23**

Aerial photographs, interpretation of, **10:2**

Age dating and source identification perchlorate, **10:26**

Age-dating chlorinated solvents

generally, **10:22**

acid acceptor, **10:23**

additives, **10:23**

degradation products and ratios, **10:24**

isotope fractionation, **10:25**

metal inhibitor, **10:23**

permils, **10:25**

stable isotope analysis, **10:25**

Alkyl leads, petroleum hydrocarbon characterization, **10:7**

Biomarkers, petroleum hydrocarbon characterization, **10:11**

BTEX

degradation models, petroleum hydrocarbon characterization, **10:14**

ratios, petroleum hydrocarbon characterization, **10:13**

Carbon/hydrogen/sulphur isotopes, petroleum hydrocarbon characterization, **10:18**

Chlorinated solvents, age dating. Age-dating chlorinated solvents, above

Chromatographic separation, petroleum hydrocarbon characterization, **10:12**

Colloidal transport, challenges to contaminant transport models in soil, **10:37**

Commercial availability of chemical, **10:4**

Conclusion, **10:44**

Contaminated transport models

generally, **10:28 et seq.**

dispersivity, **10:40**

groundwater models, **10:40**

paved surfaces, contaminated transport models, below

soil, contaminated transport models, below

Cosolvent transport, challenges to contaminant transport models in soil, **10:38**

FORENSICS—Cont'd

- Degradation products and ratios, age dating chlorinated solvents, **10:24**
- Dendroecology, **10:43**
- Dispersivity, groundwater contaminated transport models, **10:40**
- Dissolution fingering, challenges to contaminant transport models in soil, **10:36**
- Dissolved nitrate, source identification, **10:27**
- Dyes, petroleum hydrocarbon characterization, **10:9**
- Electrical conductivity, **10:3**
- Electronic microscope, scanning (SEM), **10:41**
- Emerging contaminants
 - Per- and Polyfluoralkyl Substances (PFAS), **10:44**
- Environmental forensic microbiology, **10:42**
- Finger flow, challenges to contaminant transport models in soil, **10:36**
- Fingerprints, petroleum hydrocarbon characterization, **10:5**
- Funnel flow, challenges to contaminant transport models in soil, **10:36**
- Gas chromatography, petroleum hydrocarbon characterization, **10:5**
- Groundwater, contaminated transport models, **10:40**
- Hydrophilic
 - paved surfaces, contaminated transport models, **10:30**
 - soil, contaminant transport models, **10:37, 10:38**
- Hydrophobic, **10:37**
- Hysteresis, **10:34**
- Isoprenoid, petroleum hydrocarbon characterization, **10:10**
- Isotope fractionation, **10:25**
- Kinetics, **10:8**
- Lead isotopes, petroleum hydrocarbon characterization, **10:17**
- Liquid transport
 - paved surfaces, contaminated transport models, **10:30**
 - soil, contaminated transport models, **10:34**
- Metal inhibitor, age-dating chlorinated solvents, **10:23**
- Microbiology, **10:42**
- Micropores, challenges to contaminant transport models in soil, **10:36**
- MTBE, isotopic composition, **10:19**
- Natural and artificial preferential pathways, challenges to contaminant transport models in soil, **10:36**
- Nitrogen stable isotopes, petroleum hydrocarbon characterization, **10:20**
- Oxygenates, petroleum hydrocarbon characterization, **10:8**

FORENSICS—Cont'd

- Pathways, natural and artificial preferential pathways and challenges to contaminant transport models in soil, **10:36**
- Paved surfaces, contaminated transport models generally, **10:29 to 10:31**
- hydrophilic, **10:30**
- liquid transport through paved surfaces, **10:30**
- soil, contaminated transport models, below vapor transport through paved surfaces, **10:31**
- Permits, age-dating chlorinated solvents, **10:25**
- Petroleum hydrocarbon characterization
 - alkyl leads, **10:7**
 - biomarkers, **10:11**
 - BTEX degradation models, **10:14**
 - BTEX ratios, **10:13**
 - carbon/hydrogen/sulphur isotopes, **10:18**
 - chromatographic separation, **10:12**
 - dyes, **10:9**
 - fingerprints, **10:5**
 - gas chromatography, **10:5**
 - isoprenoid, **10:10**
 - kinetics, **10:8**
 - lead isotopes, **10:17**
 - MTBE, isotopic composition, **10:19**
 - nitrogen stable isotopes, **10:20**
 - oxygenates, **10:8**
 - phytane ratios, **10:12**
 - PIANO analysis, **10:15**
 - principal component analysis, **10:21**
 - pristane/phytane ratios, **10:12**
 - proprietary additives, **10:6**
 - sequestration, **10:10**
 - stable isotopes
 - generally, **10:16**
 - carbon/hydrogen/sulphur isotopes, **10:18**
 - lead isotopes, **10:17**
 - MTBE, isotopic composition, **10:19**
 - nitrogen, **10:20**
 - statistical and numerical analysis, source identification of petroleum hydrocarbons, **10:21**
 - water washing, **10:10**
 - weathering, **10:10**
- Phytane ratios, petroleum hydrocarbon characterization, **10:12**
- PIANO analysis, petroleum hydrocarbon characterization, **10:15**
- Preferential flow, challenges to contaminant transport models in soil, **10:36**
- Principal component analysis, petroleum hydrocarbon characterization, **10:21**
- Pristane/phytane ratios, petroleum hydrocarbon characterization, **10:12**
- Proprietary additives, petroleum hydrocarbon characterization, **10:6**

FORENSICS—Cont'd

- Radioactive isotopes. Petroleum hydrocarbon characterization, above
- Resistivity, **10:3**
- Scanning electronic microscope (SEM), **10:41**
- Sequestration, petroleum hydrocarbon characterization, **10:10**
- Soil, contaminated transport models
 - generally, **10:32 et seq.**
 - challenges to contaminant transport models in soil
 - generally, **10:35**
 - colloidal transport, **10:36, 10:37**
 - cosolvent transport, **10:38**
 - dissolution fingering, **10:36**
 - finger flow, **10:36**
 - funnel flow, **10:36**
 - hydrophilic, **10:37, 10:38**
 - micropores, **10:36**
 - model assumptions, **10:39**
 - natural and artificial preferential pathways, **10:36**
 - preferential flow, **10:36**
 - viscous flow, **10:36**
 - colloidal transport, challenges to contaminant transport models in soil, **10:36, 10:37**
 - cosolvent transport, challenges to contaminant transport models in soil, **10:38**
 - dissolution fingering, challenges to contaminant transport models in soil, **10:36**
 - finger flow, challenges to contaminant transport models in soil, **10:36**
 - funnel flow, challenges to contaminant transport models in soil, **10:36**
 - hydrophilic, **10:37, 10:38**
 - hydrophobic, **10:37, 10:38**
 - hysteresis, **10:34**
 - liquid transport, **10:34**
 - micropores, challenges to contaminant transport models in soil, **10:36**
 - model assumptions, challenges to contaminant transport models in soil, **10:39**
 - natural and artificial preferential pathways, challenges to contaminant transport models in soil, **10:36**
 - preferential flow, challenges to contaminant transport models in soil, **10:36**
 - tortuosity, **10:34**
 - vapor transport, **10:33**
 - viscous flow, challenges to contaminant transport models in soil, **10:36**
- Source identification
 - age dating and source identification perchlorate, **10:26**
 - dissolved nitrate, **10:27**

FORENSICS—Cont'd

- Stable isotope analysis, age dating chlorinated solvents, **10:25**
- Statistical and numerical analysis, source identification of petroleum hydrocarbons, **10:21**
- Tortuosity, **10:34**
- Vapor transport
 - paved surfaces, contaminated transport models, **10:31**
 - soil, contaminated transport models, **10:33**
- Viscous flow, challenges to contaminant transport models in soil, **10:36**
- Water washing, **10:10**
- Weathering, petroleum hydrocarbon characterization, **10:10**

FORESTED WETLANDS

Wetlands (this index)

FRACKING WASTEWATER

Shale oil wastewater. **Wastewater Treatment Unit Operations** (this index)

FREE OIL

Wastewater treatment unit operations, **6:53**

FREE-PHASE MATERIALS

Groundwater contaminant migration, **5:23**

FREE PRODUCT RECOVERY

Groundwater remediation, **5:54**

FRESHWATER MARSH

Wetlands, **9:20**

FUNCTIONAL GROUPS

Chemistry, **2:50**

FUNNEL FLOW

Forensics, challenges to contaminant transport models in soil, **10:36**

GAS CHROMATOGRAPHY

Forensics, petroleum hydrocarbon characterization, **10:5**

Sampling and analysis, **3:46 to 3:48**

GASES AND VAPORS

Air (this index)

GRADIENT

Hydraulic head, groundwater flow, **5:3**

GRAVIMETRIC MEASUREMENTS

Industrial hygiene, dust measurement and studies (1910 to 1920), **11:35**

GREENHOUSE GASES

Regulated air pollutants, **8:15**

GROUNDWATER

Generally, **5:1 to 5:64**

GROUNDWATER—Cont'd

- Advection, aqueous-phase contaminant migration, **5:16**
- Air-rotary drilling, groundwater investigations, **5:43**
- Analysis and modeling
 - generally, **5:29 to 5:37**
 - analytical solutions, **5:31**
 - conceptual site model, **5:30**
 - numerical models
 - generally, **5:32 to 5:37**
 - applications for decision making, **5:32, 5:33**
 - complexity of subsurface, **5:34**
 - ground water and and surface water, **5:37**
 - simple to complex model, **5:35**
 - uncertainty effects on decision making, **5:36**
 - numerical solutions, **5:32**
- Analytical solutions, analysis and modeling, **5:31**
- Aqueous phase. Contaminant migration, below
- Barriers, remediation through containment barriers, **5:57**
- Cable-tool drilling, groundwater investigations, **5:42**
- Caps, remediation through containment caps, **5:56**
- Conceptual site model, **5:30**
- Confined-aquifer pumping test, groundwater flow, **5:11**
- Containment. Remediation, below
- Contaminant migration
 - Generally, **5:13**
 - advection, aqueous phase, **5:16**
 - aqueous phase
 - generally, **5:14**
 - advection, **5:16**
 - contaminant plumes, **5:22**
 - degradation, **5:20**
 - diffusion, **5:18**
 - dispersion, **5:17**
 - dual porosity, **5:21**
 - radioactive decay, **5:20**
 - retardation, **5:19**
 - source term, **5:15**
 - contaminant plumes, aqueous phase, **5:22**
 - degradation, aqueous phase, **5:20**
 - dispersion, aqueous phase, **5:17**
 - DNAPLs, non-aqueous phase liquids, **5:25**
 - emerging contaminants, **5:27**
 - floaters, non-aqueous phase liquids, **5:24**
 - free-phase materials, **5:23**
 - heat transfer, **5:28**
 - LNAPLs, non-aqueous phase liquids, **5:24**
 - non-aqueous phase liquids
 - generally, **5:23**
 - DNAPLs, **5:25**

GROUNDWATER—Cont'd

- Contaminant migration—Cont'd
 - non-aqueous phase liquids—Cont'd
 - floaters, **5:24**
 - free-phase materials, **5:23**
 - LNAPLs, **5:24**
 - sinkers, **5:25**
 - radioactive decay, aqueous phase, **5:20**
 - recalcitrant contaminants, **5:26**
 - retardation, aqueous phase, **5:19**
 - sinkers, non-aqueous phase liquids, **5:25**
 - source term, aqueous phase, **5:15**
- Contaminant plumes, aqueous-phase contaminant migration, **5:22**
- Darcy's law, groundwater flow, **5:5**
- Degradation, aqueous-phase contaminant migration, **5:20**
- Direct push drilling technology, groundwater investigations, **5:47**
- Dispersion, aqueous-phase contaminant migration, **5:17**
- Dissolved plume control and remediation. Remediation, below
- DNAPLs, non-aqueous-phase liquids contaminant migration, **5:25**
- Drilling. Investigations, below
- Dual rotary drilling, investigations, **5:45**
- Excavation, remediation, **5:53**
- Floaters, non-aqueous-phase liquids contaminant migration, **5:24**
- Flow. Groundwater flow, below
- Flow in fractures, **5:7**
- Flow nets, groundwater flow, **5:6**
- Forensics, contaminated transport models, **10:40**
- Free-phase materials, contaminant migration, **5:23**
- Free product recovery, remediation, **5:54**
- Gradient and hydraulic head, groundwater flow, **5:3**
- Groundwater flow
 - aquifer pumping tests
 - generally, **5:9**
 - confined aquifer, **5:11**
 - single well tests, **5:12**
 - slug tests, **5:12**
 - unconfined aquifer, **5:10**
 - confined-aquifer pumping test, **5:11**
 - Darcy's law, **5:5**
 - flow nets, **5:6**
 - fractures, **5:7**
 - gradient, hydraulic head and, **5:3**
 - hydraulic conductivity, **5:4**
 - hydraulic head and gradient, **5:3**
 - permeability, **5:4**
 - porosity, **5:4**
 - single-well pumping test, **5:12**

GROUNDWATER—Cont'd

- Groundwater flow—Cont'd
 - slug tests, **5:12**
 - steady state, **5:8**
 - transient conditions, **5:8**
 - transmissivity, **5:4**
 - unconfined-aquifer pumping test, **5:10**
- Groundwater/surface water interaction, **5:64**
- Hollow-stem-auger drilling, groundwater investigations, **5:41**
- Horizontal directional drilling, groundwater investigations, **5:48**
- Hydraulic conductivity, groundwater flow, **5:4**
- Hydraulic head and gradient, groundwater flow, **5:3**
- Hydrologic cycle, **5:1**
- Initial data review, groundwater investigations, **5:38**
- Interaction with surface water, **5:64**
- Investigations
 - air-rotary drilling, **5:43**
 - cable-tool drilling, **5:42**
 - direct push drilling technology, **5:47**
 - drilling
 - generally, **5:40**
 - air rotary, **5:43**
 - cable tool, **5:42**
 - direct push technology, **5:47**
 - dual rotary, **5:45**
 - hollow stem auger, **5:41**
 - horizontal directional drilling, **5:48**
 - mud rotary, **5:44**
 - sonic, **5:46**
 - dual rotary drilling, **5:45**
 - hollow-stem-auger drilling, **5:41**
 - horizontal directional drilling, **5:48**
 - initial data review, **5:38**
 - mud-rotary drilling, **5:44**
 - program planning, **5:39**
 - sampling groundwater, **5:50**
 - sonic drilling, **5:46**
 - well installation monitoring, **5:49**
- LNAPLs, non-aqueous phase liquids contaminant migration, **5:24**
- Mass flux and mass discharge, **5:62**
- Modeling. Analysis and modeling, above
- MTBE, **10:8**
- Mud-rotary drilling, groundwater investigations, **5:44**
- Non-aqueous phase liquids. Contaminant migration, above
- Numerical solutions, analysis and modeling, **5:32**
- Occurrence of groundwater, **5:2**
- Permeability, groundwater flow, **5:4**
- Porosity, groundwater flow, **5:4**

GROUNDWATER—Cont'd

- Program planning, groundwater investigations, **5:39**
 - Pump and treat, limitations of pump and treat for remediation, **5:51**
 - Pumping tests. Groundwater flow, above
 - Radioactive decay, aqueous phase contaminant migration, **5:20**
 - Remediation
 - barriers, containment, **5:57**
 - caps, containment, **5:56**
 - containment
 - barriers, **5:57**
 - caps, **5:56**
 - dissolved plume control and remediation
 - enhanced remediation methods, **5:60**
 - hydraulic control, pump and treat, **5:59**
 - In situ* remediation methods, **5:61**
 - emerging approaches, **5:63**
 - excavation, **5:53**
 - free product recovery, **5:54**
 - pump and treat, limitations of, **5:51**
 - removal
 - excavation, **5:53**
 - free product recovery, **5:54**
 - soil vapor extraction, **5:55**
 - soil vapor extraction, **5:55**
 - source control
 - containment, above
 - removal, above
 - treatment, **5:58**
 - Removal. Remediation, above
 - Retardation, aqueous phase contaminant migration, **5:19**
 - Sampling and Analysis** (this index)
 - Single-well pumping test, groundwater flow, **5:12**
 - Sinkers, non-aqueous phase liquids contaminant migration, **5:25**
 - Slug tests, groundwater flow, **5:12**
 - Soil vapor extraction, remediation, **5:55**
 - Sonic drilling, investigations, **5:46**
 - Source control. Remediation, above
 - Source term, aqueous-phase contaminant migration, **5:15**
 - Steady state, groundwater flow, **5:8**
 - Surface water/groundwater interaction, **5:64**
 - Transient conditions, groundwater flow, **5:8**
 - Transmissivity, groundwater flow, **5:4**
 - Unconfined-aquifer pumping test, groundwater flow, **5:10**
 - Well installation monitoring, groundwater investigations, **5:49**
- GROUNDWATER/SURFACE WATER INTERACTION**
- Generally, **5:64**

HAZARD IDENTIFICATIONRisk assessment, **4:2 to 4:7****HAZARDOUS AIR POLLUTANTS**Regulated air pollutants, **8:11****HAZARD QUOTIENTS**Risk assessment, **4:37****HEALTH OF WORKER**Protection. **Industrial Hygiene** (this index)**HEAVY METALS**Surface water quality, classification and measurement of heavy metals (total and dissolved), **6:40**Wastewater, heavy metals removal through physical-chemical treatment system, **6:77****HERBACEOUS WETLANDS**Generally, **9:18 to 9:20****Wetlands** (this index)**HERBICIDES**Analytical methods, **3:86****HETEROATOMIC INORGANIC COMPOUNDS**Chemistry, **2:55****HIGH PERFORMANCE LIQUID CHROMATOGRAPHY**Sampling and analysis, **3:49 to 3:51****HISTORICAL PERSPECTIVE OF INDUSTRIAL HYGIENE**Generally, **11:1 to 11:39****HOLDING TIMES**Collection of samples, **3:27, 3:31****HOLLOW-STEM-AUGER DRILLING**Groundwater investigations, **5:41****HOMOATOMIC INORGANIC COMPOUNDS**Chemistry, **2:54****HORIZONTAL DIRECTIONAL DRILLING**Groundwater investigations, **5:48****HUMAN HEALTH RISK ASSESSMENT**Ecological risk assessment (ERA), **4:31****HYDRAULIC CONDUCTIVITY**Groundwater flow, **5:4****HYDRAULIC HEAD AND GRADIENT**Groundwater flow, **5:3****HYDRIC SOIL**Wetlands, **9:28 to 9:31****Wetlands** (this index)**HYDROCARBONS**Chemistry, **2:39****HYDROCARBON SUBSTITUTES**Chemistry, **2:40****HYDROGENATION**Chemistry, **2:34****HYDROLOGIC CYCLE**Groundwater, **5:1****HYDROLOGY**Wetlands, **9:24 to 9:27****HYDROLYSIS**Chemistry, **2:33****HYDROPHILIC**Forensics, **10:30, 10:37, 10:38****HYDROPHOBIC**Forensics, **10:30, 10:37, 10:38****HYDROPHYTIC VEGETATION**Wetlands, **9:32 to 9:35****HYDROTHERMAL PROCESSES**Physical-chemical wastewater treatment system, **6:79****HYSTERESIS**Forensics, **10:34****IDENTIFICATION**Wetlands, **9:23 et seq.****IMMOBILIZATION****Solid Waste and Contaminated Soil** (this index)**IMMUNOASSAY ANALYTICAL METHOD**Sampling and analysis, **3:80****INCINERATORS**Thermal treatment of solid waste or contaminated soil, **7:24****INDOOR AIR**Sampling and analysis, **3:15****INDUCTIVELY COUPLED PLASMA**Sampling and analysis, **3:56****INDUSTRIAL HYGIENE**Generally, **11:1 to 11:39**Action levels, **11:7**

Administrative controls

duration of exposure, **11:6**hierarchy of controls, **11:6**Air contaminants, sampling and analysis, OSHA standards (29 C.F.R. § 1910.1000 and certain Subpt Z standards), **11:19**Air sampling calculations and comparison of results with standards, OSHA standards, **11:22**Analysis, early dust measurement and studies, **11:33**

INDUSTRIAL HYGIENE—Cont'd

- Analytical instruments and methods, OSHA standards, **11:21**
- Asbestos
 - historic state of knowledge, **11:38**
 - OSHA standards (29 C.F.R. § 1910.1001), **11:23**
 - sampling results, asbestos dust measurements (1930 to 1945), **11:37**
- Ceiling limits, **11:7**
- Certification
 - areas, **11:3**
 - industrial hygienists, **11:3**
- Confined spaces OSHA standards (29 C.F.R. § 1910.146), **11:15**
- Context of industrial hygiene, **11:2**
- Definitions
 - industrial hygiene, **11:2**
 - industrial hygienists, **11:3**
- Derivation of OELs, **11:8**
- Duration of exposure, administrative controls, **11:6**
- Dust measurement and studies
 - analysis methods, **11:33**
 - development of medical knowledge, **11:29**
 - Dusty Trades studies (1920 to 1940), **11:36**
 - early gravimetric measurements (1910 to 1920), **11:35**
 - early instruments and methods
 - analysis methods, **11:33**
 - efficiency of measurement, **11:31**
 - efficiency of sampling collection, **11:32**
 - particle size, **11:34**
 - respiratory deposition, **11:35**
 - sampling collection efficiency, **11:32**
 - sampling instruments, **11:30**
 - early sampling instruments, **11:30**
 - efficiency of early measurement, **11:31**
 - historical perspective, **11:4, 11:29**
 - non-asbestos mineral dust (1920 to 1940), **11:36**
 - particle size, early measurement, **11:34**
 - respiratory deposition, early study, **11:35**
 - roles of dust in diseases, development of medical knowledge, **11:29**
 - sampling results
 - asbestos dust measurements (1930 to 1945), **11:37**
 - Dusty Trades studies (1920 to 1940), **11:36**
 - early gravimetric measurements (1910 to 1920), **11:35**
 - non-asbestos mineral dust (1920 to 1940), **11:36**
 - Dusty Trades dust studies (1920 to 1940), **11:36**
 - Efficiency of early dust measurement, **11:31**
 - 8 hour time-weighted averages (TWAs), **11:7**

INDUSTRIAL HYGIENE—Cont'd

- Engineering controls, generally, **11:6**
- Ergonomics, OSHA standards, **11:27**
- Evolution of field, **11:4**
- Exposure
 - duration of exposure, administrative controls, **11:6**
 - occupational exposure limits (OELs), below Gravimetric measurements of dust (1910 to 1920), **11:35**
- Hazard and control banding, OSHA standards, **11:28**
- Hazard communication OSHA standards (29 C.F.R. § 1910.1200), **11:25**
- Hazardous and toxic substances OSHA standards (29 C.F.R. § 1910, Subpt Z), **11:16 to 11:23**
- Hierarchy of controls
 - administrative controls, **11:6**
 - engineering controls, **11:6**
- Historical perspective
 - generally, **11:4**
 - citations of historic literature, bearing on state of the art, examples of historic literature and, **11:39**
 - dust measurement and studies, **11:4, 11:29 to 11:38**
 - passage of employment compensation laws, **11:4**
 - state of the art, examples of historic literature and, **11:38**
- Industrial hygienists
 - certification, **11:3**
 - definitions, **11:3**
- Ionizing radiation OSHA standards (29 C.F.R. § 1910.1096), **11:24**
- Laboratory hazardous chemicals, occupational exposure OSHA standard (29 C.F.R. § 1910.1450), **11:26**
- Medical knowledge development, dust measurement and studies, **11:29**
- Noise, OSHA standards (29 C.F.R. § 1910.95), **11:11**
- Non-asbestos mineral dust (1920 to 1940), **11:36**
- Nonionizing radiation OSHA standards (29 C.F.R. § 1910.97), **11:12**
- Occupational exposure limits (OELs)
 - generally, **11:7, 11:8**
 - company-developed, **11:7**
 - derivation, **11:8**
 - foreign countries, **11:7**
 - maximum allowable concentrations (MACs), **11:7**
 - publication, **11:7, 11:8**
 - standard setting organizations, **11:7**
 - threshold limit values (TLVs), **11:7**

INDUSTRIAL HYGIENE—Cont'd

- Occupational Safety and Health Administration standards
 - air sampling calculations and comparison of results with standards, toxic and hazardous substances, **11:22**
 - analytical instruments and methods, toxic and hazardous substances, **11:21**
 - asbestos (29 C.F.R. § 1910.1001), **11:23**
 - confined spaces (29 C.F.R. § 1910.146), **11:15**
 - ergonomics, **11:27**
 - general industry, generally, **11:9 to 11:28**
 - hazard and control banding, **11:28**
 - hazard communication (29 C.F.R. § 1910.1200), **11:25**
 - ionizing radiation (29 C.F.R. § 1910.1096), **11:24**
 - laboratory hazardous chemicals, occupational exposure (29 C.F.R. § 1910.1450), **11:26**
 - noise (29 C.F.R. § 1910.95), **11:11**
 - nonionizing radiation (29 C.F.R. § 1910.97), **11:12**
 - occupational exposure to hazardous chemicals in laboratories (29 C.F.R. § 1910.1450), **11:26**
 - process safety management (29 C.F.R. § 1910.119), **11:13**
 - regulatory system, generally, **11:1**
 - respiratory protection (29 C.F.R. § 1910.134), **11:14**
 - sampling and analysis of air contaminants (29 C.F.R. § 1910.1000 and certain Subpt Z standards), **11:19**
 - sampling instruments and methods, toxic and hazardous substances, **11:20**
 - toxic and hazardous substances (29 C.F.R. § 1910, Subpt Z), **11:16 to 11:23**
 - ventilation (29 C.F.R. § 1910.94), **11:10**
- Particle size, early measurement, **11:34**
- Personal protective equipment, hierarchy of controls, **11:6**
- Process safety management OSHA standards (29 C.F.R. § 1910.119), **11:13**
- Regulatory systems
 - Environmental Protection Agency, generally, **11:1**
 - Mine Safety and Health Administration, **11:1**
 - Occupational Safety and Health Administration, **11:1**
- Respiratory deposition, early study, **11:35**
- Respiratory protection OSHA standards (29 C.F.R. § 1910.134), **11:14**
- Roles of dust in diseases, development of medical knowledge, **11:29**
- Sampling instruments and methods, toxic and hazardous substances, **11:20**
- Short-term exposure limits (STELs), **11:7**

INDUSTRIAL HYGIENE—Cont'd

- Toxic and hazardous substances OSHA standards (29 C.F.R. § 1910, Subpt Z), **11:16 to 11:23**
 - Ventilation, OSHA standards (29 C.F.R. § 1910.94), **11:10**
- INDUSTRIAL HYGIENISTS**
Generally, **11:3**
- INFERENCE STATISTICS**
Numerical Notations and Basic Statistics (this index)
- INFRARED SPECTROSCOPY**
Sampling and analysis, **3:63**
- INORGANIC COMPOUNDS**
Chemistry (this index)
Sampling and Analysis (this index)
- INVESTIGATIONS**
Groundwater (this index)
- ION CHROMATOGRAPHY**
Sampling and analysis, **3:52 to 3:54**
- ION-EXCHANGE SYSTEMS**
Wastewater Treatment Unit Operations (this index)
- IONIC BONDING**
Chemistry, **2:23**
- IONS**
Physics, **2:7**
- IRON REDUCTION**
Biological treatment of solid waste and contaminated soil, **7:48**
- ISOLATION TECHNOLOGIES**
Generally, **7:20, 7:71 to 7:76**
Barriers, **7:73 to 7:76**
Caps and covers, **7:72**
Sheet pilings, **7:74**
Slurry walls, **7:75**
Vapor barrier, **7:76**
- ISOMERIC ALKYL GROUPS**
Chemistry, **2:45**
- ISOMERS**
Chemistry, **2:41**
- ISOPRENOIDS**
Chemistry, **2:75 to 2:79**
Forensics, petroleum hydrocarbon characterization, **10:10**
- ISOTOPE FRACTIONATION**
Forensics, **10:25**
- ISOTOPES**
Chemistry, **2:65**

INDEX

ISOTOPEs—Cont'd

Forensics, **10:16**

Physics, **2:5**

JURISDICTION

Wetlands, **9:1 et seq.**

KINETICS

Forensics, **10:8**

LABORATORY QUALIFIERS

Sampling and analysis, **3:126 to 3:128**

LANDSCAPE POSITION

Wetlands, **9:6 to 9:10**

LARGE DATA SETS

Numerical notations and basic statistics, assessing consistency and usability of large data sets, **1:39**

LEAD ISOTOPEs

Forensics, petroleum hydrocarbon characterization, **10:17**

LEAK DETECTION AND REPAIR (LDAR)

Air pollution, estimating source emissions, **8:29**
emerging/unconventional methods, **8:30**

LIMITATIONS

Numerical Notations and Basic Statistics (this index)

LIQUID TRANSPORT

Forensics (this index)

LNAPLs (LIGHT NON-AQUEOUS PHASE LIQUIDS)

Groundwater, non-aqueous phase liquids contaminant migration, **5:24**

Solid waste and contaminated soil, **7:52**

LOCAL GOVERNMENTS

Wetlands definition, **9:4**

LOGARITHMS

Numerical notations and basic statistics, **1:5**

LOGNORMAL

Numerical notations and basic statistics, Lognormal and other distributions, **1:17**

MAGNITUDE

Mathematical and scientific notation, **1:4**

MAJOR IONS

Chemistry, **2:77**

MANGANESE REDUCTION

Biological treatment of solid waste and contaminated soil, **7:47**

MANUAL SAMPLING

Direct air pollutant measurement, **8:26**

MASS

Physics, **2:12**

MASS DISCHARGE

Groundwater, **5:62**

MASS FLUX

Groundwater, **5:62**

MASS SPECTROMETRY

Chemical analyses, **3:56**

tandem, **3:56**

MASS SPECTROSCOPY

Sampling and analysis, **3:55**

MATERIAL BALANCES

Air pollution, quantifying source emissions, **8:23**

MATRIX INTERFERENCE

Sampling and analysis quality assurance and control, **3:104**

MATTER

Physics, **2:2**

MAXIMUM ALLOWABLE CONCENTRATIONS (MACs)

Industrial hygiene, **11:7**

MEMBRANE BIOLOGICAL REACTORS (MBR)

Wastewater treatment unit operations, **6:66**

MEMBRANE TECHNOLOGIES

Wastewater Treatment Unit Operations (this index)

MERCURY

Air, types of regulated pollutants, **8:11**

METAL INHIBITOR

Forensics, **10:23**

METALS

Analytical methods, **3:91**

Chemistry, **2:78**

METHANOGENESIS AND FERMENTATION

Biological treatment of solid waste and contaminated soil, **7:51**

MICROBIOLOGY

Biological treatment of solid waste and contaminated soil, **7:44 to 7:51**

Forensics, **10:42**

MICROFILTRATION

Wastewater treatment unit operations, **6:83**

MICROPORES

Forensics, challenges to contaminant transport models in soil, **10:36**

MITIGATION

Wetlands (this index)

MIXTURES

Physics, **2:4**

MODELING

Air (this index)

Groundwater (this index)

MOLE

Building blocks and rules of matter, **2:8**

MOLECULES

Physics, **2:6**

MONITORING

Air (this index)

Numerical notations and basic statistics, review of monitoring histories, **1:40**

MOVING BED BIOLOGICAL REACTORS (MBBR)

Wastewater treatment unit operations, **6:67**

MTBE

Definition, **10:8**

Forensics, isotopic composition, **10:19**

Groundwater, **10:8**

MUD-ROTARY DRILLING

Groundwater investigations, **5:44**

MUNICIPAL WASTE INCINERATORS

Thermal treatment of solid waste or contaminated soil, **7:28**

MYCOLOGICAL PROCESSES

Biological treatment of solid waste and contaminated soil, **7:53**

NADIONUCLIDES AND HALF-LIFE

Nuclear chemistry, **2:83**

NANOFILTRATION

Wastewater treatment unit operations, **6:83**

NANOSUBSTANCES

Chemistry, **2:64**

NANOTECHNOLOGY

Chemistry, **2:80**

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

Analytical methods, **3:77**

NEUTRALIZATION

Wastewater treatment unit operations, **6:52**

NITRATE REDUCTION

Biological treatment of solid waste and contaminated soil, **7:46**

NITROGEN

Removal from wastewater. **Wastewater Treatment Unit Operations** (this index)

Surface water quality, classification and measurement of nitrogen pollutants, **6:26**

NITROGEN STABLE ISOTOPES

Forensics, petroleum hydrocarbon characterization, **10:20**

NON-AQUEOUS PHASE LIQUIDS

Groundwater (this index)

NONCARCINOGENS

Dose-response assessment, **4:9**

NOTATIONS, NUMERICAL

Numerical Notations and Basic Statistics (this index)

NUCLEAR CHEMISTRY

Generally, **2:81**

Nadionuclides and half-life, **2:83**

Radioactive decay, types of, **2:82**

Radon, **2:84**

NUMERICAL NOTATIONS AND BASIC STATISTICS

Generally, **1:1 et seq.**

Accuracy, **1:6**

ANOVA and t-Test, comparisons of data sets, **1:23**

Applications. Statistical fundamentals, below
Assessing consistency and usability of large data sets, **1:39**

Bayes' Theorem and conditional probability, **1:22**

Censored data, when measurements are not numbers, **1:28**

Central tendencies, descriptive statistics, **1:14**

Characterization of soil quality and water quality/levels, **1:33**

Comparisons of data sets (ANOVA and t-Test), **1:23**

Comparisons to standards and threshold levels, **1:38**

Conditional probability, **1:22**

Conditional probability and Bayesian statistics, **1:21**

Consistency, **1:9**

Consistency and usability of large data sets, assessing, **1:39**

Contamination, evidence of (RCRA analysis), **1:35**

Control charts, statistical fundamentals, **1:25**

Conversions, **1:8**

Correlated data, **1:31**

Data sets, assessing consistency and usability of large, **1:39**

Decimal system, **1:4**

NUMERICAL NOTATIONS AND BASIC STATISTICS—Cont'd

Decision-making, **1:1 et seq.**
 Descriptive statistics. Statistical fundamentals, below
 Design of sampling programs, **1:34**
 Developing standards and threshold levels, **1:37**
 Dimensional analysis, **1:9**
 Distributions, generally, **1:13, 1:17, 1:27**
 Environmental decision-making, **1:1 et seq.**
 Environmental statistics. Statistical fundamentals, below
 Estimation and confidence intervals, inferential statistics, **1:18**
 Evidence of contamination (RCRA analysis), **1:35**
 Exponential notation, **1:4**
 Extreme values, **1:29**
 Fundamentals, statistical. Statistical fundamentals, below
 Inferential statistics. Statistical fundamentals, below
 Large data sets, assessing consistency and usability of, **1:39**
 Limitations, generally, **1:26 to 1:31**
 Logarithms, **1:5**
 Lognormal and other distributions, **1:17**
 Magnitude, **1:4**
 Mathematical and scientific notation
 generally, **1:3**
 accuracy, **1:6**
 decimal system, **1:4**
 exponential notation, **1:4**
 logarithms, **1:5**
 magnitude, **1:4**
 precision, **1:6**
 significant digits, **1:6**
 Monitoring histories, review of, **1:40**
 Monitoring optimization and monitored natural attenuation, **1:40**
 Notation. Mathematical and scientific notation, above
 Other distributions, **1:16**
 Precision, **1:6**
 Range, **1:15**
 RCRA analysis, evidence of contamination, **1:35**
 Regression analysis, **1:24**
 Resource Conservation and Recovery Act (RCRA), evidence of contamination, **1:35**
 Review of monitoring histories, **1:40**
 Risk assessment, **1:36**
 Samples and sample types, **1:30, 1:34**
 Sampling programs, design of, **1:34**
 Scientific notation. Mathematical and scientific notation, above
 Significant digits, **1:6**

NUMERICAL NOTATIONS AND BASIC STATISTICS—Cont'd

Soil quality, characterization, **1:33**
 Standard deviations, **1:15**
 Standards and threshold levels, **1:37, 1:38**
 Statistical fundamentals
 generally, **1:10, 1:11**
 applications
 additional options, **1:24**
 trend (regression) analysis, **1:24**
 central tendencies, descriptive statistics, **1:14**
 comparisons of data sets (ANOVA and t-Test), **1:23**
 concepts of basic statistics
 descriptive statistics, below in this group
 inferential statistics, below in this group
 control charts, **1:25**
 descriptive statistics
 central tendencies, **1:14**
 distributions, **1:13**
 variables, **1:13**
 distributions, descriptive statistics, **1:13, 1:17**
 estimation and confidence intervals, inferential statistics, **1:18**
 graphs, **1:22**
 inferential statistics
 estimation and confidence intervals, **1:18**
 statistical significance, **1:20**
 Lognormal and other distributions, **1:17**
 other distributions, **1:16**
 other interval estimation techniques, **1:19**
 population, **1:12**
 sample, **1:12**
 statistical significance, inferential statistics, **1:20**
 tables, **1:22**
 trend (regression) analysis, **1:24**
 variability, measures of (range, variance, and standard deviations), **1:15**
 variables, descriptive statistics, **1:13**
 Statistical significance, inferential statistics, **1:20**
 Statistical uses, generally, **1:32 to 1:40**
 Statistics, generally. Statistical fundamentals, above
 Testing distribution—normal, lognormal, or neither, **1:27**
 Threshold levels, **1:37, 1:38**
 Trend (regression) analysis, **1:24**
 Units of measurement, conversions, and dimensional analysis, **1:7 to 1:9**
 Usability of large data sets, assessing consistency and, **1:39**
 Uses, generally, **1:32 to 1:40**
 Variability, measures of (range, variance, and standard deviations), **1:15**
 Variables, descriptive statistics, **1:13**

NUMERICAL NOTATIONS AND BASIC STATISTICS—Cont'd

- Variance, **1:15**
- Veracity of statistics, **1:41**
- Water quality/levels, characterization, **1:33**

NUMERICAL SOLUTIONS

- Groundwater analysis and modeling, **5:32**

NUTRIENT REMOVAL

- Wastewater Treatment Unit Operations** (this index)

OCCUPATIONAL SAFETY AND HEALTH

- Industrial Hygiene** (this index)

ODOR

- Surface water quality, classification and measurement of odor as pollutant, **6:38**

OIL AND GREASE (O & G)

- Surface water quality, classification and measurement of oil and grease (O & G) as pollutant, **6:24**
- Wastewater treatment unit operations, oil removal, **6:53, 6:102**

ORGANIC COMPOUNDS

- Chemistry** (this index)
- Sampling and Analysis** (this index)

OTHER DISTRIBUTION

- Descriptive statistics, **1:16**

OXIDATION

- Generally, **7:15, 7:56 to 7:60**
- Application of oxidants, **7:59**
- Available oxidants, **7:57**
- Health and safety when using oxidants, **7:60**
- Use of oxidants, **7:58**

OXYGENATES

- Forensics, petroleum hydrocarbon characterization, **10:8**

OXYGEN DEPLETION

- Surface Water Quality** (this index)

OXYGEN UTILIZATION

- Biological treatment of solid waste and contaminated soil, **7:45**

OZONE-DEPLETING CHEMICALS

- Regulated air pollutants, **8:14**

PARAMETRIC MONITORING

- Air pollution, estimating source emissions, **8:28**

PARTICULATE MATTER

- Air** (this index)

PARTITIONING

- Physics, **2:20**

PATHOGENS

- Surface Water Quality** (this index)

PATHWAYS

- Forensics, natural and artificial preferential pathways and challenges to contaminant transport models in soil, **10:36**

PAVED SURFACES

- Contaminated transport models. **Forensics** (this index)

PCBs

- Analytical methods, **3:85**

PER- AND POLYFLUOROALKYL SUBSTANCES

- Chemistry, **2:73**

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

- Surface water quality pollutant categories and effects on surface waters, **6:45**

PERIODIC TABLE OF ELEMENTS

- Physics, **2:9**

PERMEABILITY

- Groundwater flow, **5:4**

PERMITS

- Forensics, **10:25**

PERSONAL CARE PRODUCTS

- Surface water quality, **6:47**

PERSONAL PROTECTIVE EQUIPMENT

- Industrial hygiene, **11:6**

PESTICIDES

- Analytical methods, **3:85**
- Chemistry, **2:74**
- Surface water quality, classification and measurement of pesticides as pollutants, **6:41**

PETROLEUM HYDROCARBONS

- Analytical methods, **3:88 to 3:90**
- Characterization. **Forensics** (this index)
- Chemistry, **2:68**
- Forensics** (this index)

PH

- Chemical bonding, **2:24**
- Surface water quality, classification and measurement of pH as a pollutant, **6:25**

PHARMACEUTICALS

- Surface water quality, **6:47**

PHENOLS

- Chemistry, **2:70**

PHOSPHORUS

- Surface water quality, classification and measurement of phosphorus as pollutant, **6:27**
- Wastewater treatment unit operations, phosphorus removal, **6:86**

PHYSICAL-CHEMICAL TREATMENT SYSTEM

- Solid Waste and Contaminated Soil** (this index)
- Wastewater Treatment Unit Operations** (this index)

PHYSICS

- Generally, **2:1 to 2:20**
- Absorption, **2:18**
- Adsorption, **2:18**
- Atoms, **2:5**
- Building blocks and rules of matter
 - atoms, **2:5**
 - compounds, **2:6**
 - conservation of matter, **2:10**
 - elements, **2:5**
 - ions, **2:7**
 - isotopes, **2:5**
 - matter, **2:2**
 - mixtures, **2:4**
 - molecules, **2:6**
 - periodic table of elements, **2:9**
 - substantives, **2:3**
 - the mole, **2:8**
- Changes in state of matter, **2:14**
- Compounds, **2:6**
- Conservation of matter, **2:10**
- Density, **2:12**
- Diffusion, **2:19**
- Elements, **2:5**
- Ions, **2:7**
- Isotopes, **2:5**
- Mass, **2:12**
- Matter, **2:2**
- Mixtures, **2:4**
- Molecules, **2:6**
- Nuclear physics. **Nuclear Chemistry** (this index)
- Partitioning, **2:20**
- Periodic table of elements, **2:9**
- Physical properties of matter
 - absorption, **2:18**
 - adsorption, **2:18**
 - changes in state of matter, **2:14**
 - definition, **2:11**
 - density, **2:12**
 - diffusion, **2:19**
 - mass, **2:12**
 - partitioning, **2:20**
 - solubility, **2:20**
 - specific gravity, **2:12**

PHYSICS—Cont'd

- Physical properties of matter—Cont'd
 - states of matter
 - changes in state of matter, **2:14**
 - definitions, **2:13**
 - sublimation, **2:17**
 - vapor pressure, **2:15**
 - volatility, **2:16**
 - weight, **2:12**
- Solubility, **2:20**
- Specific gravity, **2:12**
- States of matter. Physical properties of matter, above
- Sublimation, **2:17**
- Substantives, **2:3**
- Vapor pressure, **2:15**
- Volatility, **2:16**
- Weight, **2:12**

PHYTANE

- Ratios, petroleum hydrocarbon characterization, **10:12**

PHYTOLOGICAL PROCESSES

- Biological treatment of solid waste and contaminated soil, **7:54**

PIANO ANALYSIS

- Forensics, petroleum hydrocarbon characterization, **10:15**

POLLUTION

- Air** (this index)
- Classification and measurement of pollutants
 - surface water quality, **6:46**
- Groundwater** (this index)
- Risk Assessment** (this index)
- Sampling and Analysis** (this index)
- Surface Water Quality** (this index)
- Wastewater Treatment Unit Operations** (this index)

POLYCHLORINATED BIPHENYLS (PCBS)

- Chemistry, **2:72**
- Surface water quality, classification and measurement of PCBs as pollutants, **6:43**

POLYCYCLIC HYDROCARBONS (PAHs)

- Analytical methods, **3:87**

POLYMERS

- Chemistry, **2:51, 2:63**

POLYNUCLEAR AROMATIC HYDROCARBONS (PNAs)

- Analytical methods, **3:87**
- Chemistry, **2:49, 2:71**
- Surface water quality, classification and measurement of PNAs, **6:42**

POPULATION DYNAMICS

Aquatic ecosystems, **6:7**

POROSITY

Groundwater flow, **5:4**

PRECISION

Mathematical and scientific notation, **1:6**

Quality assurance and control of sampling and analysis, **3:105**

PREFERENTIAL FLOW

Forensics, challenges to contaminant transport models in soil, **10:36**

PREFERENTIAL PATHWAYS

Forensics, natural and artificial preferential pathways and challenges to contaminant transport models in soil, **10:36**

PREPARATION OF SAMPLES

Sampling and Analysis (this index)

PRESERVATION OF SAMPLES

Sampling and Analysis (this index)

PRIMARY CLARIFICATION

Wastewater treatment unit operations, **6:51**

PRINCIPAL COMPONENT ANALYSIS

Forensics, petroleum hydrocarbon characterization, **10:21**

PRIORITY POLLUTANTS

Surface water quality, classification and measurement of priority pollutants, **6:44**

PRISTANE/PHYTANE RATIOS

Forensics, petroleum hydrocarbon characterization, **10:12**

PROBABILISTIC AND DETERMINISTIC RISK ASSESSMENTS

Introduction to Probabilistic Risk Assessment, **4:24**

Risk Assessment (this index)

PROPRIETARY ADDITIVES

Forensics, petroleum hydrocarbon characterization, **10:6**

PUMP AND TREAT

Groundwater remediation, limitations of pump and treat, **5:51**

PUMPING TESTS

Groundwater (this index)

QUALITY ASSURANCE AND CONTROL

Sampling and Analysis (this index)

QUANTITATION LIMITS

Sampling and Analysis (this index)

QUICKLIME

Thermal treatment of solid waste or contaminated soil, **7:39**

RADICALS

Chemistry, **2:58**

RADIOACTIVE DECAY

Groundwater, aqueous phase contaminant migration, **5:20**

Nuclear chemistry, **2:82**

RADIOACTIVE ISOTOPES

Forensics (this index)

RADIONUCLIDES

Surface water quality, classification and measurement of radionuclides as pollutants, **6:39**

RADON

Nuclear chemistry, **2:84**

RANGE

Numerical notations and basic statistics, **1:15**

RCRA ANALYSIS

Numerical notations and basic statistics, evidence of contamination, **1:35**

REACTIONS

Chemistry (this index)

REARRANGEMENT REACTIONS

Chemistry, **2:30**

REDUCTIVE DECHLORINATION

Biological treatment of solid waste and contaminated soil, **7:49**

REGRESSION ANALYSIS

Numerical notations and basic statistics, **1:24**

REMEDIATION

Groundwater (this index)

REPRESENTATIVE SAMPLES

Sampling and analysis, **3:3**

REPRODUCIBILITY

Sampling, **3:4**

RESISTIVITY

Forensics, **10:3**

RESTORATION

Wetlands (this index)

RETARDATION

Groundwater, aqueous phase contaminant migration, **5:19**

REVERSE OSMOSIS

Wastewater treatment unit operations, **6:81**

RINSE BLANKS

Quality control, **3:37**

RISK ASSESSMENT

Generally, **4:1 to 4:38**

Aggregate and cumulate risk assessment, **4:21**

Applications, ecological risk assessment (ERA), **4:28**

Benchmarks, ecological risk assessment and human health, **4:37**

Bioassays, **4:3**

Biomonitoring, **4:15**

Carcinogens, dose-response assessment, **4:9**

Characterization of risk

generally, **4:16 et seq.**

aggregate and cumulate risk assessment, **4:21**

cumulative risk, **4:22**

ecological risk assessment (ERA), **4:37**

environmental justice, **4:22**

improving risk characterization, **4:20**

mathematical expressions of risk, **4:17**

numerical estimates of risk, **4:17**

risk-based target levels, **4:18**

target levels, risk-based, **4:18**

toxicogenomics, **4:23**

uncertainty, **4:19**

variability, **4:18, 4:19**

Communication in ecological risk management, **4:38**

Cumulative risk, **4:22**

Deterministic risk assessments. Probabilistic and deterministic risk assessments, below

Dose estimation, **4:14**

Dose-response assessment

generally, **4:8 et seq.**

carcinogens, **4:9**

dose-response relationships, **4:8**

noncarcinogens, **4:10**

relationships, dose-response, **4:8**

Dose-response relationships, dose-response assessment, **4:8**

Drivers, ecological risk assessment (ERA), **4:28**

Duration of exposure, **4:13**

Ecological risk assessment (ERA)

applications, **4:28**

characterization of risk, **4:37**

characterization of risk under ERA, **4:37**

communication, **4:38**

definition and structure

generally, **4:29**

human health risk assessment, **4:31**

types of ERA, **4:30**

disparity in benchmarks, **4:37**

drivers, **4:28**

effects assessment, **4:35**

exposure assessment, **4:36**

RISK ASSESSMENT—Cont'd

Ecological risk assessment (ERA)—Cont'd

hazard quotients, **4:37**

human health risk assessment, **4:31**

management, **4:38**

process for ERA

generally, **4:32**

analysis, **4:34 to 4:37**

characterization of risk, **4:37**

effects assessment, **4:35**

exposure assessment, **4:36**

problem formulation, **4:33**

purpose of assessment, **4:37**

types of ERA, **4:30**

Effects assessment, ecological risk assessment (ERA), **4:35**

Endocrine disruptors, **4:3**

Environmental justice, **4:22**

Epidemiologic studies, **4:5**

Estimation of dose, exposure assessment, **4:14**

Evaluation of Wof E, **4:7**

Experimental toxicology, hazard identification, **4:7**

Exposure assessment

generally, **4:11 et seq.**

biomonitoring, **4:15**

dose estimation, **4:14**

duration of exposure, **4:13**

ecological risk assessment (ERA), **4:36**

exposure routes, **4:12**

introduction, **4:11**

routes of exposure, **4:12**

timing of exposure, **4:13**

Hazard identification, **4:2 to 4:7**

Hazard quotients, ecological risk assessments, **4:37**

Human health risk assessment, ecological risk assessment (ERA), **4:31**

Laboratory studies, **4:6**

Management, ecological risk management and communications, **4:38**

Mathematical expressions of risk, **4:17**

Noncarcinogens, dose-response assessment, **4:10**

Numerical estimates of risk, **4:17**

Numerical notations and basic statistics, **1:36**

Probabilistic risk assessments, introduction

generally, **4:24**

comparison of deterministic and probabilistic approaches, **4:27**

deterministic approach, **4:25**

probabilistic approach, **4:26**

Purpose of ecological risk assessment, **4:37**

Risk-based target levels, **4:18**

Routes of exposure, **4:12**

Target levels, risk-based, **4:18**

RISK ASSESSMENT—Cont'd

- Timing of exposure, **4:13**
- Toxicity to humans, **4:3**
- Toxicogenomics, **4:23**
- Uncertainty, risk characterization, **4:19**
- Variability, risk characterization, **4:18, 4:19**
- Weight of evidence (WoE)
 - analysis, **4:7**
 - evaluation, **4:7**

ROUTES OF EXPOSURE

- Risk assessment, **4:12**

SALINITY

- Surface water quality, **6:18**

SALT MARSH

- Wetlands, **9:19**

SAMPLE CONCENTRATION CALCULATIONS

- Data reduction, **3:64 to 3:66**

SAMPLING AND ANALYSIS

- Generally, **3:1 to 3:129**
- Accuracy, quality assurance and control, **3:105**
- Air
 - EPA analytical methods, **3:76**
 - indoor air, **3:15**
 - sample collection. Collection of samples, below
- Ambient air, collection of samples, **3:13**
- Analytical methods. Chemical analyses, below
- Anions, analytical methods applicable to, **3:91**
- Association of Official Analytical Chemists, analytical methods, **3:79**
- Atomic absorption spectroscopy. Chemical analyses, below
- Blanks, quality control samples. Quality assurance and control, below
- Calibration
 - data reduction, **3:66 to 3:68**
 - quality. Quality assurance and control, below
- Chain of custody, **3:94**
- Chemical analyses
 - generally, **3:40**
 - air, EPA analytical methods, **3:76**
 - analytical methods
 - Association of Official Analytical Chemists, **3:79**
 - classes of compounds, analytical methods applicable to, below
 - custom analytical methods, **3:81**
 - EPA analytical methods, below
 - immunoassay, **3:80**
 - National Institute for Occupational Safety and Health, **3:77**
 - standard analytical methods, **3:78**

SAMPLING AND ANALYSIS—Cont'd

- Chemical analyses—Cont'd
 - anions, analytical methods applicable to, **3:91**
 - Association of Official Analytical Chemists, analytical methods, **3:79**
 - atomic absorption spectroscopy
 - flame, **3:61**
 - furnace or electrothermal, **3:62**
 - calibration, data reduction, **3:66 to 3:68**
 - chromatographic separation, **3:45**
 - chromatography
 - generally, **3:45**
 - chromatographic separation, **3:45**
 - coelution, **3:45**
 - elution, **3:45**
 - gas chromatography, **3:46 to 3:48**
 - high performance liquid chromatography, **3:49 to 3:51**
 - ion chromatography, **3:52 to 3:54**
 - classes of compounds, analytical methods applicable to
 - generally, **3:82**
 - inorganic compounds, analytical methods applicable to, below
 - organic compounds, analytical methods applicable to, below
 - coelution, **3:45**
 - contract laboratory program, EPA analytical methods, **3:68**
 - data reduction
 - calibration, **3:66 to 3:68**
 - sample concentration calculations, **3:64 to 3:66**
 - elution, **3:45**
 - emission spectroscopy
 - generally, **3:58**
 - flame emission spectroscopy, **3:59**
 - inductively coupled plasma, **3:56**
 - EPA analytical methods
 - air, **3:76**
 - contract laboratory program, **3:68**
 - SW 846, **3:74**
 - water, **3:75**
 - flame emission spectroscopy, **3:59**
 - gas chromatography, **3:46 to 3:48**
 - herbicides, analytical methods applicable to, **3:86**
 - high performance liquid chromatography, **3:49 to 3:51**
 - immunoassay analytical method, **3:80**
 - inductively coupled plasma, **3:56**
 - infrared spectroscopy, **3:63**
 - inorganic compounds, analytical methods applicable to
 - anions, **3:91**
 - metals, **3:91**

SAMPLING AND ANALYSIS—Cont'd

- Chemical analyses—Cont'd
 - instrumental measurement
 - generally, **3:44**
 - chromatography, above
 - compound specific isotope analysis, **3:56**
 - emission spectroscopy, above
 - infrared spectroscopy, **3:63**
 - mass spectrometry, **3:56**
 - compound specific isotope analysis, **3:57**
 - tandem, **3:56**
 - mass spectroscopy, **3:55**
 - meters, **3:65**
 - X-ray fluorescence, **3:64**
 - ion chromatography, **3:52 to 3:54**
 - metals, analytical methods applicable to, **3:91**
 - meters, **3:65**
 - methods. analytical methods, above
 - National Institute for Occupational Safety and Health, analytical methods, **3:77**
 - organic compounds, analytical methods
 - applicable to
 - herbicides, **3:86**
 - PCBs, **3:85**
 - pesticides, **3:85**
 - petroleum hydrocarbons, **3:88 to 3:90**
 - polycyclic hydrocarbons (PAHs), **3:87**
 - polynuclear aromatic hydrocarbons (PNAs), **3:87**
 - semivolatiles, **3:84**
 - volatiles, **3:83**
 - PCBs, analytical methods applicable to, **3:85**
 - pesticides, analytical methods applicable to, **3:85**
 - petroleum hydrocarbons, analytical methods
 - applicable to, **3:88 to 3:90**
 - polycyclic hydrocarbons (PAHs), analytical methods applicable to, **3:87**
 - polynuclear aromatic hydrocarbons (PNAs), analytical methods applicable to, **3:87**
 - preparation of samples
 - generally, **3:41**
 - inorganic compounds, **3:43**
 - organic compounds, **3:42**
 - sample concentration calculations, data reduction, **3:64 to 3:66**
 - semivolatile organic compounds, analytical methods applicable to, **3:84**
 - SW 846, EPA analytical methods, **3:74**
 - volatile organic compounds, analytical methods applicable to, **3:83**
 - water, EPA analytical methods, **3:75**
 - X-ray fluorescence, **3:64**
- Chemical preservatives, collection of samples, **3:30**

SAMPLING AND ANALYSIS—Cont'd

- Chromatographic separation, chemical analyses, **3:45**
- Chromatography. Chemical analyses, below
- Coelution, chemical analyses, **3:45**
- Collection of samples
 - generally, **3:2**
 - air
 - generally, **3:10**
 - ambient air, **3:13**
 - stack air, **3:14**
 - units of measure, **3:12**
 - vapor density, **3:11**
 - ambient air, **3:13**
 - blanks, quality control, **3:36, 3:37**
 - chemical preservatives, **3:30**
 - containers, **3:9**
 - documentation, **3:34**
 - duplicates, quality control, **3:39**
 - dust sampling, **11:30 to 11:37**
 - field blanks, quality control, **3:38**
 - groundwater
 - generally, **3:19**
 - sample collection, **3:22**
 - well construction, **3:20**
 - well purging, **3:21**
 - holding times, **3:27, 3:31**
 - locations, **3:6**
 - plan, sampling, **3:7**
 - practical consideration, **3:5**
 - preservation of samples
 - generally, **3:28**
 - chemical preservatives, **3:30**
 - sample containers, **3:29**
 - quality control
 - blanks, **3:36, 3:37**
 - duplicates, **3:39**
 - field blanks, **3:38**
 - rinse blanks, **3:37**
 - trip blanks, **3:36**
 - representative samples, **3:3**
 - reproducibility, sampling, **3:4**
 - rinse blanks, quality control, **3:37**
 - shipment of samples, **3:32**
 - soils
 - generally, **3:23**
 - sediments, **3:26**
 - subsurface soils, **3:25**
 - surface soils, **3:24**
 - stack air, **3:14**
 - surface water, **3:18**
 - techniques
 - generally, **3:8**
 - air, above
 - ambient air, **3:13**

SAMPLING AND ANALYSIS—Cont'd

- Collection of samples—Cont'd
 - techniques—Cont'd
 - containers, **3:9**
 - decontamination, **3:33**
 - documentation, **3:34**
 - groundwater, above
 - holding times, **3:27, 3:31**
 - indoor air, **3:15**
 - preservation of samples, above
 - quality control, above
 - shipment of samples, **3:32**
 - soils, above
 - soil vapor, **3:16**
 - stack air, **3:14**
 - water, below
 - trip blanks, quality control, **3:36**
 - water
 - generally, **3:17**
 - groundwater, above
 - surface water, **3:18**
- Containers, collection of samples, **3:9**
- Contract laboratory program, EPA analytical methods, **3:68**
- Data reduction. Chemical analyses, above
- Data reporting, **3:125**
- Data validation, **3:129**
- Detection limits. Quality assurance and control, below
- Documentation of collection of samples, **3:34**
- Duplicates, quality control samples. Quality assurance and control, below
- Dust measurement and studies. **Industrial Hygiene** (this index)
- Elution, chemical analyses, **3:45**
- Emission spectroscopy. Chemical analyses, above
- EPA analytical methods. Chemical analyses, above
- Flame emission spectroscopy, **3:59**
- Gas chromatography, **3:46 to 3:48**
- Groundwater. Collection of samples, above
- Herbicides, analytical methods applicable to, **3:86**
- High performance liquid chromatography, **3:49 to 3:51**
- Holding times, collection of samples, **3:27, 3:31**
- Immunoassay analytical method, **3:80**
- Indoor air, **3:15**
- Inductively coupled plasma, **3:56**
- Infrared spectroscopy, **3:63**
- Inorganic compounds, analytical methods applicable to. Chemical analyses, above
- Instrumental measurement. Chemical analyses, above
- Ion chromatography, **3:52 to 3:54**
- Laboratory qualifiers, **3:126 to 3:128**

SAMPLING AND ANALYSIS—Cont'd

- Locations for collection of samples, **3:6**
- Matrix interference, quality assurance and control, **3:104**
- Metals, analytical methods applicable to, **3:91**
- Meters, **3:65**
- National Institute for Occupational Safety and Health, analytical methods, **3:77**
- Numerical notations and basic statistics, **1:30, 1:34**
- Organic compounds, analytical methods applicable to. Chemical analyses, above
- PCBs, analytical methods applicable to, **3:85**
- Pesticides, analytical methods applicable to, **3:85**
- Petroleum hydrocarbons, analytical methods applicable to, **3:88 to 3:90**
- Plan, sampling and collection of samples, **3:7**
- Polycyclic hydrocarbons (PAHs), analytical methods applicable to, **3:87**
- Polynuclear aromatic hydrocarbons (PNAs), analytical methods applicable to, **3:87**
- Practical considerations for collection of samples, **3:5**
- Precision, quality assurance and control, **3:105**
- Preparation of samples. Chemical analyses, above
- Preservation of samples. Collection of samples, above
- Quality assurance and control
 - generally, **3:93**
 - accuracy, **3:105**
 - blanks, quality control samples
 - generally, **3:36, 3:37, 3:110**
 - calibration blank, **3:112**
 - method blank, **3:113**
 - reagent blanks, **3:115**
 - storage blanks, **3:114**
 - calibration
 - generally, **3:106**
 - continuing calibration checks, **3:107**
 - laboratory control samples, **3:108**
 - tuning, **3:109**
 - chain of custody, **3:94**
 - collection of samples. Collection of samples, above
 - detection limits
 - generally, **3:96**
 - instrument detection limit, **3:97**
 - limit of detection, **3:99**
 - method detection limit, **3:98**
 - duplicates, quality control samples
 - generally, **3:39, 3:120**
 - injection duplicates, **3:122**
 - laboratory duplicates, **3:121**
 - matrix spike duplicates, **3:123**
 - relative percent difference, **3:124**

SAMPLING AND ANALYSIS—Cont'd

- Quality assurance and control—Cont'd
 - field blanks, quality control samples generally, **3:38**
 - matrix interference, **3:104**
 - precision, **3:105**
 - quantitation limits
 - generally, **3:96, 3:100**
 - limit of quantitation, **3:103**
 - lower quantitation limit, **3:100**
 - method quantitation limit, **3:102**
 - samples, quality control
 - blanks, quality control samples, above
 - duplicates, quality control samples, above
 - spikes, quality control samples, below
 - spikes, quality control samples generally, **3:116**
 - blank spikes, **3:117**
 - matrix spikes, **3:118**
 - post-digestion/post-extraction spikes, **3:119**
- Quantitation limits. Quality assurance and control, below
- Representative samples, **3:3**
- Reproducibility, sampling, **3:4**
- Rinse blanks, quality control, **3:37**
- Sample concentration calculations, data reduction, **3:64 to 3:66**
- Samples, quality control. Quality assurance and control, above
- Semivolatile organic compounds, analytical methods applicable to, **3:84**
- Shipment of samples, **3:32**
- Soils. Collection of samples, above
- Soil vapor, **3:16**
- Spikes, quality control samples. Quality assurance and control, above
- Stack air, **3:14**
- Surface water, **3:18**
- SW 846, EPA analytical methods, **3:74**
- Trip blanks, quality control of collection of samples, **3:36**
- Validation of data, **3:129**
- Volatile organic compounds, analytical methods applicable to, **3:83**
- Water
 - EPA analytical methods, **3:75**
 - sample collection. Collection of samples, above
- X-ray fluorescence, **3:64**

SCANNING ELECTRONIC MICROSCOPE (SEM)

- Forensics, **10:41**

SCIENTIFIC NOTATION

- Numerical Notations and Basic Statistics** (this index)

SCRUB-SHRUB WETLANDS

- Generally, **9:17**

SECONDARY POLLUTANTS

- Air, types of regulated pollutants, **8:10**

SEDIMENTATION

- Wastewater treatment unit operations, **6:76**

SEMIVOLATILE ORGANIC COMPOUNDS

- Analytical methods, **3:84**

SEQUESTRATION

- Forensics, petroleum hydrocarbon characterization, **10:10**

SETTLABLE SOLIDS

- Surface water quality, classification and measurement of settleable solids as pollutants, **6:35**

SHALE OIL WASTEWATER

- Wastewater Treatment Unit Operations** (this index)

SHIPMENT

- Samples, **3:32**

SHORT-TERM EXPOSURE LIMITS (STELs)

- Industrial hygiene, **11:7**

SIGNIFICANT DIGITS

- Mathematical and scientific notation, **1:6**

SILTATION/TURBIDITY

- Surface water quality, **6:17**

SINGLE-DISPLACEMENT REACTIONS

- Chemistry, **2:31**

SINGLE-WELL PUMPING TEST

- Groundwater flow, **5:12**

SINKERS

- Groundwater, non-aqueous phase liquids contaminant migration, **5:25**

SLUDGE HANDLING AND DISPOSAL

- Wastewater Treatment Unit Operations** (this index)

SLUG TESTS

- Groundwater flow, **5:12**

SOIL

- Contaminated transport models. **Forensics** (this index)
- Groundwater remediation, soil vapor extraction, **5:55**
- Numerical notations and basic statistics, soil quality, **1:33**
- Sampling and Analysis** (this index)
- Solid Waste and Contaminated Soil** (this index)

SOIL SHREDDING

Treatment of solid waste or contaminated soil,
7:90

SOIL VAPOR

Groundwater remediation, soil vapor extraction,
5:55

Sampling and analysis, 3:16

SOIL WASHING

Solid Waste and Contaminated Soil (this index)

SOLID WASTE AND CONTAMINATED SOIL

Generally, 7:1 to 7:93

Biological treatment technologies

generally, 7:13, 7:43 to 7:53

iron reduction, 7:48

LNAPL attenuation, 7:52

manganese reduction, 7:47

methanogenesis and fermentation, 7:51

microbial processes, 7:44 to 7:51

mycological processes, 7:53

nitrate reduction, 7:46

oxygen utilization, 7:45

phytological processes, 7:54

reductive dechlorination, 7:49

sulfate reduction, 7:50

Chemical treatment technologies

generally, 7:14 to 7:18, 7:55 to 7:69

chemical reduction. **Chemical Reduction** (this index)

fixation, 7:18, 7:69

oxidation **Oxidation** (this index)

stabilization. **Stabilization** (this index)

Combustion, thermal treatment of solid waste or
contaminated soil, 7:23 to 7:30

Contaminated soils, types, 7:1

Ecological concerns, 7:8

Goals of contaminated soil treatment, 7:9

Human health concerns, 7:7

Impacts and concerns, 7:6 to 7:8

Inorganic contamination, 7:5

Light non-aqueous phase liquids (LNAPL)
attenuation, 7:52

Mechanisms of contamination, 7:3 to 7:5

Organic contamination, 7:4

Physical treatment technologies

generally, 7:19 to 7:21, 7:70 to 7:93

extraction, 7:21, 7:84 to 7:93

isolation technologies. **Isolation Technologies**
(this index)

soil washing and soil flushing, below

Quicklime, thermal treatment, 7:39

Regulatory basis, 7:2

Soil washing and soil flushing

generally, 7:77 to 7:83

beneficiation, 7:79

SOLID WASTE AND CONTAMINATED SOIL

—**Cont'd**

Soil washing and soil flushing—**Cont'd**

contaminants, applicability of processes, 7:81

ex situ vs. in situ, 7:82

soil flushing, 7:80

soil washing, 7:78

solids, applicability of processes, 7:83

Solvent extraction

generally, 7:84 to 7:86

contaminants, applicability to, 7:85

solids, applicability to, 7:86

Thermal treatment technologies

generally, 7:12, 7:22 to 7:42

boilers, 7:27

cement kilns, 7:26

chemical heating, quicklime, 7:39

combustion, 7:23 to 7:30

contaminants

combustion processes, applicability of, 7:29

desportation processes, applicability of, 7:40

vitricification processes, applicability of, 7:32

desportation, 7:35 to 7:42

ex situ vs. in situ

desportation, 7:41

vitricification, 7:33

high temperature desportation, 7:37

incinerators, 7:24

low temperature desportation, 7:36

municipal waste incinerators, 7:28

solids

combustion processes, applicability of, 7:30

desportation processes, applicability of, 7:42

vitricification processes, applicability of, 7:34

thermochemical stabilization, 7:38

vitricification, 7:31 to 7:34

waste burning in industrial processes, 7:25 to
7:28

Treatment of contaminated soils, generally, 7:9 **et seq.**

Vapor extraction

generally, 7:87 to 7:93

contaminants, applicability of processes, 7:91

dual phase extraction, 7:89

ex situ vs. in situ, 7:93

high vacuum, 7:89

low vacuum, 7:88

soil shredding, 7:90

solids, applicability of processes, 7:92

SOLUBILITY

Physics, 2:20

SOLUBLE OIL

Wastewater treatment unit operations, 6:53

INDEX

SOLVENT EXTRACTION

Solid Waste and Contaminated Soil (this index)

SOLVENTS

Chemistry, **2:69**

SONIC DRILLING

Groundwater investigations, **5:46**

SOURCE CONTROL

Groundwater (this index)

SOURCE IDENTIFICATION

Forensics, **10:26, 10:27**

SOURCE TERM

Groundwater, aqueous-phase contaminant migration, **5:15**

SPECIFIC GRAVITY

Physics, **2:12**

SPIKES

Quality control samples. **Sampling and Analysis** (this index)

STABILIZATION

Generally, **7:17, 7:66 to 7:68**

Additives, **7:68**

Techniques for stabilization, **7:67**

STABLE ISOTOPE ANALYSIS

Forensics, age dating chlorinated solvents, **10:25**

STACK AIR

Sampling and analysis, **3:14**

STACK SOURCES

Direct air pollutant measurement. **Air** (this index)

STANDARD DEVIATIONS

Numerical notations and basic statistics, **1:15**

STANDARDS

Industrial hygiene, OSHA health standards for general industry, **11:9 to 11:28**

Numerical notations and basic statistics, **1:37, 1:38**

STATES

Wetlands definition, **9:4**

STATISTICAL FUNDAMENTALS

Graphs, **1:22**

Population, **1:12**

Sample, **1:12**

Tables, **1:22**

STATISTICAL SIGNIFICANCE

Inferential statistics, **1:22**

STATISTICS

Numerical Notations and Basic Statistics (this index)

STEADY STATE

Groundwater flow, **5:8**

STEAM STRIPPING

Wastewater treatment unit operations, **6:75**

STORAGE TANKS

Forensics, underground storage tank corrosion models, **10:3**

STRIPPING

Wastewater Treatment Unit Operations (this index)

SUBLIMATION

Physics, **2:17**

SUBSTANCES

Air pollution, regulated substances/extremely hazardous substances, **8:12**

SUBSTANTIVES

Physics, **2:3**

SULFATE REDUCTION

Biological treatment of solid waste and contaminated soil, **7:50**

SURFACE WATER/GROUNDWATER

Interaction, **5:64**

SURFACE WATER QUALITY

Generally, **6:1 to 6:102**

Aquatic ecosystems

characteristics

generally, **6:4**

energy and material transfer, **6:6**

food webs, **6:5**

population dynamics, **6:7**

energy and material transfer, **6:6**

food webs, **6:5**

pollution sources

leading sources of water quality impairment, **6:2**

Total Maximum Daily Load (TMDL) program, **6:3**

population dynamics, **6:7**

progress in water quality, **6:1**

Total Maximum Daily Load (TMDL) program, **6:3**

Bioaccumulation, **6:41**

Biochemical oxygen demand (BOD). Pollutant categories and effects on surface waters, below

Bioconcentration, **6:43**

Chemical oxygen demand (COD). Pollutant categories and effects on surface waters, below

Energy and material transfer, aquatic ecosystems, **6:6**

Eutrophication, **6:13**

SURFACE WATER QUALITY—Cont'd

- Fecal coliform, classification and measurement, **6:22**
- Food webs, aquatic ecosystems, **6:5**
- Heavy metals (total and dissolved), classification and measurement, **6:40**
- Measurement. Classification and measurement of pollutants, above
- mhos, **6:31**
- Mutagenic and metabolic effects, pollution of surface water, **6:15**
- Nitrogen, classification and measurement, **6:26**
- Odor, classification and measurement, **6:38**
- Oil and grease (O & G), classification and measurement, **6:24**
- Oxygen depletion. Pollutant categories and effects on surface waters, below
- Pathogens. Pollutant categories and effects on surface waters, below
- Pesticides, classification and measurement, **6:41**
- PH, classification and measurement, **6:25**
- Phosphorus, classification and measurement, **6:27**
- Pollutant categories and effects on surface waters generally, **6:8 et seq.**
- bioaccumulation, **6:41**
- biochemical oxygen demand (BOD) generally, **6:11**
- classification and measurement, **6:21**
- bioconcentration, **6:43**
- chemical oxygen demand (COD) generally, **6:12**
- classification and measurement, **6:30**
- classification and measurement of pollutants generally, **6:19**
- bioaccumulation, **6:41**
- chemical oxygen demand (COD), **6:30**
- conventional pollutants, classification and measurement, below
- cyanide, **6:28**
- heavy metals (total and dissolved), **6:40**
- µmhos, **6:31**
- nitrogen, **6:26**
- odor, **6:38**
- pathogens, **6:36**
- pesticides, **6:41**
- pharmaceuticals and personal care products, **6:47**
- phosphorus, **6:27**
- polynuclear aromatic hydrocarbon (PAHs), **6:42**
- priority pollutants, **6:44**
- radionuclides, **6:39**
- settleable solids, **6:35**
- surfactants (MBAS), **6:29**
- total dissolved solids (TDS), **6:33**
- total organic carbon (TOC), **6:31**

SURFACE WATER QUALITY—Cont'd

- Pollutant categories and effects on surface waters —Cont'd
- classification and measurement of pollutants —Cont'd
- total solids, **6:34**
- turbidity, **6:37**
- volatile suspended solids (VSS), **6:32**
- Classification and measurement of pollutants, **6:46**
- conventional pollutants, classification and measurement generally, **6:20**
- biochemical oxygen demand (BOD), **6:21**
- fecal coliform, **6:22**
- oil and grease (O & G), **6:24**
- pH, **6:25**
- total suspended solids (TSS), **6:23**
- cyanide, classification and measurement, **6:28**
- eutrophication, **6:13**
- fecal coliform, classification and measurement, **6:22**
- heavy metals (total and dissolved), classification and measurement, **6:40**
- measurement. Classification and measurement of pollutants, above
- µmhos, **6:31**
- mutagenic and metabolic effects, **6:15**
- nitrogen, classification and measurement, **6:26**
- oxygen depletion, **6:10**
- biochemical oxygen demand (BOD), **6:11**
- chemical oxygen demand (COD), **6:12**
- odor, classification and measurement, **6:38**
- oil and grease (O & G), classification and measurement, **6:24**
- organic enrichment, **6:10**
- pathogens, **6:16**
- generally, **6:16**
- classification and measurement, **6:36**
- Per and Polyfluoroalkyl Substances (PFAS), **6:45**
- pesticides, classification and measurement, **6:41**
- pH, classification and measurement, **6:25**
- pharmaceuticals and personal care products, **6:47**
- phosphorus, classification and measurement, **6:27**
- pollution of surface waters
- eutrophication, **6:13**
- mutagenic and metabolic effects, **6:15**
- oxygen depletion, above
- pathogens, **6:16**
- salinity, **6:18**
- siltation/turbidity, **6:17**
- temperature effects, **6:14**

SURFACE WATER QUALITY—Cont'd

- Pollutant categories and effects on surface waters—Cont'd
 - pollution of surface waters—Cont'd
 - toxicity, **6:15**
 - turbidity, **6:17**
 - polychlorinated biphenyls (PCBs), classification and measurement, **6:43**
 - polynuclear aromatic hydrocarbon (PAHs), classification and measurement, **6:42**
 - priority pollutants, classification and measurement, **6:44**
 - radionuclides, classification and measurement, **6:39**
 - salinity, **6:18**
 - settleable solids, classification and measurement, **6:35**
 - siltation/turbidity, **6:17**
 - surfactants (MBAS), classification and measurement, **6:29**
 - temperature effects, **6:14**
 - toxicity, **6:15**
 - total dissolved solids (TDS), classification and measurement, **6:33**
 - total organic carbon (TOC), classification and measurement, **6:31**
 - total solids, classification and measurement, **6:34**
 - total suspended solids (TSS), classification and measurement, **6:23**
 - turbidity
 - generally, **6:17**
 - classification and measurement, **6:37**
 - volatile suspended solids (VSS), classification and measurement, **6:32**
- Pollution sources. Aquatic ecosystems, above
- Polychlorinated biphenyls (PCBs), classification and measurement, **6:43**
- Polynuclear aromatic hydrocarbon (PAHs), classification and measurement, **6:42**
- Population dynamics, aquatic ecosystems, **6:7**
- Priority pollutants, classification and measurement, **6:44**
- Radionuclides, classification and measurement, **6:39**
- Salinity, pollution of surface water, **6:18**
- Sampling and analysis, pollution of surface water, **3:18**
- Settleable solids, classification and measurement, **6:35**
- Siltation/turbidity, pollution of surface water, **6:17**
- Surfactants (MBAS), classification and measurement, **6:29**
- Temperature effects, pollution of surface water, **6:14**
- Toxicity, pollution of surface water, **6:15**

SURFACE WATER QUALITY—Cont'd

- Total dissolved solids (TDS), classification and measurement, **6:33**
- Total Maximum Daily Load (TMDL) program, aquatic ecosystems, **6:3**
- Total organic carbon (TOC), classification and measurement, **6:31**
- Total solids, classification and measurement, **6:34**
- Total suspended solids (TSS), classification and measurement, **6:23**
- Turbidity. Pollutant categories and effects on surface waters, above
- Volatile suspended solids (VSS), classification and measurement, **6:32**
- Wastewater Treatment Unit Operations** (this index)

SURFACE WATER/WETLANDS

- Connectivity, **9:52**

SURFACTANTS (MBAS)

- Surface water quality, classification and measurement of surfactants (MBAS) as pollutants, **6:29**

SW 846

- EPA analytical methods, **3:74**

TEMPERATURE

- Biological wastewater treatment technologies, effect of temperature on activated sludge treatment, **6:60**
- Surface water quality, temperature effects, **6:14**

THERMAL TREATMENT

- Solid Waste and Contaminated Soil** (this index)

THERMOCHEMICAL STABILIZATION

- Thermal treatment of solid waste or contaminated soil, **7:38**

THRESHOLD LEVELS

- Numerical notations and basic statistics, **1:37, 1:38**

TIDALLY-INFLUENCED WETLANDS

- Generally, **9:7**

TOXICITY

- Surface water quality, **6:15**

TORTUOSITY

- Forensics, **10:34**

TOTAL DISSOLVED SOLIDS (TDS)

- Surface water quality, classification and measurement of TDS pollutants, **6:33**

TOTAL MAXIMUM DAILY LOADS (TMDLS)

- Aquatic ecosystems, **6:3**

- TOTAL ORGANIC CARBON (TOC)**
Surface water quality, classification and measurement of TOC pollutants, **6:31**
- TOTAL SOLIDS**
Surface water quality, classification and measurement of total solids as pollutants, **6:34**
- TOTAL SUSPENDED SOLIDS (TSS)**
Surface water quality, classification and measurement of TSS pollutants, **6:23**
- TOXICOGENOMICS**
Risk assessment, **4:23**
- TOXIC SUBSTANCES CONTROL ACT (TSCA)**
Chemistry, nomenclature amended under, **2:66**
- TRANSIENT CONDITIONS**
Groundwater flow, **5:8**
- TRANSITIONAL HABITATS**
Wetlands, **9:5**
- TRANSMISSIVITY**
Groundwater flow, **5:4**
- TREND (REGRESSION) ANALYSIS**
Statistics, **1:24**
- TRIP BLANKS**
Quality control of collection of samples, **3:36**
- t-TEST AND ANOVA**
Numerical notations and basic statistics, comparisons of data sets, **1:23**
- TURBIDITY**
Surface Water Quality (this index)
- ULTRAFILTRATION**
Wastewater treatment unit operations, **6:83**
- UNCERTAINTY**
Risk characterization, **4:19**
- UNCONFINED-AQUIFER PUMPING TEST**
Groundwater flow, **5:10**
- UNDERGROUND STORAGE TANKS**
Forensics, underground storage tank corrosion models, **10:3**
- UNITED STATES, WATERS OF**
Wetlands (this index)
- UNITS OF MEASUREMENT**
Numerical notations and basic statistics, units of measurement, conversions, and dimensional analysis, **1:7 to 1:9**
- VALENCE SHELLS**
Chemical bonding, **2:22**
- VALIDATION OF DATA**
Sampling and analysis, **3:129**
- VAPOR EXTRACTION**
Solid Waste and Contaminated Soil (this index)
- VAPOR PRESSURE**
Physics, **2:15**
- VAPORS**
Sample collection, soil vapor, **3:16**
- VAPOR TRANSPORT**
Forensics (this index)
- VARIABILITY**
Numerical notations and basic statistics, **1:15**
Risk characterization, **4:19**
- VARIABLES**
Descriptive statistics, **1:13**
- VARIANCE**
Numerical notations and basic statistics, **1:15**
- VERACITY OF STATISTICS**
Numerical notations and basic statistics, **1:41**
- VISCOUS FLOW**
Forensics, challenges to contaminant transport models in soil, **10:36**
- VITRIFICATION**
Thermal treatment of solid waste or contaminated soil, **7:31 to 7:34**
- VOLATILE ORGANIC COMPOUNDS**
Analytical methods, **3:83**
- VOLATILE SUSPENDED SOLIDS (VSS)**
Surface water quality, classification and measurement of VSS pollutants, **6:32**
- VOLATILITY**
Physics, **2:16**
- WASTEWATER TREATMENT UNIT OPERATIONS**
Generally, **6:48 to 6:98**
Activated carbon adsorption, physical-chemical treatment system, **6:68**
Activated sludge treatment. Biological treatment technologies, below
Aerobic wastewater treatment, **6:55**
Air stripping, physical-chemical treatment system, **6:72 to 6:74**
Anaerobic biological treatment systems, **6:65**
Anion exchange system, **6:71**
API separator, **6:53**
Attached growth systems, biological treatment technologies, **6:64**
Backwash, physical-chemical treatment system, **6:84**

**WASTEWATER TREATMENT UNIT
OPERATIONS—Cont'd**

Biological treatment technologies
generally, **6:55**
activated sludge treatment
generally, **6:56**
nutrient requirements, **6:59**
oxygen requirements, **6:58**
organic loading, **6:57**
pH, effect of, **6:61**
temperature, effect of, **6:60**
toxicity, effect of, **6:62**
aerobic wastewater treatment, **6:55**
anaerobic biological treatment systems, **6:65**
attached growth systems, **6:64**
biomass, **6:55**
facultative wastewater treatment processes,
6:55
floc, **6:55**
membrane biological reactors (MBR), **6:66**
moving bed biological reactors (MBBR), **6:67**
suspended growth systems other than activated
sludge treatment, **6:63**
Biomass, **6:55**
Breakthrough, physical-chemical treatment
system, **6:68**
Cation exchange system, physical-chemical
treatment system, **6:70**
Chemical oxidation and reduction, physical-
chemical treatment system, **6:78**
Coagulation, physical-chemical treatment system,
6:76
Colloidal suspensions, **6:76**
Critical point, **6:79**
Desalination, **6:102**
Disinfection, **6:85, 6:102**
Emulsified oil, **6:53**
Equalization, **6:50**
Facultative wastewater treatment processes, **6:55**
Filtration, physical-chemical treatment system,
6:84
Floc, **6:55**
Flocculation, physical-chemical treatment
system, **6:76**
Flotation, **6:54**
Free oil, **6:53**
Heavy metals removal, physical-chemical treat-
ment system, **6:77**
Hydrothermal processes, physical-chemical treat-
ment system, **6:79**
Ion-exchange systems. Physical-chemical treat-
ment system, below
Membrane biological reactors (MBR), **6:66**
Membrane technologies. Physical-chemical treat-
ment system, below
Microfiltration, **6:83**

**WASTEWATER TREATMENT UNIT
OPERATIONS—Cont'd**

Moving bed biological reactors (MBBR), **6:67**
Nanofiltration, **6:83**
Neutralization, **6:52**
Nitrogen removal
generally, **6:89**
biological processes, **6:91**
denitrification, **6:93**
nitrification, **6:92**
physical/chemical processes, **6:90**
Nutrient removal
nitrogen. Nitrogen removal, above
phosphorus. Phosphorus removal, below
Oil removal, **6:53, 6:102**
Phosphorus removal
generally, **6:86**
biological removal, **6:88**
chemical precipitation, **6:87**
Physical-chemical treatment system
activated carbon adsorption, **6:68**
air stripping, **6:72 to 6:74**
anion exchange system, **6:71**
backwash, **6:84**
breakthrough, **6:68**
cation exchange system, **6:70**
chemical oxidation and reduction, **6:78**
coagulation, **6:76**
colloidal suspensions, **6:76**
critical point, **6:79**
disinfection, **6:85**
electrodialysis, **6:82**
filtration, **6:84**
heavy metals removal, **6:77**
hydrothermal processes, **6:79**
ion-exchange systems
generally, **6:69**
anion exchange, **6:71**
cation exchange, **6:70**
membrane technologies
generally, **6:80**
electrodialysis, **6:82**
microfiltration, **6:83**
nanofiltration, **6:83**
reverse osmosis, **6:81**
ultrafiltration, **6:83**
microfiltration, **6:83**
nanofiltration, **6:83**
reverse osmosis, **6:81**
sedimentation, **6:76**
steam stripping, **6:75**
stripping
air stripping, **6:72 to 6:74**
steam stripping, **6:75**
ultrafiltration, **6:83**

WASTEWATER TREATMENT UNIT OPERATIONS—Cont'd

Pre- and primary treatment technologies

API separator, **6:53**emulsified oil, **6:53**equalization, **6:50**flotation, **6:54**free oil, **6:53**neutralization, **6:52**oil removal, **6:53**primary clarification, **6:51**screening and grit removal, **6:49**soluble oil, **6:53**Primary clarification, **6:51**Reverse osmosis, **6:81**Screening and grit removal, **6:49**Sedimentation, **6:76**

Shale oil wastewater

characteristics, **6:100**management of produced and reject wastewater, generally, **6:99**treatment technologies, **6:101, 6:102**

Sludge handling and disposal

generally, **6:94**sludge dewatering, **6:97**sludge disposal, **6:98**sludge thickening, **6:96**types of sludges, **6:95**Soluble oil, **6:53**Steam stripping, **6:75**

Stripping. Physical-chemical treatment system, above

Suspended-growth biological treatment systems other than activated sludge treatment, **6:63**Ultrafiltration, **6:83****WATER****Groundwater** (this index)Numerical notations and basic statistics, water quality/levels, **1:33****Sampling and Analysis** (this index)**Surface Water Quality** (this index)United States, waters of. **Wetlands** (this index)**Wastewater Treatment Unit Operations** (this index)Waters of United States. **Wetlands** (this index)**Wetlands** (this index)**WATERS OF UNITED STATES****Wetlands** (this index)**WATER WASHING**Forensics, **10:10****WEATHERING**Forensics, petroleum hydrocarbon characterization, **10:10****WEIGHT**Physics, **2:12****WEIGHT OF EVIDENCE****Risk Assessment** (this index)**WELLS**Deep well injection, disposal of shale oil wastewater, **6:102**Well-installation monitoring, groundwater investigations, **5:49****WETLANDS**Generally, **9:1 et seq.**Broadleaf forested wetlands, **9:16**Coniferous forested wetlands, **9:15**Connectivity of surface waters and wetlands, **9:52**Definitions, **9:1 et seq.**

Delineation procedures

generally, **9:40 to 9:44**atypical situation procedures, **9:43**comprehensive procedures, **9:42**problem area procedures, **9:44**routine procedures, **9:41**Depressional areas, **9:9**Federal wetlands definition, **9:3**Floodplain areas, **9:8**Forested wetlands, **9:14 to 9:16**Freshwater marsh, **9:20**

Functions and values

generally, **9:45 et seq.**assessment standard, **9:48 to 9:51**hydrogeomorphic approach, **9:49, 9:50**Herbaceous wetlands, **9:18 to 9:20**Hydric soil, **9:28 to 9:31**wetland indicators, **9:30**Hydrology, **9:24 to 9:27**Hydrophytic vegetation, **9:32 to 9:35**

Identification and delineation standards and criteria

generally, **9:23 et seq.**hydric soil, identification and delineation criteria, **9:28 to 9:31**hydrophytic vegetation, identification and delineation criteria, **9:32 to 9:35**Jurisdiction, **9:1 et seq.**Landscape position, **9:6 to 9:10**Local definition, **9:4**

Mitigation and restoration

generally, **9:53 et seq.**avoidance, **9:55**banking, mitigation, **9:61**compensation, **9:57**definitions, **9:53**in lieu fee arrangement, **9:62**minimization, **9:56**

INDEX

WETLANDS—Cont'd

- Mitigation and restoration—Cont'd
 - mitigation types, **9:54 et seq.**
 - ratios, mitigation, **9:60**
 - restoration, **9:63**
 - types of wetland mitigation. Compensation, wetland mitigation, above
- Normal circumstances, **9:39**
- Normal environmental conditions, **9:38**
- Restoration. Mitigation/restoration, above
- Salt marsh, **9:19**
- Scrub-shrub wetlands, **9:17**
- Standard, **9:22, 9:39**

WETLANDS—Cont'd

- Standards. Identification and delineation standards and criteria, above
- State definition, **9:4**
- Tidally-influenced wetlands, **9:7**
- Transitional habitats, **9:5**
- Types of wetlands, **9:11 et seq.**
- Wetland occurrences, **9:5 et seq.**

WORKPLACE HEALTH

- Industrial Hygiene** (this index)

X-RAY FLUORESCENCE

- Sampling and analysis, **3:64**

