

Environmental Engineering Dictionary and Directory

Thomas M. Pankratz

USFilter



LEWIS PUBLISHERS

Boca Raton London New York Washington, D.C.

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Preface

This book has been written to help professionals, students, and lay people identify the increasing number of terms in the fields of environmental engineering and science.

More than 8000 terms, acronyms, and abbreviations applying to wastewater, potable water, industrial water treatment, seawater desalination, air pollution, incineration, and hazardous waste remediation have been defined.

The most unique feature of this book is the inclusion of more than 3000 trademarks and brand names. Many of these commercial terms for proprietary products or processes are so common or descriptive that they have fallen into general use. This confusion is compounded by the fact that many terms contain similar prefixes (e.g., bio-, enviro-, hydra-, hydro-, etc.) and it is often difficult to tell them apart.

This book originates from *Screening Equipment Handbook*, first published in 1988, whose glossary contains a list of screening-related trademarks and brand names along with their company affiliation. Even though that list was relatively short, a surprisingly large number of companies had come and gone or changed their names through mergers or acquisitions. This led to an expanded directory entitled, *The Dictionary of Water and Wastewater Treatment Trademarks and Brand Names*, published in 1991, and which contained 1200 commercial terms.

The Concise Dictionary of Environmental Engineering followed in 1996. In addition to the 2200 commercial terms, it was further expanded to include 3000 generic environmental engineering terms. Shortly after it was published, the environmental equipment manufacturing industry began a consolidation led by USFilter, Waterlink, Baker Hughes, ITT, F.B. Leopold, and others that has resulted in changes to 43% of the terms included in the 1996 edition.

During the research for this book, many other books, magazines, dictionaries, glossaries, buyer's guides, catalogs, brochures, and technical papers were reviewed to locate new terms and their definitions. Although there are too many references to list, I would like to acknowledge the help of these publications and their authors.

In addition to technically reviewing this book, John B. Tonner was especially helpful with his suggestions, advice, research assistance, and computer wizardry. Regardless of when I would call, John was always available to help. His www.worldwide-water.com Web site also proved to be a valuable research tool.

I would like to acknowledge the libraries that were used in my research. They include the M.D. Anderson Library at the University of Houston, the Helen Hall Library in League City, Texas, the Houston Public Library Central Branch, and the library at King Fahd University of Petroleum and Mining in Dhahran, Saudi Arabia.

I also recognize USFilter and Alfa-Laval for their support.

I'm grateful for the assistance of the many friends and colleagues who suggested new terms and challenged old ones, helped with definitions, provided encouragement,

or assisted in the book's production. Some of these people include Robert W. Brown, Gordon Carter, Bill Copa, Chad Dannemann, Jim Force, Jack Gardiner, Duane Germanis, Stacie Jones, John Meidl, Mack Moore, Chad Pankratz, Bill Perpich, Barb Petroff, Jim Symons, Mark Wilson, and Joe Zuback.

Like the first edition, published in 1996, much of my work on this book took place while traveling; the rest was done in the evenings and weekends. I would never have been able to finish without the continued patience and support of my wife, Julie, and our children, Chad, Sarah, Mike, and Katie.

This book is dedicated to my wife, Julie Lynn Pankratz, and our grandson, Gabriel R. Suarez, who was born the same day this book was completed.

Tom Pankratz

Introduction

This dictionary contains terms used in the fields of environmental engineering and environmental science, and the definitions provided relate to their use in an environmental context only.

The commercial terms represent company brand names or trademarks, and have been italicized to differentiate them from the technical terms in general usage. Whenever appropriate, the use of TM or [®] has been included following the name of the entry, although terms may be registered trademarks even though they do not include either symbol. It is also possible that some of the entries listed as trademarks may not be registered or properly used by the manufacturers listed in connection with them.

Brand names and trademarks often evolve and take different forms. Variations in the use of capitalization, hyphens, or symbols often occur over time. The representation of the words included in this book reflects the latest version seen in use and are assumed to be the preferred form.

Commercial acronyms are included if they are registered trademarks or commonly used abbreviations of company names. Nonregistered product model numbers and trademarks that are the same as the name of a company are not always included. Many definitions were extrapolated from stories, advertisements, or product brochures and were not directly corroborated by the company listed as being responsible for the term.

The company name included in the definition of a commercial term usually represents the company that manufactures that particular product or process. In some cases, the listed company may only market, distribute, or license the product.

In several instances, the same brand name has been listed more than once to describe different products or processes from different companies. The author is unaware of any dispute involving these cases and is simply reporting that the companies identified have used the term for the product described. In some cases, the term may be dormant, obsolete, or no longer available from the company listed.

Company addresses, phone numbers, and e-mail addresses listed in the Manufacturer's Directory were confirmed over a period of several years. Some contact information may have changed, especially with the recent telephone area code changes in many parts of the U.S. Readers are cautioned that an incorrect phone number, address, or e-mail address does not mean that a company is no longer in business.

There are a few cases where a company whose name is listed in a definition is not included in the Manufacturer's Directory. If current contact information for a company could not be located, the out-of-date information was not included.

Terms have been arranged alphabetically using current word processing software.

In general, terms related to plumbing, household products, computer programs, or software have not been included.

All of the terms have been listed in good faith. A reasonable attempt has been made to confirm all definitions and, in the case of commercial terms, verify the companies responsible for the listings. The author apologizes for any omissions or errors.

If you are aware of any changes or additions that should be included in subsequent editions, please send them to Tom Pankratz, P.O. Box 75064, Houston, Texas USA, 77234-5064.

Foreword

The areas of environmental engineering and sciences and their related business activities have grown to the point that they overlap the professional and private lives of almost everyone. As environmental issues become more complicated, so does the vocabulary required to understand and discuss them. This *Environmental Engineering Dictionary and Directory* defines many terms that did not even exist a decade ago.

My own field of water reclamation and reuse is an example of a relatively new area of environmental engineering that has fostered the introduction of many new terms and technologies.

When considering advanced treatment of municipal and industrial wastewaters, a repeated thesis has been that such a high quality effluent should be put to beneficial use rather than simply wasted. Today, technically proven treatment and purification processes exist to provide treated water of almost any quality desired. This offers a realistic framework for considering water reclamation and reuse in many parts of the world that are experiencing water shortages. Nonpotable water reuse applications, such as agricultural and landscape irrigation, toilet flushing in large office buildings, and water for aesthetic and environmental purposes have become major options for planned water reuse.

Water reuse provides innovative and alternative options for agriculture, municipalities, and industries. However, water reuse is only one alternative in planning to meet future water resource needs. Conservation, efficient management and use of existing water supplies, and the development of new water resources based on watershed management or seawater desalination are examples of other alternatives.

As the field of environmental engineering continues to develop, so will the vocabulary required for its discussion and study. Our need to understand the environment and to better appreciate our relationship with nature is greater now than at any time in our history. Thus Tom's book is particularly timely and relevant.

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USFilter

The water industry in North America traditionally has been fragmented, populated by small companies with niche specialties. Over the last century, companies built their businesses around specialized water treatment technologies and small product lines, and they often focused on one particular industry. As a result, most companies in the business could not build entire water treatment systems.

In the early 1990s, one company began listening to customer needs and realized water problems are not solved with single products or technologies. Instead, customers craved complete customized solutions — and USFilter was born.

USFilter recognized the urgent need to better manage the business of water. The critical problems of water scarcity, contamination and increasing demand required a global team of water and wastewater specialists equipped with the industry's best technologies and deep financial resources. USFilter began consolidating the industry to solve the most challenging water treatment needs. By combining capabilities, resources, technologies, and top management teams, creative customer solutions would be possible.

Today, USFilter, a Vivendi Water company, is the leading global provider of commercial, industrial, municipal, and residential water and wastewater treatment systems, products and services, with operations in more than 100 countries and more than 70,000 employees worldwide. Whether the need is for bottled water service for homes, sophisticated water treatment technologies for manufacturers, or the design, construction, operation, and financing of entire water and wastewater management systems, USFilter delivers cost-effective, reliable systems to meet our customers' requirements for quality, safety, and environmental compliance.

For more information on USFilter and its products and services please call 1-800-525-0658 or visit the company's website at www.usfilter.com.

A

Å See “Angstrom (Å).”

A&I Alternative and Innovative.

A/O® Wastewater treatment process for biological removal of nitrogen by USFilter/Krüger.

A²/O® Biological treatment process for phosphorus and nitrogen removal by USFilter/Krüger.

A²C™ Biological wastewater treatment system by Baker Process — Municipal Division.

A·I·R Photocatalytic process to destroy VOCs by Trojan Technologies, Inc.

AA See “atomic absorption spectrophotometry (AA).”

AAEE American Academy of Environmental Engineers.

AAP Asbestos Action Program.

AAPCO American Association of Pesticide Control Officials.

AAQS Ambient air quality standards.

AARC Alliance for Acid Rain Control.

AAS American Association for the Advancement of Science.

ABA1000® Alumina oxide for phosphate reduction by Selecto, Inc.

ABA2000® Alumina oxide for lead and heavy metals removal by Selecto, Inc.

ABA8000® Alumina oxide for fluoride removal by Selecto, Inc.

abandoned well A well whose use has been permanently discontinued or which is in a state of such disrepair that it cannot be used for its intended purpose.

abatement Reducing the degree or intensity of, or eliminating, pollution.

abattoir A place where animals are slaughtered for their meat and meat byproducts.

ABC Filter™ Automatic backwashable cartridge filter by USFilter/Rockford.

Abcor® Ultrafiltration membrane product by Koch Membrane Systems, Inc.

ABF Activated bio-filtration wastewater treatment system by Infilco Degremont, Inc.

ABF Traveling bridge type automatic backwashing gravity sand filter by Aqua-Aerobic Systems, Inc.

abiocoen All of the geologic, climatic, and other nonliving elements of an ecosystem.

abiotic Nonliving elements in the environment.

ABJ™ ABJ product group of Sanitaire Corp.

ablation The combined processes of glacial melting and evaporation which results in a net loss of ice.

ablation zone The lower part of a glacier where the net loss of ice exceeds the net gain.

ABS (1) Acrylonitrile-butadiene-styrene. A black plastic material, used in the manufacture of pipes and other components. (2) Alkyl-benzene-sulfonate. A surfactant formerly used in synthetic detergents that resisted biological breakdown.

absolute filter rating A filter rating which indicates that 99.9% of the particles larger than a specified size will be removed by the filter.

absolute humidity The total amount of water vapor present in the air, measured in grams per cubic meter.

absolute pressure The total pressure in a system, equal to the sum of the gage pressure and atmospheric pressure.

absolute purity water Water with a specific resistance of 18.3 megohm-cm at 25°C.

absolute zero The lowest temperature possible; 0° on the Kelvin scale or approximately -273°C (-459.7°F).

absorbate A substance used to soak up another substance.

absorbed dose The amount of a chemical that enters the body of an exposed organism.

absorbent Any substance that exhibits the properties of absorption.

absorption The process of transferring molecules of gas, liquid, or a dissolved substance to the surface of a solid where it is bound by chemical or physical forces.

absorption field A trench or pit filled with gravel or loose rock designed to absorb septic tank effluent.

ABW® Traveling bridge type gravity sand filter by Infilco Degremont, Inc.

abyssal zone A zone of deep oceanic waters, generally deeper than 2000 meters and between the hadal and bathyal zones where light does not penetrate.

AC See “activated carbon.”

AC® Industrial wastewater treatment unit by Colloid Environmental Technologies Co.

ACA American Conservation Association.

acaricide A pesticide used to kill spiders, ticks, or mites.

ACBM Asbestos-containing building material.

Accelapak® Modular water treatment plant by Infilco Degremont, Inc.

Accelator® Solids contact clarifier with primary and secondary mixing zones by Infilco Degremont, Inc.

Accelo Hi-Cap Filter underdrain block formerly offered by Infilco Degremont, Inc.

Accelo-Biox® Modular wastewater treatment plant by Infilco Degremont, Inc.

Accel-o-Fac™ Sewage treatment plant design by Lake Aid Systems.

acceptable risk The level of risk associated with minimal adverse effects, usually determined by a risk analysis.

Access Analytical Former name of IDEXX Laboratories, Inc.

accessory species Species found in less than half but more than one quarter of the area covered by a plant community.

accident site The location of an unexpected occurrence, failure or loss, either at a plant or along a transportation route, resulting in a release of hazardous materials.

acclimatization The physiological and behavioral adjustments of an organism to changes in its environment.

Accofloc® Ion exchange media by Colloid Environmental Technologies Co.

accretion The increase in size of an inorganic body by the addition or accumulation of particles.

ACCU[®] Air sampler by Rupprecht & Patashnick.

Accuguard[™] Automated pH electrode cleaning and calibration module by BIF.

Accu-Mag Electromagnetic flow meter by USFilter/Wallace & Tiernan.

accumulation zone The upper part of a glacier where net gain in ice exceeds the net loss.

accumulator A tank installed in a circulating water system to allow for fluctuations in flow, temperature, pressure, or other variations in operation.

AccuPac[®] Cross-corrugated surface media for biological wastewater treatment by Brentwood Industries, Inc.

Accura-flo[®] Flumes for measuring flows by Composite Structures.

Accu-Tab[™] Tablet chlorination system by Hammonds and PPG Industries, Inc..

Accuvac Chemical reagents in vacuum vials for chemical analysis of fluids by Hach Co.

ACE rule See “Any Credible Evidence rule (ACE rule).”

acetaldehyde An organic chemical formed during the disinfection of water, most commonly associated with the use of ozone as disinfectant. Chemical formula is CH_3CHO .

acetic acid A weak, organic acid contained in vinegar and used in the manufacture of organic chemicals and plastics. Also called “ethanoic acid.” Chemical formula is CH_3COOH .

acetone A colorless, volatile liquid used in organic synthesis and as a commercial solvent. Chemical formula is CH_3COCH_3 .

ACFM Actual cubic feet per minute.

ACFTD Air cleaner fine test dust. Dust used to calibrate particle counters.

ACGIH American Conference of Governmental Industrial Hygienists.

ACH (1) See “air changes per hour (ACH).” (2) See “aluminum chlorohydrate (ACH).”

ACI American Concrete Institute.

acid (1) A substance that can react with a base to form a salt. (2) A substance that can donate a hydrogen ion or proton.

acid deposition See “acid rain.”

acid mine drainage Drainage of water from areas that have been mined for coal or other mineral ores, usually having a low pH due to contact with sulfur-bearing material.

acid neutralizing capacity (ANC) Measure of the ability of water or soil to resist changes in pH.

acid rain Precipitation having an unusually low pH, generally attributed to the absorption of sulfur dioxide pollution in air. Also known as “acid deposition.”

acid shock The biological disruption of an aquatic system that results from rapid acidification.

acid-forming bacteria Microbes that can metabolize complex organic compounds under anaerobic conditions, leading to the production of methane.

acidic The condition of water or soil that contains a sufficient amount of acid substances to lower the pH below 7.0.

acidity The capacity of an aqueous solution to neutralize a base.

acidophil (1) A cell or substance easily stained by acid dyes. (2) An organism that has an affinity for, and grows in, an acidic environment. Also spelled “acidophile.”

ACL Alternate concentration limit.

ACM Asbestos-containing material.

ACM® Thin film composite reverse osmosis membrane by TriSep Corp.

Acme Former screening equipment manufacturer.

ACM-LP™ Low pressure thin film composite reverse osmosis membrane by TriSep Corp.

ACMS™ Seawater reverse osmosis membrane by TriSep Corp.

ACoE U.S. Army Corps of Engineers.

Acousticair® Low noise blowers by Tuthill Pneumatics Group.

ACP Air Carcinogen Policy.

acre-foot The volume of water that would cover a one acre area one foot deep. Equivalent to approximately 1233.6 cubic meters or 325,900 gallons.

acrolein An aldehyde compound used as a microbiocide in the manufacture of organic chemicals.

Acro-Pac® Packaged seawater reverse osmosis system by Aqua-Chem, Inc.

ACS-Plus High purity chemicals for laboratory use by Hach Co.

ACT-100® Double wall fiberglass laminated steel underground tank by Steel Tank Institute.

ACT™ Combined aeration technologies by Aeration Industries, Inc.

Acticarbonyl® Activated carbon by Elf Atochem North America, Inc.

Actifil® Packing media for biological reactors by Sanitaire Corp.

Actiflo® High rate sedimentation process for water and wastewater treatment by USFilter/Krüger.

Actifloc™ Modular, high-rate water treatment plant by USFilter/General Filter.

Actinomyces A group of bacteria that share some features with fungi, and recognized as a source of musty or earthy odors in drinking water.

activated alumina A partially dehydrated form of aluminum oxide frequently used as an adsorbent. Chemical formula is Al_2O_3 .

Activated Biofilm Method Fixed film wastewater treatment system by JDV Equipment Corp.

activated biofilter A fixed film biological wastewater treatment process where a portion of the secondary sludge is returned to the reactor influent.

activated carbon (AC) A highly adsorbent form of carbon used to remove dissolved organic matter from water and wastewater or odors and toxic substances from gaseous emissions.

activated charcoal See “activated carbon.”

activated sludge The biologically active solids in an activated sludge process wastewater treatment plant.

activated sludge process A biological wastewater treatment process where a mixture of wastewater and biologically enriched sludge is mixed and aerated to facilitate aerobic decomposition by microbes.

activation energy The energy required to initiate a process or reaction.

Activator Package wastewater treatment plant by Pollution Control, Inc.

activator A chemical added to a pesticide to increase its activity.

Activator III Oil recovery product by Sybron Chemicals, Inc.

active ingredient In any pesticide product, the component that kills, or otherwise controls, target pests.

active life The period of operation of a facility that begins with initial receipt of a solid waste and ends at completion of closure activities.

active portion Any area of a facility where treatment, storage, or disposal operations continue to be conducted.

active solar heating A heating system that derives heat from the sun's rays and incorporates active devices such as pumps or blowers to move heat from the point of collection to the point of storage or use.

Activol™ Wastewater grease emulsifier by Probiotic Solutions.

Acumem Reverse osmosis product formerly offered by USFilter.

Acumer® Water treatment polymers by Rohm and Haas, Co.

acute exposure A single exposure to a toxic substance, usually lasting no longer than a day, which results in severe biological harm or death.

acute toxicity A poisonous effect produced by a single short-term exposure which results in severe biological harm or death.

Acutec Gas detection system by USFilter/Wallace & Tiernan.

ACWA American Clean Water Association.

ACWM (1) Asbestos-containing waste material. (2) See "asbestos-containing waste materials (ACUM)."

AD Dry blending and dilution system by Komax Systems, Inc.

ADA American Desalting Association. Formerly "NWSIA."

ADAM Acryloyl ethyl dimethyl amine.

adaptation Changes in an organism's structure or habits which help it adjust to its surroundings.

Adcat™ Oxidation catalyst systems for air pollution control by Goal Line Environmental Technologies.

Addigest® Package extended aeration wastewater treatment plant by Smith & Loveless, Inc.

additive A chemical substance incorporated into another substance to improve or preserve its quality.

additive mortality The total mortality caused by different factors affecting a population for a given period of time including predation, fire, or catastrophes.

add-on control device An air pollution control device such as carbon absorber or incinerator that reduces the pollution in an exhaust gas.

adenosine diphosphate (ADP) A compound involved in the mobilization of energy in cellular metabolism. Energy is stored by adding a phosphate group to ADP to produce ATP.

adenosine triphosphate (ATP) A high-energy phosphate compound that serves as the prime energy carrier in living organisms. Energy is released when ATP is converted to ADP and phosphate.

adenovirus A waterborne pathogen that causes upper respiratory infections and gastroenteritis.

ADF See "average daily flow (ADF)."

adhesion The force of molecular attraction between unlike molecules.

ADI Acceptable daily intake.

adiabatic lapse rate The constant rate at which temperatures decrease as altitude increases. In a dry atmosphere the dry adiabatic lapse rate (DALR) is approximately $-1.00^{\circ}\text{C}/100\text{ m}$ rise.

adit A horizontal passageway into a mine to provide access or drainage.

AdjustAir® Adjustable coarse bubble air diffuser by USFilter/Diffused Air Products Group.

Adjust-O-Pitch Mixing propellers with adjustable pitch blades by Walker Process Equipment.

administrative order An EPA-issued order directing an individual, business, or other entity to take corrective action or refrain from an activity.

admixture (1) A material or substance added in mixing. (2) A substance other than cement, aggregate, or water that is mixed with concrete.

Ad-Ox Polishing scrubber for odor abatement by Purafil, Inc.

ADP See “adenosine diphosphate (ADP).”

Adpec Horizontal vacuum filter by Komline-Sanderson Engineering Corp.

ADR (1) Accidental rectal discharge. (2) Alternative dispute resolution.

ADROWPU® Water purification unit by Zenon Environmental, Inc.

Adsep™ Chromatographic process for separating organic and inorganic compounds by USFilter/Rockford.

Adsolv Activated carbon VOC control system by CSM Worldwide/RaySolv.

adsorbable organic halides (AOX) The gross measurement of all chlorinated organic compounds in an effluent.

adsorbate A material adsorbed on the surface of another.

adsorbent A material used to adsorb substances to its surface.

adsorption The process of transferring a substance from a liquid to the surface of a solid where it is bound by chemical or physical forces.

Adsorption Clarifier™ Upflow buoyant media flocculator/clarifier by USFilter/Microfloc.

adulterants Chemical impurities or substances that by law do not belong in a food or pesticide.

adulterated (1) Any pesticide whose strength or purity falls below the quality stated on its label. (2) A food, feed, or product that contains illegal pesticide residues.

Advance® Chlorine gas feeder systems by Capital Controls Co.

Advanced Fluidized Composting™ A combined biological and chemical sludge treatment process by USFilter/Industrial Wastewater Systems.

advanced oxidation process (AOP) A process using a combination of disinfectants such as ozone and hydrogen peroxide to oxidize toxic organic compounds to nontoxic form.

advanced secondary treatment Secondary wastewater treatment with enhanced solids separation.

advanced treatment plant (ATP) A treatment facility using processes that provide treatment to levels greater than that of a conventional plant.

advanced wastewater treatment (AWT) Treatment processes designed to remove pollutants such as phosphorus, nitrogen, and a high percentage of suspended

- solids which are not adequately removed by conventional secondary treatment processes.
- advection** The transfer of heat by horizontal currents of air.
- Advent®** Package water treatment plant by Infilco Degremont, Inc.
- advisory** A nonregulatory document that communicates risk information to those who may have to make risk management decisions.
- AEM** Acoustic emission monitoring.
- aeolian deposit** Soil deposited by the wind.
- Aeralater®** Packaged iron and manganese removal system by USFilter/General Filter.
- aerated pile composting** A composting method where municipal wastewater solids are mixed with a bulking material and the mixture placed over a forced air ventilation system.
- aeration** The addition of air or oxygen to water or wastewater, usually by mechanical means, to increase dissolved oxygen levels and maintain aerobic conditions.
- Aeration Engineering Resources Corp.** Former name of Aercor product group of Sanitaire Corp.
- Aeration Panel™** Fine bubble membrane diffuser panel by Parkson Corp.
- aerator** A device used to introduce air or oxygen into water or wastewater.
- Aerators, Inc.** Former name of USFilter/Aerator Products.
- Aercor** Aeration and packing products by Sanitaire Corp.
- Aer-Degritter** Aerated grit removal system by USFilter/Headworks Products.
- AerFlare** Air diffuser by Walker Process Equipment.
- Aergrid™** Floor grid aeration system by Aeration Technologies, Inc.
- Aermax®** Fine pore aeration diffuser by Aeration Technologies, Inc.
- Aero-Accelator®** Circular, packaged activated sludge treatment plant by Infilco Degremont, Inc.
- aeroallergen** An allergen transported by air.
- aerobe** An organism that requires free oxygen for respiration.
- aerobic** Condition characterized by the presence of free oxygen.
- aerobic digestion** Sludge stabilization process involving direct oxidation of biodegradable matter and oxidation of microbial cellular material.
- aerobic treatment** Process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth.
- Aeroburn** Wastewater treatment plant by Walker Process Equipment.
- Aerocleve** Former manufacturer whose product line is now offered by Chemineer, Inc.
- Aeroductor** Aerated grit removal system by Lakeside Equipment Corp.
- Aero-Filter** Rotary distributor by Lakeside Equipment Corp.
- Aer-O-Flo** Wastewater treatment equipment product line by Purestream, Inc.
- aerogel** A substance formed by the suspension of small bubbles of gas in a liquid or solid.
- Aero-Max** Tubular membrane diffuser by Aeration Research Company.
- Aero-Mod®** Wastewater treatment product line by Waterlink/Aero-Mod Systems.
- Aeropure** Activated carbon vapor filtration system by American Norit Company, Inc.

- AeroScrub** Flue gas scrubber by Aeropulse, Inc.
- Aerosep®** Multi-stage aerosol separation system by Kimre, Inc.
- aerosols** A suspension of colloidal particles in air or another gas.
- Aero-Surf** Air driven rotating biological contactor by USFilter/Envirex.
- Aero-Terra-Aqua** ATA Technologies, Inc.
- Aerotherm** In-vessel composting system by Fairfield Service Co.
- AerResearch** Aeration diffuser product line by Aeration Research Company.
- Aershear™** Coarse bubble diffuser by Aeration Technologies, Inc.
- Aertec™** Air diffuser product line by Aeration Technologies, Inc.
- Aertube™** Static tube aerators by Aeration Technologies, Inc.
- Aethalometer™** An aerosol black carbon monitor for measuring agricultural burning, diesel emissions and speciation of fine particles by Andersen Instruments, Inc.
- AF Series™** Backwashable filter and carbon treatment units by Asahi America.
- AFC™** Advanced fluidized composting process by USFilter/Industrial Wastewater Systems.
- AFD** Adjustable frequency drive.
- affected public** The people who live and/or work near a hazardous waste site.
- affluent stream** A stream or river flowing into a larger river or lake.
- afforestation** The process of establishing a forest where one did not previously exist.
- AFO** Air fail open.
- AFOs** Animal feeding operations.
- AFPA** American Forest and Paper Association. Also called “AF&PA.”
- AfterBlend** Output booster for chemical feed system by USFilter/Stranco.
- afterburner** A device used to reduce air emissions by incinerating organic matter in a gas stream.
- aftercondenser** A condenser installed as the last stage of an evaporator venting system to minimize atmospheric steam discharge.
- aftergrowth** The increase of bacterial density in treated distribution water caused by growth of bacteria released from pipewall biofilm and sediments.
- aftershock** Any seismic tremor following a main earthquake event and originating at or near the same place.
- AFX™** Ozone instrumentation products by IN USA, Inc.
- agar** A gelatinous substance extracted from a red algae, commonly used as a medium for laboratory cultivation of bacteria.
- agar plate** A circular glass plate, containing agar or another nutrient-medium, used to culture microorganisms.
- AGC** Association of General Contractors of America.
- age tank** A tank used to store a chemical solution of known concentration for feed to a chemical feeder. Also called a day tank.
- agent** Any substance, organism, or active force that produces an effect or change.
- Agent Orange** A dioxin-containing toxic herbicide used as a defoliant during the Vietnam War.
- aggressive water** Water having corrosive qualities.
- agglomerate** To gather fine particles into a larger mass.

aggrade To build up the level or slope of a river bed or valley by the deposit of sediment.

AGI Acute gastrointestinal illnesses.

Agidisc® Disc filter with integrated agitation system by Baker Process.

Agisac Sock-type screening sack by Copa Group.

AGMA American Gear Manufacturers Association.

agrichemical Any inorganic, artificial, or manufactured chemical substances used in agricultural processes, usually in the form of fertilizers, herbicides, and pesticides.

agricultural pollution Farming wastes, including runoff and leaching of pesticides and fertilizers; erosion and dust from plowing; improper disposal of animal manure and carcasses; crop residues; and debris.

agrochemical A substance such as a fertilizer or insecticide used in agriculture.

agro-ecosystem Land used for crops, pasture, and livestock; the adjacent uncultivated land that supports other vegetation and wildlife; the associated atmosphere; and the underlying soils, groundwater, and drainage networks.

agronomy Branch of agriculture that deals with the raising of crops and the care of the soil.

AHERA Asbestos Hazard Emergency Response Act.

AhlFloat™ Dissolved air flotation by USFilter/Industrial Wastewater Systems.

Ahlstrom Aquaflow Former name of wastewater equipment product group acquired by USFilter/Industrial Wastewater Systems.

AhlSurf™ Surface aerator by USFilter/Industrial Wastewater Systems.

A-horizon Topsoil, or the uppermost layer of soil, containing the highest accumulation of mineral and organic matter.

AHS See “aquatic humic substances (AHS).”

AICHE American Institute of Chemical Engineers.

AIDS (Acquired Immune Deficiency Syndrome) A usually fatal disease in which the human body can no longer defend itself against infections. AIDS is caused by the HIV retrovirus which is transmitted by the exchange of body fluids.

AIHA American Industrial Hygiene Association.

air The mixture of gases, primarily oxygen and nitrogen, that surrounds the earth and forms its atmosphere.

air binding (1) A condition where air enters filter media and harms both the filtration and backwash processes. (2) The obstruction of water flow in a pipeline or pump due to the entrapment of air.

air bound See “air binding.”

air changes per hour (ACH) The movement of a volume of air in a given period of time; if a building has one air change per hour, it means that all of the air in the building will be replaced in a one-hour period.

Air Comb® Coarse bubble diffuser by Amwell, Inc.

air contaminant Smoke, dust, fume, gas, odor, mist, radioactive substance vapor, pollen, or any combination thereof.

air curtain A vertical barrier of air bubbled upward through water to contain oil spills or discourage fish from entering polluted water.

air diffuser A device designed to transfer atmospheric oxygen into a liquid.

air gap An open vertical gap or empty space that separates drinking water supply from another water system in a treatment plant or other location to protect it from contamination by backflow or backsiphonage.

Air Grid™ Sand filter air scour system by Roberts Filter Group.

air lock The condition that occurs when air accumulates in a high point of a pipeline, reducing or blocking the flow of water.

air mass A large body of air that has uniform properties such as temperature and humidity.

air padding Pumping dry air into a container to assist with the withdrawal of liquid or to force a liquified gas such as chlorine out of the container.

air pollutant Airborne gases, liquids, or solids that may be hazardous to animal or plant life.

air pollution The presence in the atmosphere of any airborne gases, liquids, or solids that may be hazardous to animal or plant life.

air pollution episode A period of abnormally high concentration of air pollutants, often due to low winds and temperature inversion, that can cause illness and death.

air purifying respirator (APR) A respirator that uses physical and/or chemical means to filter air breathed by the user.

Air Quality Control Region Federally designated area that is required to meet and maintain federal ambient air quality standards.

air quality criteria The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

air quality related value (AQRV) A value referring to the reduction in visibility that may be caused by a new air emission.

Air Quality Standards The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

air scour The agitation of granular filter media with air during the filter backwash cycle.

Air Seal Coarse bubble diffuser by Jet, Inc.

Air Shuttle Wastewater aeration system by Meurer Industries, Inc.

air stripping The process of removing volatile and semivolatile contaminants from liquid by passing air and liquid countercurrently through a packed tower.

air toxics Any air pollutant for which a NAAQS does not exist that may reasonably be anticipated to cause cancer, developmental effects, reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans.

Airamic® Air/gas diffuser by Ferro Corp.

AiRanger Tank level measurement system by Milltronics, Inc.

Airbeam™ Aluminum aeration basin cover by Enviroquip, Inc.

Airbrush™ Rotor aerator by United Industries, Inc.

AirCirc™ Assembly used to maintain the vortex within a wastewater degritter by Fluidyne Corp.

Airco Former name of BOC Gases.

Aircushion Flotation clarifier by Wilfley Weber, Inc.

Aire-O₂[®] Propeller aspirator aerator by Aeration Industries, Inc.

Air-Grit Aerated grit removal system by Walker Process Equipment.

AirJection[™] Aeration system by Mazzei Injector Corp.

AirLance[™] In-vessel composting technology by CBI Walker, Inc. (licensee) and American Bio Tech, Inc. (licensor).

airlift A device for pumping liquid by injecting air near the bottom of a riser pipe submerged in the liquid to be pumped, lowering the specific gravity of the fluid mixture, and allowing it to rise up the riser pump.

Airmaster Floating aerator by Airmaster Aerator.

AirMASTER Wet particulate scrubber by Fen-Tech Environmental, Inc.

Air-Mix[®] Pulsed bed filter surface cleaning process by USFilter/Zimpro.

Airmizer Air diffuser by USFilter/Diffused Air Products Group.

Airoflo[™] Rotor aerator by S&N Airoflo, Inc.

Air-O-Lator[®] Floating aerator by Air-O-Lator Corp.

AiroPump Air lift pump by Walker Process Equipment.

AirOXAL[®] Pure oxygen process by Air Liquide America.

AirRaider[™] MTBE pump and treat system by Product Level Control, Inc.

AirRide Density controlling system for compost in-feed by the former Waste Solutions.

Airsep Aerated grit collector system by USFilter/Aerator Products.

AirSep[®] Pressure swing adsorption oxygen systems by AirSep Corp.

AirTainer[™] Tank cover by NuTech Environmental Corp.

air-to-cloth ratio Bag house application criteria which is the ratio of the air flow line to net cloth area.

air-to-water ratio Air stripping application criteria indicating the volume of air required per volume of water to remove volatile contaminants.

Airvac[®] Vacuum sewage collection system by Airvac, Inc.

AISC American Institute of Steel Construction.

AISI American Iron and Steel Institute.

AIWPS Advanced Integrated Wastewater Pond System.

Akta Klor Sodium chlorite solution by Vulcan Performance Chemicals.

Aktivox Selective oxidant with specificity for sulfides by Vulcan Performance Chemicals.

AL Acceptable level.

alabaster A compact, fine-grained gypsum material.

alachlor A herbicide used mainly to control weeds in corn and soybean fields and marketed under the trade name Lasso.

ALAPCO Association of Local Air Pollution Control Officers.

Alar Trade name for a pesticide used primarily to make apples redder, firmer, and less likely to fall off trees prematurely.

ALARA As low as reasonably achievable.

Albrivap High temperature additive for evaporators by Albright & Wilson Americas.

Alcofix[®] Inorganic coagulant by Ciba Specialty Chemicals.

alcohol A class of compounds containing the hydroxyl group OH.

aldehyde A class of organic compounds produced by the oxidation of alcohols containing a CHO group including formaldehyde and acetaldehyde.

aldicarb An insecticide made from ethyl isocyanate and sold under the trade name Temik.

aldrin An insecticide and suspected carcinogen which has been banned for agricultural use by the U.S. Environmental Protection Agency (EPA).

alga The singular form of “algae.”

algae Primitive, free-floating, plant-like aquatic organisms whose biological activity affect the pH and dissolved oxygen content in a water body.

Algae Sweep Automation Automated clarifier algae sweep system by Ford Hall Co., Inc.

AlgaeMonitor On-line fluorometer to monitor relative algae levels in a water system by Turner Designs.

algal bloom A rapidly reproducing floating colony of algae that may cover a stream, lake, or reservoir, creating a nuisance condition.

AlgaSORB® Ion exchange medium for heavy metal removal by Bio-Recovery Systems, Inc.

algicide Any substance used to kill algae. Also “algaecide.”

aliphatic compounds Organic compounds with carbon atoms arranged in a straight or branched chain, rather than a ring.

aliquot The amount of a sample used for analysis.

Alizair® Fixed growth biotreat system for removal of odorous compounds from wastewater by USFilter/Krüger and OTV.

alkali A substance with highly basic properties.

alkali metals The elements lithium, sodium, potassium, rubidium, and cesium.

alkaline Water containing sufficient amounts of alkalinity to raise the pH above 7.0.

alkaline soil Soil with a pH greater than 7.0.

alkalinity The ability of a water to neutralize an acid due to the presence of carbonate, bicarbonate, and hydroxide ions.

Alkalinity First™ Sodium bicarbonate by Church & Dwight Co. Inc.

alkaloid Any of a group of organic compounds containing nitrogen and having alkaline properties including caffeine, cocaine, morphine, nicotine, and strychnine.

alkalosis Abnormal condition in the body resulting from an excess alkalinity and an increased blood and tissue pH, often caused by exposure to low-oxygen air found at high altitudes.

Alka-Pro® Process control system for biological wastewater treatment systems by USFilter/Davco.

All Climate™ Field-erected package wastewater plant by USFilter/Davco.

allergen A substance inducing an allergic state or reaction.

allergy A hypersensitivity to a particular substance such as food, pollen, or dust that causes the immune system to overreact to the substance.

Allied Colloids Former name of Ciba Specialty Chemicals.

Allis-Chalmers Former name of A-C Compressor Corp.

Allison Internally fed rotating drum screen by KRC (Hewitt) Inc.

allotropy The ability of an element to exist naturally in different forms in the same solid, liquid, or gaseous state.

alluvial soil Soil formed of material that was carried by flowing water before being deposited.

alpha factor The ratio of oxygen transfer coefficients for water and wastewater at the same temperature and pressure; used in the sizing of aeration equipment.

alpha particle A positively charged atomic particle composed of two neutrons and two protons released by some atoms undergoing radioactive decay.

alpha radiation A stream of positively charged particles released from radioactive isotopes.

alpha ray A stream of particles emitting from the nucleus of a helium atom undergoing disintegration.

alpine tundra An ecosystem found at high altitudes, above the timberline, characterized by mosses, lichens, and low-growing herbaceous plants.

ALR Action leakage rate.

alternative energy Energy obtained from sources other than traditional fossil fuels or nuclear energy, and which are usually renewable and nonpolluting. Alternative energy sources include solar energy, wave power, wind power, geothermal power, and biomass fuels.

alum Common name for aluminum sulfate, frequently used as a coagulant in water and wastewater treatment. Chemical formula is $\text{Al}_2(\text{SO}_4)_3$.

alum sludge Sludge resulting from treatment process where alum is used as a coagulant.

Alumadome Self supporting aluminum covers for circular tanks by Conservatek Industries, Inc.

Alumavault Self supporting aluminum covers for rectangular tanks by Conservatek Industries, Inc.

alumina A form of aluminum oxide, also called “corundum” or “emery.” Chemical formula is Al_2O_3 .

aluminum A lightweight, nonferrous metal with good corrosion resistance and electrical and thermal conductivity. Chemical symbol is Al.

aluminum chlorohydrate (ACH) Water treatment coagulant.

aluminum sulfate See “alum.”

AlumStor Modular liquid storage tank and feed system by ModuTank, Inc.

Alundum Porous diffuser dome by Sanitaire Corp.

Alusil 70™ Custom-activated zeolites by Selecto, Inc.

amalgam An alloy of mercury with one or more other metals. Silver amalgam is used as a dental filling.

Amazon™ Pulse jet baghouse filter bags by W.L. Gore & Associates, Inc.

Amberjet® Ion exchange resins by Rohm & Haas, Co.

Amberlite® Ion exchange resins by Rohm & Haas, Co.

Amberpack™ Ion exchange resins by Rohm & Haas, Co.

Ambersomb® Carbonaceous adsorbent for VOC removal by Rohm & Haas Co.

ambient air quality A general term used to describe the condition of the outdoor air.

amendment Organic material or bulking agent such as wood chips or sawdust added to municipal solids in a composting operation to promote uniform air flow.

Amerfloc® Polyelectrolyte used to enhance liquid/solid separation by Ashland Chemical, Drew Industrial.

America Norit Former name of Norit Americas Inc.

American Well Works Former name of Amwell Inc.

Ameroid Polyelectrolyte used to enhance liquid/solid separation by Ashland Chemical, Drew Division.

Amersep® Coagulants and metal precipitants used in water and wastewater treatment by Ashland Chemical, Drew Industrial.

amines A group of compounds that are derivatives of ammonia with a hydrocarbon group replacing one or more of the hydrogen atoms.

amino acid A group of organic acids containing an amino group (NH_2) and a carboxyl group (COOH) that link together to form the proteins necessary for all life.

Aminodan™ Process Process water treatment and recovery process by Biothane Corp.

AmmonAsorb™ Activated carbon product by Waterlink/Barnebey Sutcliffe.

ammonia A compound of hydrogen and nitrogen that occurs extensively in nature. Chemical formula is NH_3 .

ammonia nitrogen The quantity of elemental nitrogen present in the form of ammonia and the ammonium ion.

ammoniator A device used to feed gaseous ammonia.

ammonification Bacterial decomposition of organic nitrogen to ammonia.

ammonium ion A form of ammonia found in solution, the ion NH_4^+ .

ammonium nitrate A crystalline salt used as a source of nitrogen in the manufacture of some fertilizers and explosives. Chemical formula is NH_4NO_3 .

amoeba A single-celled protozoan microbe. Also spelled “ameba.”

amoebiasis See “amoebic dysentery.” Also spelled “amebiasis.”

amoebic dysentery A form of dysentery caused by a protozoan parasite, usually resulting from poor sanitary conditions and transmitted by contaminated food or water. Also spelled “amebic dysentery.”

amoebicide Any substance used to kill amoebas, either medicinally for treatment of amoebic dysentery or to sterilize water. Also spelled “amebicide.”

amorphous Non-crystalline, having no definite shape or form.

AMOS Air Management Oversight System.

amperometric titrator Titration device containing an internal indicator or electrometric device to show when the reactions are complete.

amphibian (1) A member of the Amphibia class of cold blooded, scaleless vertebrates which includes frogs and salamanders. (2) A plant or animal that can live both on land or in water.

Amphidrome™ Fixed-film sequencing batch biological filter by Tetra Process Technologies.

Ampho-Mag™ Magnesia compound to absorb and buffer chemical spills by Premier Chemicals.

amphoteric Capable of reacting in water either as a weak acid or weak base.

AMSA Association of Metropolitan Sewer(age) Agencies.

anabatic wind A localized wind that flows up valley or mountainous slopes, usually in the afternoon, caused by the replacement of cool valley air with the warmer, heated air above it.

anabiosis A temporary state of suspended animation undergone by some aquatic organisms to survive periods of drought.

anabolism The process in a plant or animal in which food is metabolized into complex compounds such as protein and living tissue.

anaerobe An organism that can thrive in the absence of free oxygen.

anaerobic Condition characterized by the absence of free oxygen.

anaerobic digestion Sludge stabilization process where the organic material in biological sludges are converted to methane and carbon dioxide in an airtight reactor.

Anaerobic Selector Process Biological system for phosphorus and BOD removal by USFilter/Davco.

Analite Portable turbidimeters by Advanced Polymer Systems.

analyte The chemical for which a sample is analyzed.

ANC See “acid neutralizing capacity (ANC).”

An-CAT® Polymer processing control unit by Norchem Industries.

ancillary equipment Devices such as piping, flanges, valves, and pumps which are used in conjunction with treatment process or system.

Anco Batch mixers by Enviropax, Inc.

anemometer An instrument used to measure the force or velocity of wind.

aneroid barometer An instrument used to measure atmospheric pressure which operates on the movement of a thin metal plate rather than the rise and fall of mercury.

angle of repose The maximum angle the inclined surface of a loosely divided material can make with the horizontal.

Angstrom (Å) A unit of measure equivalent to one ten-thousandth of a micron.

anhydride A chemical compound derived by the elimination of water.

anhydrite See “calcium sulfate.”

anhydrous A compound or substance that does not contain water.

animal unit (AU) A unit for establishing grazing pressures from different kinds of grazing animals which consume similar kinds of forage, where 1AU is equivalent to the weight of 1 cow and 1 calf set at 454 kg.

anion A negatively charged ion that migrates to the anode when an electrical potential is applied to a solution.

anion exchange An ion exchange process in which anions in solution are exchanged for other anions bound to an ion exchange resin or medium.

anionic polymer A polyelectrolyte with a net negative electrical charge.

Anitron Biological fluidized bed wastewater treatment system by USFilter/Krüger.

ANM™ Nanofiltration softening membrane by TriSep Corp.

annelid A wormlike organism, including earthworms and leeches, which have long, segmented bodies.

Annubar® Mass flow monitoring system by Dieterich Standard.

anode The positive electrode where current leaves an electrolytic solution.

anodic protection Electrochemical corrosion protection achieved through the use of an anode having a higher electrode potential than the metal to be protected.

anoxia A condition in which the blood oxygen level is less than normal.

anoxic Condition characterized by the absence of free oxygen.

ANOX-R Advanced treatment industrial wastewater treatment system by USFilter/Davco.

ANPRM Advance Notice for Public Rulemaking. An EPA program for holding public forums for potential changes to the federal Water Quality Standard regulations.

ANSI American National Standards Institute.

antagonism Interference or inhibition of the effect of one chemical by the action of another.

antarctic Characteristic of the region, climate, or vegetation south of the Antarctic Circle.

Antarctic Circle An imaginary circle parallel to the equator at latitude 66°34' south.

Anthozoa A class of saltwater polyps including corals and sea anemones.

anthracite A hard, black coal containing a high percentage of fixed carbon, a low percentage of volatile matter, and burns with little or no smoke.

anthracosis A lung disease more commonly known as "black lung disease."

Anthrafil® Filter anthracite by Unifilt Corp.

anthropodust Fugitive dust generated from human activities.

anthropogenic climate change Human-induced global warming caused primarily by carbon dioxide, methane, and nitrous oxide emissions from engine exhausts, as well as respiration of humans and animals.

anthropogenic compounds Compounds created by human beings, often relatively resistant to biodegradation.

antichlors Reagents such as sulfur dioxide, sodium bisulfite, and sodium thiosulfate which can be used to remove excess chlorine residuals from water by conversion to an inert salt.

anti-degradation clause See "prevention of significant deterioration (PSD)."

antifoam agent A surface active agent used to reduce or prevent foaming.

antifoulant An additive or dispersant that prevents fouling and/or the formation of scale.

antigen A substance capable of stimulating an immune response.

antiknock additive A compound, usually tetraethyl lead, added to gasoline to minimize engine pre-ignition and its' accompanying knocking or pinging. Pollution from the release of these compounds in auto emissions led to the introduction of unleaded gasoline.

antioxidant A substance that slows down or prevents oxidation of another substance.

antiscalant An additive that prevents the formation of inorganic scale.

Any Credible Evidence rule (ACE rule) Another name for EPA Clean Air Act "Credible Evidence rule."

AOB Ammonia-oxidizing bacteria.

AOC See "assimilable organic carbon (AOC)."

- AOPs** See “advanced oxidation processes (AOP).”
- AOT** Advanced oxidation technologies.
- AOX** See “adsorbable organic halides (AOX).”
- APCA** Air Pollution Control Association.
- APER** Air pollution emissions report.
- APF** See “assigned protective factor (APF).”
- APHA** American Public Health Association.
- API** American Petroleum Institute.
- API gravity** An index inversely related to specific gravity used to identify liquid hydrocarbons.
- API separator** Rectangular basin in which wastewater flows horizontally while free oil rises and is skimmed from the surface.
- APOVAC®** Anti-pollution vacuum system for solvent recovery by Rosenmund, Inc.
- apparent color** The color in water caused by the presence of suspended solids.
- approach velocity** The average water velocity of fluid in a channel upstream of a screen or other obstruction.
- APR** See “air purifying respirator (APR).”
- APTI** Air Pollution Training Institute.
- APWA** American Public Works Association.
- AQCCT** Air-quality criteria and control techniques.
- AQCP** Air Quality Control Program.
- AQCR** Air Quality Control Region.
- AQRV** See “air quality related value (AQRV).”
- AQTX** Aquatic toxicity.
- Aqua Bear** Medium density foam pipeline cleaners by Girard Industries, Inc.
- Aqua Criss Cross** Medium density coated foam pipeline cleaners by Girard Industries, Inc.
- Aqua Guard®** Self cleaning bar screen by Parkson Corp.
- Aqua Pigs™** Polyurethane foam pipeline cleaners by Girard Industries, Inc.
- Aqua Swab** Soft polyurethane pipeline cleaners by Girard Industries, Inc.
- Aqua UV™** Ultraviolet water disinfection systems by Trojan Technologies, Inc.
- Aqua-4™** Surface water treatment plant by Smith & Loveless, Inc.
- AquaABF™** Traveling bridge type automatic backwash package filter by Aqua-Aerobic Systems, Inc.
- Aquabelt®** Gravity belt thickener by Ashbrook Corp. (U.S.) Simon-Hartley, Ltd. (U.K.).
- AquaCalc** Open channel flow computer by JBS Instruments.
- AquaCAM-D** Aerator/mixer/decanter for use in sequencing batch reactor by Aqua-Aerobic Systems, Inc.
- Aqua-Carb** Activated carbon by USFilter/Westates.
- Aqua-Cat®** Sulfide conversion process to control odors by USFilter/Gas Technologies.
- Aqua-Cell™** Package water treatment plant by WesTech Engineering Inc.
- Aquaclaire™** Wastewater treatment systems by DAS International, Inc.
- Aquacode** Membrane vessels by Spaulding Composites Co.

- aquaculture** The managed production of fish or shellfish in a pond or lagoon.
- AquaDDM[®]** Direct drive mixers by Aqua-Aerobics Systems, Inc.
- AquaDecant[®]** Floating decanter by AquaTurbo Systems.
- AquadeneTM** Corrosion and scale control products by Stiles-Kem Division, Met Pro Corp.
- AquaDiskTM** Woven cloth tertiary filter by Aqua-Aerobic Systems, Inc.
- Aquafeed[®]** Reverse osmosis antiscalants by B.F. Goodrich Co.
- Aqua-FerTM** Well water treatment plant designed for iron removal by Smith & Loveless, Inc.
- Aqua-FixTM** Dissolved ionic contaminant removal system by ATA Technologies Corp.
- Aquaflow** Former name of product group acquired by USFilter/Industrial Waste-water Systems.
- Aqua-Jet[®]** Direct drive aerators by Aqua-Aerobics Systems, Inc.
- Aqua-Lator[®]** High speed floating aerator by USFilter/Aerator Products.
- AquaLift[®]** Screw pump by Parkson Corp.
- Aquamag[®]** Magnesium hydroxide by Premier Chemicals.
- AquaMaxTM** Desalination evaporator antiscalant by BetzDearborn, Inc.
- Aquamite[®]** Electrodialysis water treatment systems by Ionics, Inc.
- AquaMJATM** Manifold jet aerator by Aqua-Aerobic Systems, Inc.
- Aquaport[®]** Seawater desalination system by Ambient Technologies, Inc.
- Aquaray[®]** Ultraviolet disinfection system by Infilco Degremont, Inc.
- Aquaritrol[®]** Coagulant control system using a programmable controller by USFilter/Microfloc.
- Aquarius[®]** Modular water treatment plant by USFilter/Microfloc.
- AquaSBR[®]** Sequencing batch reactor by Aqua-Aerobics Systems, Inc.
- Aquascan** On-line VOC monitor by Sentex Systems, Inc.
- Aqua-ScrubTM** Powdered activated carbon adsorption system by USFilter/Westates.
- AquaSEALTM** Sequencing extended aeration lagoon system by Aqua-Aerobics Systems, Inc.
- Aqua-Sensor** Control system for water softener regeneration by Culligan International Corp.
- Aquashade[®]** Aquatic plant growth control by Applied Biochemists, Inc.
- Aqua-Shear** Mixer by Flow Process Technologies, Inc.
- Aquasorb[®]** Carbon adsorption treatment systems by Hadley Industries.
- Aquasource[®]** Membrane system by Infilco Degremont, Inc.
- Aquaspir[®]** Shaftless dewatering screw by Andritz-Ruthner, Inc.
- Aquastore[®]** Storage tanks by A.O. Smith Engineered Storage Products.
- Aquatair** Packaged biological wastewater treatment plant by BCA Industrial Controls, Ltd.
- Aquatec[®]** Solid media contact filter vessels by Colloid Environmental Technologies Co.
- Aquatech Systems** Former name of Aqualytics, Inc.
- aquatic humic substances (AHS)** Humic substances in true solution that exhibit colloidal properties.
- AquatreatTM** Sequencing batch reactor by EnviroSystems Supply.

- Aqua-Trim™** Tray-type air stripper by Delta Cooling Towers, Inc.
- AquaTurbo®** Surface aerator and mixer products by AquaTurbo Systems.
- Aquavap** Vapor compression type evaporator by Licon, Inc.
- Aqua-View** Particle measuring system by Particle Measuring Systems, Inc.
- Aquaward®** Tablet feeder disinfection system by Exceltec International Corp.
- Aquazur V®** Rapid sand gravity filter by Infilco Degremont, Inc.
- aqueduct** A conduit for carrying running water.
- aqueous** Something made up of, similar to, or containing water.
- aqueous chlorine** Term used to describe chlorine or chlorine compounds dissolved in water, often mistakenly called “liquid chlorine.”
- aqueous solution** A solution in which water is the solvent.
- aquiclude** A low-permeability underground rock formation that absorbs water slowly but will not allow its free passage.
- aquifer** A subsurface geological formation containing a large quantity of water.
- aquifuge** An underground layer of impermeable rock that will not allow the free passage of groundwater.
- Aquilair®** Oxidation process for removal of VOC compounds from wastewater by USFilter/Krüger (North America) and OTV.
- AQuit™** Sulfide control product by USFilter/Davis Process.
- Aquox™** Potassium permanganate by Nalon Chemical, distributed by American International Chemical, Inc.
- arable** Land capable of being farmed.
- ARAR** Applicable or relevant and appropriate requirements. Cleanup standards, control standards and other substantive environmental protection requirements, criteria, and limitations promulgated under federal, state, and local laws.
- Arc Screen™** Self cleaning curved bar screen by Infilco Degremont, Inc.
- ARCC** American Rivers Conservation Council.
- Archimedes’ principle** The principle of buoyancy which states that the force on a submerged body acts vertically upward through the center of gravity of the displaced fluid and is equal to the weight of the fluid displaced.
- Archimedes’ screw pump** See “screw pump.”
- archipelago** A group or chain of many islands.
- arctic** Characteristic of the region, climate, or vegetation north of the Arctic Circle.
- Arctic Circle** An imaginary circle parallel to the equator at latitude 66°34’ north.
- Arcticaer** High speed surface aerator with submersible motor by USFilter/Aerator Products.
- area source** Any small source of non-natural air pollution that is released over a relatively small area but which cannot be classified as a point source, including vehicles and other small engines, small businesses and household activities.
- Argo Scientific** Former name of BetzDearborn-Argo District.
- ARI** Sulfur recovery and odor control product line by USFilter/Gas Technologies.
- ARI** See “average rainfall intensity (ARI).”
- Aria™** Water treatment system by Pall Corp.
- Aries™** Filtration air scour technology by Roberts Filter Group.
- arithmetic mean** The sum of a set of observations divided by the number of observations.

Arm & Hammer® Sodium bicarbonate by Church & Dwight Co. Inc.

Armco Former sluice gate manufacturer acquired by Hydro Gate Corp.

Arna® Ultraviolet disinfection system by Arlat, Inc.

aromatics A group of hydrocarbon compounds, including benzene, containing a closed ring structure.

array (1) A staged arrangement of membrane elements in a system. (2) A group of solar collection devices arranged in a suitable pattern to efficiently collect solar energy.

Arro-Care® Reverse osmosis maintenance and support services by USFilter/Rockford.

Arro-Cleaning® Membrane care services by USFilter/Rockford.

Arrowhead® Water treatment product line by USFilter/Rockford.

arroyo A stream or watercourse that is often dry.

ARSTM Air regulated siphon by John Meunier, Inc.

arsenic A naturally occurring element that is toxic to humans at very low levels. Chemical formula is As.

arsenicals Pesticides containing arsenic.

Artco Applied Regenerative Technologies Co.

artesian water Bottled water from a well that taps a confined aquifer which is located above the normal water table.

artesian well A well with sufficient pressure to produce water without pumping.

arthropod Any of the largest phylum of invertebrate animals including insects and crustaceans having segmented bodies, exoskeletons, and jointed legs occurring in pairs.

Arus Andritz Former name of Andritz-Ruthner, Inc.

ASA Algae sweep automation system by Ford Hall Co., Inc.

ASB Aerated stabilization basin.

asbestos A mineral fiber, positively identified as a carcinogen, that does not conduct heat or electricity and formerly in wide use in the building industry for thermal insulation, soundproofing, roofing, and electrical insulation.

asbestos cement pipe Pipe manufactured of a mixture of asbestos fiber and Portland cement.

asbestos-containing material Construction materials that contain more than one percent asbestos.

asbestos-containing waste materials (ACWM) Mill tailings or any waste that contains commercial asbestos and is generated by a source covered by the Clean Air Act Asbestos NESHAPS.

asbestosis A chronic lung disease caused by exposure or inhalation of asbestos fibers.

as-built drawings The original plans and specifications prepared for construction and corrected to reflect how a facility was actually built or installed.

A-scale sound level (dBA) A modification of the decibel scale that approximates the sensitivity of the human ear used to note the intensity or annoyance of noise pollution.

ASCE American Society of Civil Engineers.

Asdor Former name of USFilter/Asdor.

ASDWA Association of State Drinking Water Administrators.

aseptic The state of being free of pathogenic organisms.

ash The nonvolatile inorganic solids that remain after incineration.

Ashaire Aerator product line by USFilter/Aerator Products.

Ashbrook-Simon-Hartley Former name of Ashbrook Corp.

Ashfix™ A process to stabilize heavy metals in sludge and ash by Ashland Chemical, Drew Industrial.

ASHRAE American Society of Heating, Refrigeration, and Air Conditioning Engineers.

Asiatic clam A fresh water clam originally found in Southeast Asia and introduced in the U.S. in 1938.

ASME American Society of Mechanical Engineers.

Aspergillus fumigatus Airborne fungi that may result from composting operations which may cause human ear, lung, and sinus infections.

asphalt-rubber A mixture of ground rubber and bituminous concrete used as a pavement interlayer to reduce stress and prevent cracking.

asphyxiant A vapor or gas such as carbon monoxide that can cause unconsciousness or death by suffocation.

Aspi-Jet™ Aspirating aerator by Aqua-Aerobic Systems, Inc.

aspirating aerator Aeration device using a motor driven propeller to draw atmospheric air into the turbulence caused by the propeller to cause the formation of small bubbles.

aspirator A hydraulic device that creates a negative pressure by forcing liquid through a restriction and increasing the velocity head.

ASQC American Society for Quality Control.

ASR See “atmosphere supplying respirator (ASR).”

assay A test for a particular chemical or effect.

assigned protective factor (APF) Respirator designation indicating how much contaminant will be reduced with proper respiratory fit and wear. An APF of 5 indicates that if a cubic meter of air contains 10 mg of contaminant, the effective exposure would be 10/5 or 2 mg/cu m.

assimilable organic carbon (AOC) The portion of dissolved organic carbon that is easily used by microbes as a carbon source.

assimilation The ability of a body of water to purify itself of pollutants.

assimilative capacity The ability of a water body to receive wastewater and toxic materials without deleterious effects on aquatic life or the humans who consume the water.

AST Aboveground storage tanks.

ASTM American Society for Testing and Materials.

Astrasand® Continuously cleaned sand filter by Astraco Water Engineering.

Astraseparator® Inclined plate settler by Astraco Water Engineering.

asymmetric membrane Membranes that are not reversible and can only desalinate efficiently in one direction.

Asymmetrix™ Membrane cartridge filter by USFilter/Filtration & Separation.

AT® Ozone generator by Ozonia North America.

ATAD See “autothermal thermophilic aerobic digestion (ATAD).”

Atara Former manufacturer of digester gas mixing equipment whose product line was acquired by Infilco Degremont, Inc.

ATD™ Autotherm aerobic sludge digestion system by CBI Walker, Inc.

Athos Wet air oxidation process by USFilter/Krüger (North America) and OTV.

ATI Analytical Technology, Inc.

ATL® Aero Tec Laboratories, Inc.

Atlantes Chemical Systems Former name of Hoffland Environmental, Inc.

ATLAS™ Advanced technology lagoon aeration system by Environmental Dynamics Inc.

atm See “atmosphere.”

atmometer An instrument used to measure the evaporative capacity of the air.

atmosphere (1) The gaseous region that surrounds the earth. (2) A unit of pressure equal to 1.0333 kg/sq cm or 14.7 psi. Abbreviated “atm.”

atmosphere supplying respirator (ASR) A respirator which supplies air or oxygen to the user.

atmospheric corrosion Corrosion resulting from exposure to the atmosphere.

atmospheric pressure The force exerted by the weight of the atmosphere above the point of measurement. At sea level, this pressure equals 101.3 kPa (14.7 psi), 760 mm (29.9 inches) of mercury column, or 10.3 m (33.9 feet) of water column.

Atochem Former name of Elf Atochem North America, Inc.

atoll A circular reef enclosing a shallow lagoon.

atom The smallest unit of an element that retains the characteristics of that element.

Atomerator® Pressure aerator for iron oxidation by USFilter/General Filter.

atomic absorption spectrophotometry (AA) A highly sensitive instrumental technique for measuring trace quantities of elements in water.

atomize To divide a liquid into extremely fine particles.

atomizer An instrument through which a liquid is sprayed to produce a fine mist.

ATP (1) Average transmembrane pressure. (2) See “adenosine triphosphate (ATP).” (3) See “advanced treatment plant (ATP).”

ATP™ Aerobic thermophilic process sludge treatment system by CBI Walker, Inc.

ATS™ Sorbent media product line by Engelhard Corp.

ATSDR Agency for Toxic Substances and Disease Registry.

attached growth process See “fixed film process.”

attainment area A geographic area in which the levels of a criteria air pollutant meet the health-based National Ambient Air Quality Standard for that pollutant.

attenuation The process by which a compound is reduced in concentration over time, through absorption, adsorption, degradation, dilution, and/or transformation.

attractant A chemical or agent that lures insects or other pests by stimulating their sense of smell.

AU See “animal unit (AU).”

Auger Monster® Modular screen/grinder/solids removal unit for wastewater headworks system by JWC Environmental.

Aurora UV™ Ultraviolet disinfection system by Calgon Carbon Corp.

Austgen-Biojet Former name of ABJ product group of Sanitaire Corp.

Auto5™ Stack sampling system by Andersen Instruments, Inc.

- AutoBelt** Rotary vacuum filter formerly offered by Walker Process Equipment.
- autochthonous** A rock formation, organic matter, or substance that is produced or originates in the place where it is found.
- autoclave** A device that sterilizes materials by exposure to pressurized steam.
- Auto-Clean** Dissolved oxygen sensor by Analytical Technology, Inc.
- Auto-Cleanse** Self-cleaning pump station with differential pressure activated flush valve by ITT Flygt Corp.
- Autocon** Product group integrated within USFilter/Control Systems.
- Auto-Dox** Controlled aeration weir by Purestream, Inc.
- autogenous combustion** Burning that occurs when the heat of combustion of a wet organic material or sludge is sufficient to vaporize the water and maintain combustion without auxiliary fuel.
- autogenous temperature** Equilibrium temperature in sludge combustion where the heat input from the fuel equals the heat losses, and combustion is self-supporting.
- autoignition temperature** The minimum temperature at which a substance ignites without application of a flame or spark.
- Auto-Jet®** Pressure leaf filter by USFilter/Whittier.
- Autojust** Automatic feedwell gate controller for circular sludge collectors by USFilter/Aerator Products.
- automatic sampling** Collecting samples of prescribed volume over a defined time period by an apparatus designed to operate remotely without direct manual control.
- auto-oxidation** A self-induced oxidation process.
- Autopress** High throughput automatic filter press by USFilter/Dewatering Systems.
- Auto-Pulse™** Tubular backpulse filter by USFilter/Whittier.
- Auto-Rake®** Reciprocating rake bar screen by Franklin Miller, Inc.
- autoreactive** A compound that is reactive under normal conditions and does not require heat, additional compounds, or a change in conditions.
- Auto-Retreat** Automatic bar screen control system by Infilco Degremont, Inc.
- AutoSDI™** Portable, computer-based silt density index instrument by King Lee Technologies.
- Auto-Shell™** Granular media filter by USFilter/Whittier.
- Auto-Shok™** Tube-type vertical pressure leaf filter by USFilter/Whittier.
- Auto-Skimmer™** Skimmer used to remove floating hydrocarbons from water wells by Science Application International Corp.
- AutoTherm™** Aerobic thermophilic digestion system by CBI Walker, Inc.
- autothermal thermophilic aerobic digestion (ATAD)** A biological digestion system that converts soluble organics to lower-energy forms through anaerobic, fermentative, and aerobic processes at thermophilic temperatures.
- autothermic combustion** See “autogenous combustion.”
- Autotravel** Traveling bridge sludge collectors by Simon-Hartley, Ltd.
- Autotrol** Rotating biological contactors product line by USFilter/Envirex.
- autotroph** Organism that derives its cell carbon from carbon dioxide.
- Auto-Vac®** Rotary drum filter by Alar Engineering Corp.
- autoxidation** A spontaneous process in which a compound is oxidized, usually in the presence of oxygen, but other compounds can act as electron acceptors.

available chlorine A measure of the amount of chlorine available in chlorinated lime, hypochlorite compounds, and other materials used as a source of chlorine when compared with that of liquid or gaseous chlorine.

average daily flow (ADF) The total flow past a point over a period of time divided by the number of days in that period.

average flow The arithmetic average of flows measured at a given point.

average rainfall intensity (ARI) A measurement of rainfall per unit of time.

Avery Filter Recessed chamber filter press by Komline-Sanderson, Engineering Corp.

AVGF® Automatic valveless gravity filter by USFilter/Warren.

AWI Anthratch Western, Inc.

AWS American Welding Society.

AWT See “advanced wastewater treatment (AWT).”

AWWA American Water Works Association.

AWWARF American Water Works Association Research Foundation.

axial flow The flow of fluid in the same direction as the axis of symmetry of a tank or basin.

axial flow pump A type of centrifugal pump in which fluid flow remains parallel to the flow path and develops most of its head by the lifting action of the vanes.

Azenit Biological wastewater treatment process technology by USFilter/Krüger (North America) and OTV.

azeotropic A liquid of two or more substances that behaves like a single substance in that the vapor produced by partial evaporation has the same composition as the liquid.

Aztec® Chlorine/oxidant residual analyzer by Capital Controls Co.

B

B-10 life The rated life defining the number of revolutions that 90% of a group of identical bearings will complete before first evidence of failure develops. Also known as “L-10 life.”

B2A™ Multi-media biological filter by USFilter/Krüger (North America) and OTV.

Babcock Water Engineering Former name of CASS Water Engineering, Inc.

BAC Biologically active carbon.

bacilli Rod-shaped bacteria.

back pressure Pressure due to a force operating in a direction opposite to that required.

backfill The material used to refill a ditch or excavation, or the process of refilling.

backflow Flow reversal in a water distribution system that may result in contamination due to a cross connection.

backflow prevention device Device used to prevent cross connection, or backflow of nonpotable water into potable water system.