

# Environmental Solutions for the Chemical/Pharmaceutical Industry



## Areas of Expertise

- Air, Water and Waste Permitting, Compliance, Management
- EHS Management
- Environmental Toxicology and Product Consulting
- Community/Stakeholder Relations
- Wastewater Process Engineering, Conservation and Design
- Property Due Diligence Surveys, M&A, Site Assessment
- Remediation and Facility Decommissioning/Demolition and Redevelopment
- Risk Management Analysis, Process Safety
- Industrial Hygiene, Sustainability

## Overview

The Chemical and Pharmaceutical industries face many challenges in meeting cost reduction, risk management, and brand enhancement objectives worldwide. AECOM helps clients meet these objectives with experienced staff, a commitment to cost-effective, quality work, and health & safety excellence. Widely recognized for technical and regulatory consulting, AECOM delivers strong project management, multidisciplinary expertise and superior client service.

## Our Approach

AECOM's environmental professionals help Chemical and Pharmaceutical companies save money and reduce liabilities at facilities around the world. Recently, we helped a global pharmaceutical manufacturer achieve fast-track site closure of a facility with historic use of radioactive, biological and chemical wastes. In China, we assisted a major compressed gas manufacturer with facility audits to ensure operational compliance with diverse and rapidly changing EHS regulations; our China EHS Reporter, issued quarterly, provides valuable alerts and insights to many clients in the region. In Europe, we work with companies to anticipate and respond to the impact of REACH regulations.

We work extensively with chemical and pharmaceutical manufacturers in managing and remediating legacy sites. Some of these projects include the redevelopment of property and facility assets.

We keep current with global issues facing chemical and pharmaceutical manufacturers through AECOM's worldwide technical practice network and our involvement with industry associations, such as the American Chemistry Council and many regional and state/provincial organizations. In this way, we provide our clients with the most current, innovative, and efficient solutions to manage environmental liabilities and enhance company performance and reputation.

## Areas of Expertise

- **AIR, WATER AND WASTE PERMITTING, COMPLIANCE, MANAGEMENT.** Successful project permitting and compliance requires an understanding of the intricacies of environmental regulations, the complexities of resources affected by development, and solid working relationships with regulators. Drawing on our full range of technical specialists — resource scientists, environmental engineers, planners, and regulatory specialists — AECOM's global environmental practice helps clients streamline the approval process and comply with environmental laws.
- **EHS MANAGEMENT.** AECOM provides integrated environmental health and safety programs and auditing globally for compliance with OSHA, FIFRA, TSCA, EPA, REACH, CLP, and COSHH. We also provide GHG management, Responsible Care, Security, PSM, Nanotechnology, and Information Management Systems.

- **ENVIRONMENTAL TOXICOLOGY AND PRODUCT CONSULTING.** Our scientists analyze chemicals used or created as intermediaries in production, chemicals distributed and imported, and chemicals transported to determine regulatory onus. Based on total inventories, we determine hazard rankings, need for further chemical determinations (for mixtures, and intermediates), and potential for effect (onsite worker, off site migration, on-site environment) during product creation and ultimate use or disposition. We also develop SDS for raw materials, intermediates, and final products.
- **COMMUNITY/STAKEHOLDER RELATIONS.** AECOM's experience and literature confirm that the best approach to community relations is to keep stakeholders and the public informed throughout project planning process, so that no one feels the need to take dramatic action to be heard or considered. AECOM's community relations experts have implemented successful, cost-effective public involvement programs to support complex environmental projects for many chemical and pharmaceutical clients.
- **WASTEWATER PROCESS ENGINEERING, CONSERVATION AND DESIGN.** In addition to increased pressure from stakeholders and regulatory agencies to reduce water use, facilities also face greater total water management costs due to stricter wastewater treatment requirements and rising water costs. Our knowledge of local regulations and our long-term relationships with regulators move projects to successful completion. Our solutions conserve water resources, lower water consumption, reduce treatment and management costs, and maintain regulatory compliance.





## Environmental Solutions for the Chemical/Pharmaceutical Industry *(continued)*



### Key AECOM Attributes

- **Pharmaceutical-Chemical Industry Focus** – AECOM’s industrial focus means we understand business drivers in today’s competitive, cost-driven environment. We are forward looking, process-centric, and develop and deliver innovative solutions. We have a shared vision with our clients and an established network of multi-disciplined technical experts to help us meet our clients’ objectives to optimize outcomes and reduce costs.
- **Technical Depth with Similar Issues** - Proven performance with hundreds of similar challenges provides AECOM with the depth of expertise to effectively manage and solve any technical challenge. We have established technology/technical expert networks which can be easily accessed through a published Technology Directory and Technical Practice Network, encompassing nearly every environmental issue relevant to the chemical/pharmaceutical industry. We have earned the respect of regulatory agencies, so our proposed solutions have a high likelihood of acceptance.
- **Understanding Client Business Drivers** – Because we have extensive chemical/pharmaceutical industry experience, AECOM understands the economic, technical, regulatory, and program management goals that must be addressed in any project endeavor. We work closely with clients to ensure our services support business needs, and understand specific business metrics.

- **PROPERTY DUE DILIGENCE SURVEYS, M&A, SITE ASSESSMENT.** Our substantial team of M&A consultants work worldwide, supported by AECOM’s global network of scientists, engineers and experts across all major disciplines. We provide reliable commercial advice on complex issues, meet our client’s needs, reduce their exposure and costs, improve returns on investment, and improve client reputations. AECOM understands that, during plant closures, owners face the challenges of defining divestiture options, taking options to the external market, and executing the selected options, while simultaneously meeting the myriad of regulatory requirements and minimizing long-term environmental, legal, and financial liabilities.
- **REMEDIATION AND FACILITY DECOMMISSIONING/DECONTAMINATION/DEMOLITION AND REDEVELOPMENT.** AECOM solves complex site contamination challenges — addressing a broad array of contaminants. AECOM remediation teams critically assess the nature and extent of contamination, assess risks to identify receptors and safe exposure levels, embed leading-edge innovations and technology to simplify remedial actions and reduce costs, prepare remedial designs that appropriately address the problems posed by the contaminants, and successfully negotiate favorable regulatory settlements. To properly manage these liabilities, one must carefully consider site-specific conditions, regulatory requirements, and stakeholder issues. AECOM delivers multi-disciplinary, professionally managed Owner’s Engineer facility closure services to our clients to adequately address these execution challenges. Relying on AECOM for all phases of a closure project offers several advantages. When AECOM handles all site decommissioning needs from start to finish, cost savings are achieved, and risk/liability is minimized.
- **RISK MANAGEMENT ANALYSIS, PROCESS SAFETY.** Our risk management analysis includes statistical parameters, severity and probability associated with health risks, toxicological profiles, occupational exposure limits, biological safety levels, and physical hazards. We provide clients with process safety and machine safety programs that address machine guarding, electrical safety, and ergonomic considerations, and audit the resultant program implementation and success. We determine chemical (industrial, environmental, Nano-particulate based), biological (Risk Group 1 through 3, pandemic, building potentiated), and physical (radiation, electromagnetic field, noise) risk levels. Using standard and forensic industrial hygiene and in-depth expert research evaluations, we determine the current state of risk. We provide on-site support to develop ventilation, decontamination, and source reduction methodologies to lessen risk. We also research green chemistry alternatives given worker safety and environmental requirements, and determine NORM for radioactive exposures, and analyze EMF risks.
- **INDUSTRIAL HYGIENE, Sustainability.** We manage, audit, and implement industrial hygiene, including those to assess sensitizing agents and nano-particulate exposures. We also provide benchmarking, sustainability, and stewardship programs, product responsibility, waste management, recycling, reuse.

